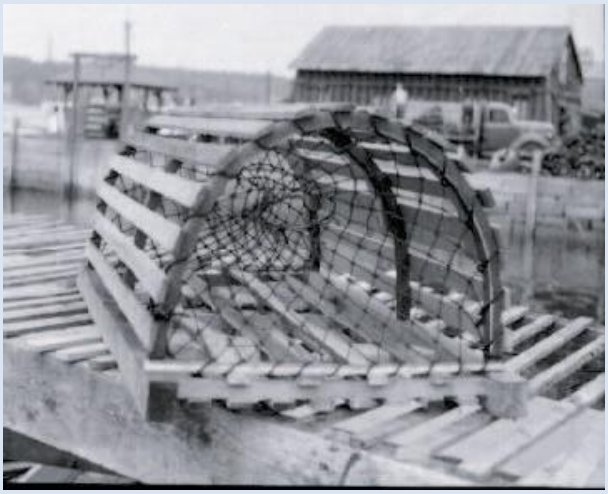
FINAL ENVIRONMENTAL IMPACT STATEMENT
- FINAL REGULATORY IMPACT REVIEW -
FINAL REGULATORY FLEXIBILITY ANALYSIS

For Proposed Effort Control Measures
For the American Lobster Fishery



FEDERAL AMERICAN LOBSTER MANAGEMENT
in the Exclusive Economic Zone
based upon management measures specified in the
INTERSTATE FISHERY MANAGEMENT PLAN
FOR AMERICAN LOBSTER
December 2013

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

DEC 12 2013

Dear Reviewer:

In accordance with provisions of the National Environmental Policy Act (NEPA), we enclose for your review the Final Environmental Impact Statement (FEIS) for Effort Control Measures for the American Lobster Fishery (RIN 0648-AT31).

This FEIS is prepared pursuant to NEPA to assess the environmental impacts associated with NOAA proceeding with measures to establish limited access programs to cap and control lobster trap fishing effort in the Nearshore waters from Cape Cod, Massachusetts, to New York, in Lobster Management Area 2 and the Outer Cape Lobster Management Area. Federal lobster permit holders with qualified trap allocations for either of these two management areas, or Offshore Lobster Management Area 3, would be able to trade (buy and sell) part of their trap allocation with other Federal lobster permit holders. With each transfer of a partial trap allocation, 10 percent of the total number of transferred traps would be permanently eliminated from the fishery as a resource conservation tax.

Additional copies of the FEIS may be obtained from the Responsible Program Official identified below. The document is also accessible electronically through NOAA's National Marine Fisheries Service website at: http://www.nero.noaa.gov/sustainable/species/lobster.

NOAA is not required to respond to comments received during the agency's 30-day comment period as a result of the issuance of the FEIS. However, comments received by January 21, 2014, will be reviewed and considered for their impact on issuance of a record of decision (ROD). Please send comments to the responsible official identified below. The ROD will be made available publicly following final agency action on or after January 21, 2014.

Responsible Program Official: John K. Bullard
Regional Administrator
Northeast Region
National Oceanic and Atmospheric Administration
55 Great Republic Drive
Gloucester, MA 01930
Phone: (978) 281-9343
Facsimile: (978) 281-9135
nmfs.ner.lobsterFEIS@noaa.gov

Sincerely,

Patricia A. Montanio
NOAA NEPA Coordinator

Enclosure

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5. *For NMFS HQ distribution, send electronically or inform of website location:*

Angela Somma in the Endangered Species Division
angela.somma@noaa.gov

Bruce Buckson in the Enforcement Division
bruce.buckson@noaa.gov

Galen Tromble in the Sustainable Fisheries Division
galen.tromble@noaa.gov

TABLE OF CONTENTS

LIST OF CHARTS v
LIST OF FIGURES vi
LIST OF TABLES vii
Executive Summary
Status of the American Lobster Fishery ES-3
Alternatives ES-4
Regulatory Setting for American Lobster ES-8
Economic Environment ES-9
Social Environment ES-10
Environmental Impacts ES-11
INTRODUCTION AND PURPOSE AND NEED CHAPTER 1
1.0 ATLANTIC COASTAL ACT AND ATLANTIC STATES MARINE FISHERIES COMMISSION MANAGEMENT MEASURES 1-1
1.1 PURPOSE AND NEED 1-3
1.1.1 Status of the American Lobster Fishery 1-4
1.2 SCOPE AND ORGANIZATION OF THIS EIS 1-6
1.3 PUBLIC REVIEW AND COMMENT 1-7
1.4 REGULATORY REQUIREMENTS 1-10
DETAILED DESCRIPTION OF PROPOSED MANAGEMENT MEASURES AND ALTERNATIVES CHAPTER 2
2.0 BACKGROUND 2-1
2.1 ALTERNATIVES 2-5
Considered-But-Rejected: State Qualification of Scuba Divers in the Outer Cape 2-13
2.1.2 LCMA 2 Limited Access Alternatives. 2-14
2.1.3 Individual Transferable Trap (ITT) Program Alternatives 2-20
AFFECTED ENVIRONMENT CHAPTER 3
3.0 INTRODUCTION 3-1
3.1 REGULATORY SETTING FOR AMERICAN LOBSTER 3-2
3.2 ECONOMIC ENVIRONMENT 3-5
3.3 SOCIAL ENVIRONMENT 3-12
3.3.1 Location of the Commercial Lobster Industry 3-13
3.4 AMERICAN LOBSTER 3-32

3.4.1 Biological Characteristics 3-32
3.5 PROTECTED RESOURCES 3-42
3.5.1 Species Potentially Affected 3-44
3.6 OTHER AFFECTED SPECIES 3-60
3.6.1 Bycatch Fisheries 3-60
3.6.2 Bait Fisheries 3-63
ENVIRONMENTAL IMPACTS CHAPTER 4
4.0 Introduction 4-1
4.1 Major Topics Common to Each Alternative Evaluation 4-4
4.2 LCMA OCC Alternatives 4-13
4.2.2 Alternative 2 – Commission Alternative (Preferred Alternative) 4-23
4.3 LCMA 2 Alternatives 4-31
4.3.1 Alternative 1-No Action 4-35
4.3.2 Alternative 2 – Commission Alternative (Preferred Alternative) 4-40
4.3.3 Alternative 3 – Qualify Only 4-45
4.4 Inter-Transferable Trap Alternatives 4-50
4.4.1 ITT Alternative 1 – No Action 4-55
4.4.2 Alternative 2-Commission Alternative 4-62
4.4.3 ITT Alternative 3-Transferability for LCMA 3 Only 4-69
4.5 Economic Impacts 4-79
4.6 Social Impacts 4-84
4.6.1 Background 4-84
4.6.2 Methodology 4-84
CUMULATIVE IMPACTS CHAPTER 5
5.0 Introduction 5-1
5.1 Geographic and Temporal Boundaries 5-1
5.2 Past, Present, and Reasonably Foreseeable Cumulative Actions 5-1
5.2.1 Lobster Fishery Management Actions 5-2
5.2.3 Non-Fishing Related Commercial and Industrial Development Actions 5-8
OTHER APPLICABLE LAW CHAPTER 6
6.1 Coastal Zone Management Act (CZMA) 6-1
6.2 Paperwork Reduction Act (PRA) 6-1
6.3.1 Utility of Information Product 6-1
6.3.2 Integrity of Information Product 6-2

6.3.3 Objectivity of Information Product 6-2
6.4 Magnuson-Stevens Fishery Conservation and Management Act 6-3
6.4.1 National Standards of the Magnuson Stevens Act 6-3
6.4.2 Essential Fish Habitat (EFH) 6-5
6.5 Executive Order 12630 6-6
6.6 Executive Order 12866 6-6
6.7 Executive Order 13132 6-6
6.8 Executive Order 13211 6-7
6.9 Atlantic Coastal Act 6-7

LIST OF PREPARERS OF THE EIS CHAPTER 7

FINAL REGULATORY FLEXIBILITY ANALYSIS CHAPTER 8

REFERENCES CHAPTER 9

LIST OF APPENDICES CHAPTER 10

Appendix 1 - Addendum VI

Appendix 2 - Addendum VII

Appendix 3 - Addendum XII

Appendix 4 - Addendum XIII

Appendix 5 - Addendum XIV

Appendix 6 - Addendum XVIII

Appendix 7 - Public Scoping Comments (DEIS and Proposed Rule) for Proposed Effort Control Measures and NMFS's Response

Appendix 8 - Commission's Public Process on Addenda related to Limited Entry in LCMAs 2, 3, and OCC, and Individual Trap Transferability in these LCMAs

Appendix 9 - Notice to American Lobster Permit Holders Fishing in LCMA 2, 3, and OCC Lobster Conservation Management Areas

Appendix 10 - The Commission's "White Paper"

Appendix 11 - Technical Review of Regression Analysis

Appendix 12 - GMRI Survey

Appendix 13 - Trap Tag Tables

Appendix 14 - MA DMF documents - Reducing Trap Effort in the LCMA 2 and OCC Fisheries Through and Effort Control Plan - Comprehensive Status Report

Appendix 15 - NMFS Comments on Draft Addendum XII

Appendix 16 - Letter from Patricia Kurkul to ASMFC

Appendix 17 - Community Profiles

Appendix 18 – Technical Committee Report: *Recruitment Failure in the SNE Lobster Stock*

LIST OF CHARTS

Chart 3.1 - Annual Lobster and Scallop Fishery Revenues (1998-2012) 3-6
Chart 3.2 - Monthly Average Price Per Pound for American Lobster (1998-2009 y.t.d.) 3-8
Chart 3.3 - Estimated Margin by Year for Representative LCMA 3 Lobster Trap Business 3-12
Chart 3.4a - # LCMA 2 Trap Vessels by State – 2000-2012 3-15
Chart 3.4b - # LCMA 3 Trap Vessels by State - 2000-2012 …….....3-16
Chart 3.4c - # OCC LCMA Trap Vessels by State - 2000-2012 ……..3-16
Chart 3.5a - Total # Mass Vessels – 2000-2012 – LCMA 2, 3, OCC 3-18
Chart 3.5b - Total # LCMA 2 Vessels by Mass County – 2000-2012..... 3-19
Chart 3.5c - Total # LCMA 3 Vessels by Mass County– 2000-2012..... 3-20
Chart 3.5d - Total # OCC LCMA Vessels by Mass County – 2000-2012 3-20
Chart 3.6a - Total # RI Vessels – 2000-2012 - LCMA 2, 3, OCC 3-21
Chart 3.6b - Total # LCMA 2 Vessels by RI County – 2000-2012 3-21
Chart 3.6c - Total # LCMA 3 Vessels by RI County – 2000-2012 3-21
Chart 3.6d - Total # OCC LCMA Vessels by RI County– 2000-2012..... 3-21
Chart 3.7a - Total # NY Vessels – 2000-2012 - LCMA 2, 3, OCC..... 3-24
Chart 3.7b - Total # LCMA 2 Vessels by NY County – 2000-2012 3-24
Chart 3.7c - Total # LCMA 3 Vessels by NY County – 2000-2012 3-24
Chart 3.7d - Total # OCC LCMA Vessels by NY County – 2000-2012..... 3-24
Chart 3.8a - Total # NJ Vessels – 2000-2012 - LCMA 2, 3, OCC..... 3-27
Chart 3.8b - Total # LCMA 2 Vessels by NJ County – 2000-2012..... 3-27
Chart 3.8c - Total # LCMA 3 Vessels by NJ County – 2000-2012..... 3-27
Chart 3.8d - Total # OCC LCMA Vessels by NJ County – 2000-2012 3-27
Chart 4.1 - LCMA OCC Comparison of # Elected vs # Qualified by MA County – 2012…...4-85
Chart 4.2 - LCMA 2 Comparison of # Elected vs # Qualified by MA County - 2012..... 4-87
Chart 4.3 - LCMA 2 Comparison of # Elected vs # Qualified by RI County - 2012 4-88
Chart 4.4 - LCMA 2 Comparison of # Elected vs # Qualified by NY County – 2012..... 4-89
Chart 4.5 - LCMA 2 Comparison of # Elected vs # Qualified by NJ County 2012 4-90
Chart 4.6 - Comparison of # Elected vs # Qualified by CT County - 2012..... 4-91

LIST OF FIGURES

Figure ES - 1 - American Lobster Management and Stock Areas ES-1

Figure 1.1 – American Lobster Management and Stock Areas ……..1-2

Figure 5.1 - American Lobster Biological Stock Units and Management Areas 5-2

Figure 5.2 - Locations of state and Federal Ocean Sanctuaries, the Cape Cod Right Whale Critical Habitat Area and the pattern of general ocean circulation of the area 5-6

Figure 5.3 - Principal US Ports - Total Commerce (short tons) 5-9

Figure 5.4 - Cape Wind Energy Project Locus Map 5-11

Figure 5. 5 - The Stellwagen Bank NMS Relative to Adjacent Land and Associated Geographic Places 5-12

LIST OF TABLES

Table ES-1 – OCC LCMA Limited Access Alternatives ES-5
Table ES-2 - LCMA 2 Limited Access Alternatives ES-5
Table ES-3 - Individual Transferable Trap (ITT) Program Alternatives ES-6
Table ES-4 - Trap Vessels by LCMA and State ES-10
Table ES-5 - Most Active Counties by State in the American Lobster Fishery (2000-2012) ES-10
Table ES-6 - Comparison of Impacts by Limited Access Alternatives for LCMA OCC ES-20
Table ES-7 - Comparison of Impacts by Limited Access Alternatives for LCMA 2 ..... ES-21
Table ES-8 - Comparison of Impacts by ITT Alternatives ES-22
Table 1.1 - 2009 Stock Assessment Results for American Lobster by Stock Area…..…..…1-5
Table 2.1 - Limited Entry and Individual TrapTransferability…….....2-2
Table 2.2 - OCC LCMA Alternatives 2-7
Table 2.3 - LCMA 2 Alternatives 2-14
Table 2.4 - Trap Transfer Program Alternatives 2-20
Table 3.1 - State/Federal Territorial Jurisdiction Over Management Areas…..…..……...3-4
Table 3.2 - Landings and Inflation Adjusted Value and Price per Pound - 1998-2012[a] 3-7
Table 3.3 - Quarterly Trap Management for Full-Time and Seasonal LCMA 2 Operators 3-9
Table 3.4 - Estimated Margin by Year for Representative LCMA 2 Lobster Trap Businesses 3-10
Table 3.5 - Quarterly Activity for LCMA 3 Trap Vessels 3-11
Table 3.6 - Trap Vessels in LCMA 2 by State 3-13
Table 3.7 - Trap Vessels in LCMA 3 by State 3-13
Table 3.8 - Trap Vessels in OCC LCMA by State 3-14
Table 3.9 - Most Active Counties by State in the American Lobster Fishery (2000-2012) 3-29
Table 3.10 - State & County Social/Cultural Data - 2005-2007 3-31
Table 3.11 - American Lobster Habitats and Densities 3-41
Table 3.12 - Jonah Crab Landings by Gear Type, FY2008 3-62
Table 3.13 - Red Crab Landings by Gear Type, FY 2002 3-63
Table 4. 1 - Evaluation Criteria…….4-3
Table 4.2 - LCMA OCC - Comparison of # of Permits, Traps and Trap Tags by Alternative . 4-13
Table 4.3 - LCMA 2 - Comparison of # of Permits & Traps by Alternative 4-33
Table 4.4 - Comparison of ITT-No Action in Combination with Different LAP Alternatives . 4-55
Table 4.5 – The Effect of Permit & Trap Allocation Transferability on LCMAs Without History-Based Allocations 4-62
Table 4.6 - LCMA OCC Comparison of # Elected vs # Qualified by MA County - 2012 4-85
Table 4.7 - LCMA 2 Comparison of # Elected vs # Qualified by MA County - 2012 4-86
Table 4.8 - LCMA 2 Comparison of # Elected vs # Qualified by RI County - 2012 4-88
Table 4.9 - LCMA 2 Comparison of # Elected vs # Qualified by NY County - 2012 4-89
Table 4.10 - LCMA 2 Comparison of # Elected vs # Qualified by NJ County - 2012 4-90
Table 4.11 - Comparison of # Elected vs # Qualified by CT County - 2012 4-91
Table 5.1 - Cumulative Impacts on Lobster-Related Resources from LAP Program Alts…....5-15
Table 5.2 - Cumulative Impacts on Lobster-Related Resources from ITT Program Alts 5-18
Table 5.3a - LAP Alternatives - Cumulative Impacts on Regulatory Setting 2121
Table 5.3b - ITT Alternatives - Cumulative Impacts on Regulatory Setting..... 2121
Table 5.4a - LAP Alternatives - Cumulative Impacts of Lobster Resources..... 5-23
Table 5.4b - ITT Alternatives - Cumulative Impacts of Lobster Resources..... 2123

Table 5.5a - LAP Alternatives - Cumulative Impacts on Protective Resources 5-24
Table 5.5b - ITT Alternatives - Cumulative Impacts on Protective Resources 5-24
Table 5.6a - LAP Alternatives - Cumulative Impacts on By-Catch and Bait Fish 5-26
Table 5.6b - ITT Alternatives - Cumulative Impacts on By-Catch and Bait Fish 5-26
Table 5.7a - LAP Alternatives - Cumulative Impacts on Economic Environment 5-26
Table 5.7b - ITT Alternatives - Cumulative Impacts on Economic Environment..... 5-27
Table 5.8a - LAP Alternatives - Cumulative Impacts on Social Environment..... 5-27
Table 5.8b - ITT Alternatives - Cumulative Impacts on Social Environment..... 5-27

LIST OF ACRONYMS

ACRONYM	DEFINITION
ACA	Atlantic Coastal Act (Short for ACFCMA)
ACCSP	Atlantic Coastal Cooperative Statistics Program
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ALWTRP	Atlantic Large Whale Take Reduction Plan
ASMFC	Atlantic States Marine Fisheries Commission
BA	Biological Assessment
BO	Biological Opinion
BRP	Biological reference points
C	Celsius
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CL	Carapace Length
CPH	Confirmation of Permit History
CPUE	Catch Per Unit Effort
CV	Coefficient of Variation
CWA	Clean Water Act
CWA	Cape Wind Associates
CZMA	Coastal Zone Management Act
DAS	Days-at-Sea
DEIS	Draft Environmental Impact Statement
DMF	Division of Marine Fisheries
DOI	Department of Interior
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FMP	Fishery Management Plan
GBK	Georges Bank
GOM	Gulf of Maine
HMS	Highly Migratory Species
ISFMP	Interstate Fishery Management Plan
ITT	Individual Transferable Trap Program
IUCN	International World Conservation Union
IWC	International Whaling Commission
LAP	Limited Access Privilege

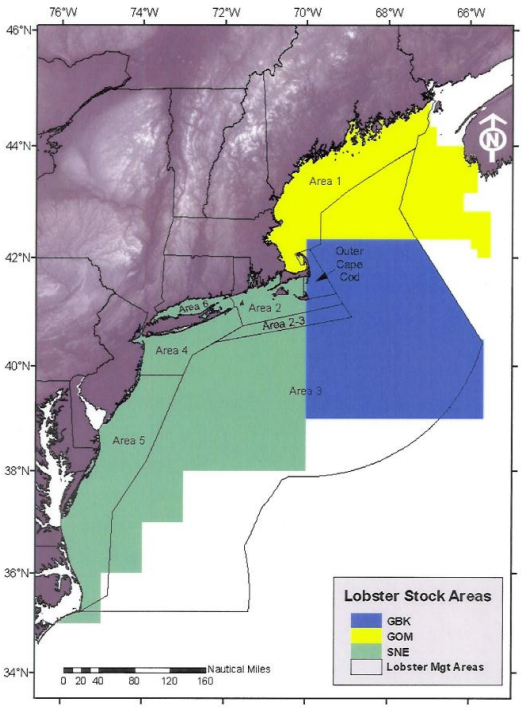
LCMA	Lobster Conservation Management Area
LCMT	Lobster Conservation Management Team
MAFMC	Mid-Atlantic Fishery Management Council
MARAD	Maritime Administration
MMPA	Marine Mammal Protection Act
MMS	Mineral Management Service
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MSA	Magnuson-Stevens Fishery Conservation and Management Act
Mt	Metric Ton
ND	Not determined
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fishery Science Center
NEPA	National Environmental Policy Act
NERO	Northeast Regional Office
NMFS	National Marine Fisheries Service
NMS	National Marine Sanctuaries
NOAA	National Oceanic & Atmospheric Administration
NOI	Notice of Intent
OCC	Outer Cape Cod
OCLMA	Outer Cape Lobster Management Area
OCS	Outer Continental Shelf
OLE-NMFS	Office of Law Enforcement - National Marine Fisheries Service
OSP	Optimum Sustainable Population
PBR	Potential Biological Removal
SBNMS	Stellwagen Bank National Marine Sanctuary
SCUBA	Self-Contained Underwater Breathing Apparatus
SNE	Southern New England
STSSN	Sea Turtle Stranding and Salvage Network
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VTR	Vessel Trip Report
YONAH	Years of the North Atlantic Humpback

Executive Summary

Executive Summary

From Maine through North Carolina, American lobsters are managed under dual state and Federal regulatory authorities, whereby individual states manage the resource within their state waters (0-to-3 nautical miles from the shoreline) and the Federal government has primary jurisdiction over the resource in waters 3-to-200 nautical miles from the shoreline (also known as the Exclusive Economic Zone, or EEZ). Under the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act or Act)[1], the Atlantic States Marine Fisheries Commission[2] (Commission) prepares fishery management actions on an ongoing, as-needed basis, in consultation with the states and the Federal government. Once new measures are approved through the Commission process, states implement and enforce them. In turn, the Federal government is asked to implement management measures for the American lobster fishery that are consistent with and supportive of the actions of the Commission. Federal management of the American lobster fishery thus is largely, though not exclusively, influenced by the management recommendations of the Commission.

Figure ES - 1 - American Lobster Management and Stock Areas[3]



Lobster resources are managed within seven Lobster Conservation Management Areas (LCMAs): LCMA 1 - Inshore Gulf of Maine (GOM); LCMA 2 - Inshore Southern New England (SNE); LCMA 3 - Offshore

[1] 16 U.S.C. 5101-5109; Title VIII of Pub. L. 103-206, as amended, (ACFCMA, 1993).

[2] The Atlantic States Marine Fisheries Commission was formed in 1942 by the 15 coastal states to improve interstate coordination in the protection and management of marine fisheries resources. It is a "deliberative" body, composed of representatives from the states and the Federal government, that serves to facilitate coordination among its members on matters of fishery management. Member states are Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida.

[3] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

waters; LCMA 4 - Inshore Northern Mid-Atlantic; LCMA 5 - Inshore Southern Mid-Atlantic; LCMA 6 - New York and Connecticut State Waters (primarily Long Island Sound); and Outer Cape Cod (OCC).

NMFS has prepared this Final Environmental Impact Statement (FEIS) to address a number of management measures recently approved by the Commission for the American lobster fishery affecting LCMAs 2, 3, and the OCC. The actions to be evaluated with this FEIS thus are fundamentally management in nature and their potential impacts on fishery management will be evaluated herein, along with other impacts (e.g., biological and physical, social and economic - see Chapter 4). The Commission has forwarded these measures to NOAA's National Marine Fisheries Service (NMFS), with a recommendation that Federal regulations to support these measures be promulgated. In general, the recommendations submitted by the Commission focus on two strategies to control fishing effort in the American lobster fishery: 1) limiting the number of lobster permits in a management area, and 2) limiting the number of traps fished by lobster permit holders. More specifically, the Commission's recommendations include the following:

- Measures that would limit the number of **permits**:
  - Cap the number of participants by limiting entry to a Lobster Management Area (proposed for LCMA 2 and OCC).
  - Authorize permits and associated trap allocations only to fishermen and/or vessels with a historic record of fishing in an LCMA.
  - Limit how many permits one entity (individual or corporation) can hold (*i.e.*, excessive share provisions).
- Measures that would limit the number of **traps**:
  - Deduct traps from a permit holder's trap allocation, primarily through the implementation of a "conservation tax," applied when Federal permits are sold or "transferred" within the fishery through an Individual Transferable Trap (ITT) program (discussed below).
  - Cap the number of traps a permit holder with multiple LCMA allocations can fish through the application of the "most-restrictive rule" (also discussed below).
  - Cap the number of traps a "dual permit holder" (someone with both a state and Federal permit) can fish by mandating that a fisher's fishing history, on which trap allocations are based, follow the Federal permit (i.e., prohibit the "stacking" of state and Federal fishing history, which would result in a proliferation of traps).

Individual Transferable Trap (ITT) Program

The *ITT program*, as proposed, is meant to increase the business flexibility of lobster fishers to buy and sell lobster traps, while preserving the conservation benefits found within each LCMA's management program. The ITT program is generally thought to be a popular concept within the lobster industry because it would provide a business alternative for permit holders who for various reasons may wish to gain economic benefit by selling traps and "scaling down" their business operations. Additionally, recent changes to the Commission's Plan include a series of trap reductions to assist in lobster stock rebuilding. The lobster industry has indicated that an ITT Program will facilitate their ability to withstand the negative economic impacts of the trap reductions by allowing the purchase of additional traps. These measures, described briefly below, are more fully discussed in Chapters 2 and 4.

Currently, permit holders in certain LCMAs can transfer their lobster permits and all associated traps with the sale of a vessel, but do not have the option to sell portions of their trap allocation. The Commission's recommended measures would allow permit holders within those LCMAs to transfer blocks of traps

without selling their entire trap allocation and permits. As part of this program, with each transfer, the number of traps allowed in the water associated with a specific permit would be permanently reduced by 10 percent (a *conservation "tax"*).

Status of the American Lobster Fishery

American lobster (*Homarus americanus*) supports one of the most valuable commercial fisheries in the Northeast United States, with an annual estimated revenue in excess of $429 million in 2012 (NMFS, 2013). Total U.S. landings reached 149.5 million lbs. (67.8 mt), exceeding the 2006-2010 average landings of 100.4 million lbs. (42.5 mt) (NMFS, 2012). The U.S. lobster resource occurs in continental shelf waters from Maine to North Carolina[4]. The commercial U.S. lobster fishery is conducted within three biological stock units – Gulf of Maine (GOM), Georges Bank (GBK), and Southern New England (SNE). While each area has an inshore and offshore component to the fishery, GOM and SNE areas are predominantly inshore fisheries and the GBK area is predominantly an offshore fishery. The GOM stock is primarily fished by fishermen from the states of Maine, Massachusetts, and New Hampshire. The GBK stock is primarily fished by fishermen from Massachusetts and Rhode Island. The SNE stock is primarily fished by fishermen from the states of Connecticut, Massachusetts, New York, and Rhode Island, with smaller contributions from the states of New Jersey, Delaware and Maryland.

GOM supports the largest fishery, constituting 76 percent of the U.S. landings from 1981 to 2007, and 87 percent since 2002. Landings in the GOM were stable between 1981 and 1989, averaging 14,600 mt, then increased dramatically from 1990 (19,200 mt) to 2006 (37,300 mt). Landings averaged 33,000 mt from 2000-2007.

GBK constitutes the smallest portion of the U.S. fishery, averaging 5 percent of the landings from 1981 to 2007. From 1981-2002, landings from the GBK fishery remained stable (averaging 1,300 mt). Landings nearly doubled from 2003-2007, reaching a high of 2,400 mt in 2005, and they have remained high since.

SNE has the second largest fishery, accounting for 19 percent of the U.S. landings between 1981 and 2007. Landings increased sharply from the early 1980s to the late 1990s, reaching a time series high of 9,900 mt in 1997. Landings remained near the time series high until 1999, when the fishery experienced dramatic declines in landings. From 2000 to 2007, landings from the SNE accounted for only 9 percent of the U.S. total for American Lobster, reaching a time series low of 6 percent in 2004.

The most recent 2009 Stock Assessment Report concluded that "(t)he American lobster fishery resource presents a mixed picture, with stable abundance for much of the GOM stock, increasing abundance for the GBK stock, and decreased abundance and recruitment yet continued high fishing mortality for the SNE stock."[5]

Relevant Management Actions

Addendum XII

Addendum XII (see Appendix 3) of the Commission's Plan calls for the states and NMFS to adopt a uniform approach when implementing limited access programs and thus is important, among other reasons, for its attempt to address management inconsistencies across LCMA jurisdictions. Nonetheless, while measures under Addendum XII are a necessary step, NMFS recognizes that problems associated with a lack of uniformity will likely remain, even after these measures are implemented, given that the vast majority of involved states qualified permit holders and allocated traps long before the Addendum was approved. Further, NMFS has already noted that states have interpreted aspects of the Commission's

[4] In addition to American lobster, the United States also has a spiny lobster fishery, which makes up a small percentage of the total U.S. landings. For purposes of this EIS, however, it is assumed that total U.S. landings are composed exclusively of American lobster.

[5] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

LCMA 2 and OCC limited entry programs differently (e.g., one state's LCMA 2 appeal criteria is more liberal than that of its LCMA 2 neighbor) and the states have likely applied differing levels of circumspection in their review of involved qualification and allocation data. Many of these complexities are discussed in detail in Chapter 4. After NMFS published the DEIS in 2010, the Commission took further action to modify the ITT Program (see summary of the addenda below in this section). Some of the modifications are within the scope of the DEIS and are evaluated in this Final EIS.

Addendum XVII and XVIII

After a subsequent evaluation in 2010, the Commission's Lobster Technical Committee concluded that the SNE stock is critically depleted and experiencing recruitment failure due to environmental factors and fishing mortality[6]. This declaration prompted the Commission to take action to rebuild the stock using multiple management measures including trap reductions, closed seasons, and more. NMFS is evaluating these new measures in a separate rulemaking action.

Addendum XXI and XXII

In 2013, the Commission adopted Addendum XXI which further modified the ITT Program. The addendum revised the Commission's initial position on acquiring traps with multi-LCMA history by allowing buyers of multi-LCMA history traps to claim fishing rights in all the LCMAs for which the traps have fishing history. Further, the addendum sets limits on the number of traps a permit may possess in excess of its fishable allocation, and sets a cap of no more than two permits for LCMA 2 lobster fishers. In October 2013, the Commission adopted Addendum XXII, which limits the number of LCMA 3 permits an individual or entity may possess to five, and it sets limits on the number of traps an LCMA 3 permit may possess in excess of its fishable allocation. NMFS will evaluate these measures in a separate rulemaking.

Alternatives

The National Environmental Policy Act requires that any Federal agency proposing a major action consider reasonable alternatives to the proposed action. The evaluation of alternatives in an Environmental Impact Statement assists the Secretary in ensuring that any unnecessary impacts are avoided through an assessment of alternative ways to achieve the underlying purpose of the project that may result in less environmental harm.

To warrant detailed evaluation by NMFS, an alternative must be reasonable[7] and meet the Secretary's purpose and need (see Section 1.2). Screening criteria are used to determine whether an alternative is reasonable (see Section 4.0, Table 4.1). After applying the screening criteria to an identified range of alternatives, the following alternatives were brought forward for detailed review in the EIS:

[6] See *"Recruitment Failure in the Southern New England Lobster Stock,"* ASMFC Lobster Technical Committee, April 17, 2010.

[7] "Section 1502.14 (of NEPA) requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are *practical or feasible from the technical and economic standpoint and using common sense*, rather than simply desirable from the standpoint of the applicant." (40 Questions) (emphasis added)

Table ES-1 – Criteria Used For Outer Cape Area Limited Access Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission (Preferred Option)	Alternative 3 – Qualify Only
QUALIFICATION Criteria for Future access into the Area	None - Status Quo: Existing regulations apply – open access to all with a Federal lobster permit	Yes – Qualification Required – Future participation based on 1999-2001 fishing history	Yes – Qualification Required – Future participation based on 1999-2001 fishing history
ALLOCATION Criteria for Future Trap Allocation	None - Status Quo: Up to 800 Traps – subject to more restrictive state trap limits	Yes – Qualification Required – Based on highest effective traps fished during the 2000-2002 fishing history	None - Status Quo: Up to 800 Traps – subject to more restrictive state trap limits

LCMA OCC Limited Access Alternatives: Under the No Action Alternative, no Federal limited access program would be enacted in the OCC LCMA. As such, American lobster in the OCC LCMA would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. The fishery would remain open access to all who hold a Federal lobster permit and individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule)[8].

Under Alternative 2-Commission Alternative and Alternative 3-Qualify Only, permit holders would be qualified to fish under a limited access program based on a demonstration of prior fishing history (1999-2001) within the LCMA. Trap allocations under Alternative 2-Commission Alternative would be based on "effective traps fished" during the 2000-2002 period, while under Alternative 3-Qualify Only, no new trap allocations would be established.

Table ES-2 – Criteria Used for LCMA 2 Limited Access Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission (Preferred Option)	Alternative 3 – Qualify Only
QUALIFICATION Criteria for Future Access into the Area	None – Status Quo: Existing regulations apply – Open access to all with a Federal lobster permit	Yes – Qualification Required – Future participation based on 2001-2003 fishing history	Yes – Qualification Required – Future participation based on 2001-2003 fishing history
ALLOCATION Criteria for Future Trap allocation	Status Quo - Fish up to 800 traps – subject to existing Most Restrictive Rule.	Yes – Qualification Required –Based on 2001-2003 fishing history	None - Status Quo: Up to 800 traps – Subject to more restrictive state trap limits

[8] See Section 4.1 of this FEIS and Addendum XII (see Appendix 3), section 4.2 for a detailed description of the Most Restrictive Rule.

LCMA 2 Limited Access Alternatives: Under Alternative 1-No Action, no Federal limited access program would be enacted in the LCMA 2. American lobster in the LCMA 2 would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. The fishery would remain open access to all who hold a Federal lobster permit and individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule)[9].

Under Alternative 2-Commission Alternative and Alternative 3-Qualify Only, permit holders would be qualified to fish under a limited access program based on a demonstration of prior fishing history (2001-2003) within the LCMA. Trap allocations under Alternative 2-Commission Alternative would be based on "effective traps fished" during the 2001-2003 period, while under Alternative 3-Qualify Only, no new trap allocations would be established.

Table ES-3 – Conditions Applied to Individual Transferable Trap (ITT) Program Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission	Alternative 3 – LCMA 3 Only	Alternative 4 – Optional Trap Transferability (Preferred)
TRANSFER CONDITIONS	None – Status Quo: No transfers allowed – Existing regulations apply	Yes – Transfers allowed – OCC LCMA and LCMA 2, up to a 800 trap cap; LCMA 3 – up to a 2,000 trap cap	Yes – Transfers allowed, but only in LCMA 3 with up to a 2,000 trap cap	Federal permit holders must agree to more restrictive of Federal or state trap allocation
CONSERVATION "TAX"	None – Status Quo: No conservation tax applied to transfers	Yes – OCC LCMA, LCMA 2, and LCMA 3 have a 10% tax on partial transfers	Yes – LCMA 3 has a 10% tax on partial transfers	Yes – OCC LCMA, LCMA 2, and LCMA 3 have a 10% tax on partial transfers

ITT Background

Effort control plans approved or proposed by the Commission and implemented by various states and NMFS to date all have one thing in common: they use documented fishing history and fishing performance to allocate the amount of traps that a permit holder can fish within a given LCMA.[10] As the number of these plans has increased, the need to apply uniform criteria that will allow for the consistent assignment of fishing histories across state and Federal programs has been recognized by both state and Federal regulators.

With Addendum XII, the Commission approved a number of unifying measures that will bring various state practices for assigning fishing history into alignment with existing Federal practice. In so doing, a number of fundamental management principles that are essential to the success of overall lobster fishery have been firmly established. These principles include the following:

- A lobster permit and its history cannot be separated.

[9] See Section 4.1 of this FEIS and Addendum XII (see Appendix 3), section 4.2 for a detailed description of the Most Restrictive Rule.

[10] Through various addenda to the interstate fishery management plan for American lobster, history-based effort control plans based on fishery performance have been enacted by NMFS (LCMAs 3, 4, and 5) and states (MA in Outer Cape Cod; NY and CT for LCMA 6; and MA, RI, CT,& NY for LCMA 2). The only Lobster Management Area currently without a history-based effort control plan is LCMA 1, and Addendum XVI proposed a LAP for all Federal permit holders in LCMA 1.

- Fishing histories accumulated under dual state and Federal permits cannot be treated as separate histories and stacked for the purposes of qualification and allocation. A single fishing entity is considered to have established a single lobster fishing history even if that person is a dual permit holder fishing under a state and federal fishing permit.
- Lobster history accumulated under dual state/Federal permits cannot be divided and apportioned between the permits. Because records are imprecise (and in most cases, do not exist) to determine which part of a dual permit holder's catch was caught in state waters and which part was caught in the EEZ, a dual permit holder's fishing history will be considered indivisible so long as some part of the catch was caught in both state and Federal waters. If a dual permit holder "splits" his/her permits by transferring either the Federal or state permit to another entity, then the entire fishing history is to remain with the Federal permit for the purposes of the initial qualification and allocation decision. [Alternatively, a dual permit holder who permanently relinquishes or surrenders his/her Federal lobster permit can allow his/her fishing history to be transferred to his/her state permit.]

The proposed effort control measures, discussed below, rely on these established principles to meet the conservation goals for the lobster fishery.

Program Overview

As proposed, the Individual Transferable Trap (ITT) program for Federal permit holders in the American lobster fishery establishes fishing privileges for U.S. lobster fishers heretofore unseen in a Federal lobster management program. Under this program, participants are allowed to "transfer" (i.e., sell) blocks of traps to one another after their initial qualification and allocation into the fishery. By allowing fishers to buy and sell lobster traps, the ITT program is meant to provide permit holders with opportunities to enhance efficiency or respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery.

Transferable Trap Programs have the potential to reduce effort (i.e., fishing power, often described in number of traps fished) in the fishery through the use of a conservation "tax" (discussed below). When initially developed the primary purpose of a transferable trap program was to improve the overall economic efficiency of the lobster industry (ASMFC 2002b). Since then, with the advent of the trap cuts to rebuild the ailing SNE lobster stock, the industry is relying on the transferable trap program to help them mitigate the economic impacts of the trap cuts by allowing them to purchase additional traps.

ITT Alternatives: Common to all of the ITT alternatives are provisions that would:

- Reduce the seller's trap allocation in all LCMA's by the amount of the traps transferred;
- Establish a conservation "tax" that would require the permanent removal of a percentage of traps with each transfer for conservation purposes.[11]
- Establish a database to track the transfer of traps. This tracking system would be centrally developed and maintained. All jurisdictions would have access to this data in accommodation with states' confidentiality requirements. This database would allow managers to track transfers across jurisdictions (e.g., state-to-state, or any transfer involving a dual permit holder);
- Prohibit the leasing of traps;
- Prohibit the development of excessive shares by limiting the number of traps that can be transferred to a concentrated group of individuals;

[11] Transferability taxes are proposed in Addendum III (for the OCC LCMA), Addenda IV and V (for LCMA 3), Addendum IX (for LCMA 2), and Addendum XII (Appendix 3).

Under Alternative 1-No Action, no Federal trap transfer program would be implemented. State-level trap transfer programs, currently in LCMAs 2, 3, and OCC, would continue. Under Alternative 2-Commission Alternative, LCMAs 2, 3, and OCC qualifiers would be allowed to buy and sell traps subject to LCMA-specific conservation taxes, trap caps, and "haul-out" provisions. Under Alternative 3-ITT for LCMA 3 Only, trap transfers would be limited to LCMA 3 Federal waters only and would be administered by NMFS. All transfers would be in increments of 10 traps and subject to a 10 percent conservation tax. Under Alternative 4-ITT as an Optional Program, qualifiers would not be obligated to take part in the transferability program, but could choose to do so, subject to a number of additional parameters designed to make the application of an ITT program more uniform across LCMA jurisdictions.

Regulatory Setting for American Lobster

From a Federal perspective, lobster management has an unusual construct in that management actions largely emerge through a state-initiated Commission process in which Federal managers act in coordination with the Commission, rather than through unilateral action such as is seen in many other areas of fishery management. On the one hand, this construct is a practical response to the state/Federal jurisdictional realities behind lobster management, since lobster harvests occur primarily within state waters (see also discussion in Section 1.0); on the other hand, it also serves to spotlight the differences in jurisdictional perspectives: though a broad view of the needs of the overall fishery may suggest one type of action from a Federal perspective, NMFS may reject that option because it is deemed to be inconsistent with the National Standards as articulated under the MSA. Furthermore, as discussed in Chapter 1, when implementing regulations, it is the obligation of Federal lobster managers to ensure that those regulations are compatible with the Commission's ISFMP for lobster. Because management interests can and often do diverge however, not only between the states and the Federal lobster managers but also between the states themselves, finding compatible regulatory approaches to lobster management can be challenging. (These challenges are explained in greater detail in Section 2.0.)

Lobster management has evolved into an increasingly complex regulatory environment. Individual states (through the LCMTs, via the Commission) have advanced numerous management measures, some of which are out-of-sync with each other, while the Federal government has struggled to promote regulatory consistency between state and Federal management efforts through its own rule-making processes in response to Commission actions. In response, NMFS has placed strong emphasis on improving coordination between itself and the states via the Commission. While in many ways there is more coordination than ever as a result, these efforts have so far been unable to keep pace with the myriad of management actions that continue to be advanced. A number of factors contribute to these circumstances.

1) *The Commission's inherent structure*:

- The Commission (and its Lobster Board) is not a singular entity so much as it is an amalgamation of multiple independent and sovereign entities. Specifically, the Lobster Board is composed of 11 sovereign states and the Federal Government, which is itself sovereign. Each sovereign government has its own laws and authorities that govern what it can do and how it can do it.
- Governments have different rulemaking apparatuses – e.g., some states can create regulations quickly by executive action, while others need legislative approval – as a result, regulations are often enacted on different timelines.

2) *State/Federal regulatory disconnects*:

Regulatory consistency across state/Federal jurisdictions is a particular challenge to NMFS due to two unique characteristics of the Federal fishery.

- First, NMFS has territorial jurisdiction -- and thus must be concerned about consistency -- in six of the seven management areas, while the majority of Commission states have territorial jurisdiction over only a single lobster management area (see Table 3.1).[12] As the Commission states have implemented requirements that are increasingly divergent from one another, the ability for NMFS to implement consistent measures across different LCMAs that are also consistent with the Plan approved through the Commission process has become more difficult.
- A second challenge to consistency that is unique to NMFS involves the nature of so-called "dual permit holders." Dual permit holders are individuals that hold two permits: a state permit allowing the person to fish in state waters 0-to-3 nautical miles from shore; and a federal permit allowing the person to fish in federal waters beyond 3 nautical miles from shore.[13] Although fishing under two permits, these dual permit holders operate their fishing businesses as a singular entity and the Commission, under Addendum XII provisions, considers their fishing practices and fishing history to be unified and indivisible. This creates further incentive for the involved state and Federal jurisdictions to make consistent decisions on the dual permit holder and disincentive (and potential for chaos) should the jurisdictions not do so. For the Federal government, however, compatible dual permit holder regulations requires attempted consistency with each of the 11 managing states, which are themselves not always consistent with one another. Furthermore, given the time lag between state and federal rulemaking, NMFS can often be left trying to reconcile eleven sets of independently developed and already enacted regulations before it can issue its own regulations.

It is within this overall regulatory context, where state/Federal regulatory consistency has become increasingly difficult to achieve, that the proposed management measures that are the subject of this EIS analysis are being considered by NMFS.

Economic Environment

American lobster is one of the most valuable commercial fisheries in the United States.[14] Despite this, available data indicate that profit margins for lobster fishers are declining (see discussion below): even while the value of American lobster at times may rise, the costs associated with lobster fishing may rise at a higher rate, thus reducing the income of those who participate in the fishery.

For purposes of this analysis, the economic environment for a lobster fisher can be seen as driven by both macro and micro incentives. At the macro level, a fisher is concerned with whether the regional value of the catch is high enough to want to take on the economic burdens associated with being an active participant in the fishery. At the micro level, a fisher must weigh the potential revenue from the catch against the substantial costs of operating within the fishery (including the risks associated with exposure to volatile regional economies, such as has been seen in recent years). In general, these costs include: the boat, bait, traps, rope, fuel, and overhead. Whether an individual can realize a sufficient profit margin after these costs and revenues have been factored will, for purposes of this analysis, suggest whether those fishers currently participating in the lobster fishery will have incentives to become buyers or sellers under an ITT program (this will be discussed further in Chapter 4).

[12] The exceptions are New York and New Jersey, which have territory in just two management areas, and Massachusetts, which has territorial jurisdiction in three areas--although Massachusetts law mandates that its fishers must choose and thus fish in only one of these "near-shore" management areas. (Lobster Management Areas 1, 2, 4, 5 ,6 and Outer Cape Cod are sometimes referred to as "near-shore" management areas because their western boundaries run to the beach and are thus "near the shoreline." LCMA 3, whose western-most boundary is miles from the coast, is sometimes referred to as the "offshore" management area.)

[13] It may also be possible in certain limited situations to have dual state permits, but such situations are rare and not germane to the present analysis.

[14] (NMFS Office of Science and Technology, 2009).

Social Environment

The social environment discussion in this FEIS (see Sec. 3.3) examines the social and cultural setting of the communities potentially affected by the proposed LAP and ITT programs. Potentially affected communities were identified by first looking at the distribution of lobster fishers (trap vessels) across the relevant states and management areas, then identifying the towns in which those lobster license holders reside and, finally, identifying the counties in which those towns are located. Within each county, social and cultural characteristics of the towns with the strongest participation in the American Lobster fishery were used as a proxy for the county as a whole. Using this approach, the American Lobster fishery breaks down by state and across LCMAs as indicated in Table ES-4.

Table ES-4 - Trap Vessels by LCMA and State (2000-2012)

	A2				A3				OCC			
	2000	2004	2008	2012	2000	2004	2008	2012	2000	2004	2008	2012
CT	12	16	19	15	3	4	2	1	1	3	4	3
MA	253	204	173	132	173	43	36	38	174	155	126	93
ME	71	68	13	15	393	18	5	11	24	17	5	6
NH	10	12	7	6	32	13	10	12	1	2	3	2
NJ	10	24	28	27	67	16	10	8	4	10	8	7
NY	33	43	35	29	23	10	4	4	5	4	3	3
RI	215	201	164	154	93	43	32	35	10	27	20	19
Other	2	7	7	4	22	3	3	3	1	7	4	4
Totals	606	575	446	382	806	150	102	112	220	225	173	137

Based on the relative number of trap vessels across states, the data show in general that Massachusetts and Rhode Island are the major participants (both historically and based on the most recent 2012 data), followed by New York and New Jersey. Further, overall participation has been declining among the major participants across all LCMAs, with participation in LCMA 3 showing the most dramatic decrease over the 8-year period from 2000 to 2007, and remaining constant from 2007 to 2012.

From a county perspective, the analysis shows that, for Massachusetts, Rhode Island, New York and New Jersey, the following counties are the most active in the American Lobster fishery across LCMAs 2, 3 and the OCC from 2000-2012:

Table ES-5 - Most Active Counties by State in the American Lobster Fishery (2000-2012)

State	Counties
Massachusetts	Barnstable, Bristol, Dukes, Essex, Plymouth
Rhode Island	Newport, Washington
New York	Suffolk
New Jersey	Ocean, Cape May

Environmental Impacts

A number of key topics are important to a clear understanding of the impacts analysis within this FEIS, as follows: data used for the analysis; documentation of historical participation in the lobster fishery; the need for a centralized database tracking system; sources of "disconnects" across state and Federal jurisdictions; the Most Restrictive Rule; and latent effort. Background on each of these topics is provided in Section 4.1.

LCMA OCC Limited Access Alternatives

In general, the analysis of limited access alternatives for the LCMA OCC shows the following:[15]

- In shifting from the status quo in the LCMA OCC (where any Federal permit holder can elect to fish the LCMA) to an OCC LCMA-specific limited-access program, "accounting" of what is taking place within the fishery becomes more accurate in two important ways. First, the number of permit holders actually fishing within the LCMA OCC becomes more accurate. Unlike the status quo, where a wide gap exists between those permit holders "electing" to fish and those actually purchasing trap tags, under a limited-access program, the number of "qualified" permit holders and those purchasing trap tags (those who "really" fished) would generally be equal. Second, the number of traps being fished (i.e., effort) also becomes more accurate, as the gap between the number of traps initially allocated to qualified fishers and those actually fished would become far more narrow than the gap between traps allocated to those "electing" to fish and traps actually fished under the No Action Alternative 1.
- The number of traps allocated shrinks significantly when shifting from the status quo to an OCC LCMA-specific limited-access fishery (by 89 percent under Alt 2-Commission Alternative and 79 percent under Alt 3-Qualify Only);
- Massachusetts emerges as the dominant player within the LCMA OCC under an OCC LCMA-specific limited-access program; no permit holders within the other contiguous states would qualify for an initial allocation of traps, based on the qualifying criteria passed by the Commission. This may be due to the geographical characteristics of the LCMA OCC (predominantly a Massachusetts fishery) and the expense and time required for boats to transit long distances if they were located in an adjacent state. Further, the practical reality of changing fishing locations in a highly territorial fishery limits to some unquantifiable degree the extent to which vessels switch from one LCMA to another.

Regulatory Environment: Under No Action, the Federal adoption of Commission-approved regulations would be rejected and moderate-to-major adverse long-term direct regulatory impacts would be expected to occur as a result. Inconsistencies between state and Federal lobster management would remain and likely worsen over time, and management, administrative and enforcement objectives would become more difficult to achieve as a result. The Commission Alternative would implement management measures for the American Lobster fishery that are compatible with Commission-approved measures, significantly addressing the inconsistencies between state and Federal management programs; major, beneficial, long-term regulatory impacts would be expected as a result. The Qualify-Only alternative reflects a compromise between absolute consistency with the Commission-approved limited access program and the realization that consistency on all aspects of the program and between all state/Federal jurisdictions involved may not be possible. Under this alternative, both minor, beneficial, long-term and moderate, adverse long-term regulatory impacts are therefore expected, as some but not all of the significant disconnects between state and Federal lobster management will be addressed.

[15] See full discussion in Section 4.2.

Biological Environment: Under No Action, negligible-to-minor, adverse, long-term indirect impacts to biological resources (lobster, protected resources, by-catch fish and bait fish) are expected as a result of a small (unquantifiable) increase in fishing effort anticipated under this option. Under the Commission alternative, little change in the amount of effort (i.e., traps in the water) is anticipated because participants would be qualified and traps would be allocated based on historical fishing practices. This option would also substantially reduce the amount of potential latent effort within the fishery. Based on this, negligible-to-minor beneficial, long-term, indirect impacts on biological resources are expected under the Commission alternative. Under the Qualify-Only alternative, little change in the amount of fishing effort is anticipated, given that the number of participants will be capped at historical levels and it is assumed that the number of traps fished will be approximately the same as those shown for 2012 (latest year for complete data). As a result, negligible-to-minor beneficial, long-term indirect impacts on biological resources are expected as a result of a small (unquantifiable) decrease in fishing effort under this option relative to the No Action alternative.

Economic Environment: Though only a small (unquantifiable) increase in fishing effort is anticipated under the No Action alternative, the most likely economic impact of any upward shift in effort would be a dilution of profitability for current and future participants. Under both the Commission alternative and, to a lesser extent, the Qualify Only alternative, increased certainty over eligibility to fish and the number of traps that may be fished in the area may increase the effectiveness, timeliness, and transactions costs associated with managing the OCC lobster trap fishery. Based on this, negligible-to-minor beneficial, long-term, indirect economic impacts would be expected, depending on the alternative chosen.

Social Environment: Because all of the alternatives considered for the LCMA OCC limited-access program will have a neutral impact on those historically participating in the fishery, NMFS believes that the impacts on the social environment from these options will be neutral. At the same time, NMFS recognizes the possibility that there may be fishers who want to fish in the area, but have no history, and who will therefore be denied future access under an LCMA-specific Limited Access program (unless they participate through an ITT program, should one be implemented). Nonetheless, for those fishers who have historically fished the LCMA, increased certainty over eligibility to fish and the number of traps that may be fished may increase the effectiveness, timeliness, and transactions costs associated with managing the LCMA OCC lobster trap fishery, resulting in an improved economic environment that will also have social benefits for the affected communities. On balance, therefore, NMFS concludes that the social impacts will be ***neutral***, with the potential for some beneficial impacts as a result of improved economic conditions.

LCMA 2 Limited Access Alternatives

In broad terms, the overall effects of the limited access program alternatives in LCMA 2 are similar to those described for the LCMA OCC above: better accounting of who is actually fishing within the management area and a trap allocation that will cap future fishing effort, both of which will set the stage for an ITT program (evaluated in Section 4.4).

In other ways, however, there are important differences that would occur under a limited access program in LCMA 2 compared with the LCMA OCC. First, among the most significant difference is the geographic representation by the fishers: whereas the LCMA OCC is predominantly (and, under its Alternatives 2 and 3, likely exclusively) a Massachusetts-based fishery (See Table 4.2), LCMA 2 is truly multi-state, with Massachusetts and Rhode Island sharing strong positions in its geographic make-up. The regulatory complications that surround efforts to manage the lobster fishery in this multi-state setting thus become even more pronounced relative to what was seen in LCMA OCC. These complications are discussed more fully in Chapter 4.

Second, in addition to being geographically more diverse, LCMA 2 also has a much larger fishery, both in terms of numbers of participants and the number of traps fished, than the LCMA OCC. Its larger size

means that proportionate changes to characteristics such as number of traps allocated under a limited access program will also be more pronounced than in the LCMA OCC; in other words, a 3 percent difference in traps allocated between the LCMA 2 alternatives (an already large fishery) may have greater impacts on, for example, biological resources, than a 3 percent difference in traps allocated between the LCMA OCC alternatives (already a relatively small fishery to begin with).

Keeping these characteristics in mind, the potential impacts of the limited access alternatives for LCMA 2 are evaluated below.

Based on the findings in Table ES-4, above, the following observations can be made:

- In shifting from the status quo (where any permit holder can elect to fish the LCMA) to an LCMA-specific limited access fishery within Federal waters of LCMA 2, "accounting" of what is taking place within the fishery becomes more accurate in two important ways: *first*, the number of permit holders actually fishing within LCMA 2 becomes more accurate (as evidenced by the smaller gap between "qualified" permit holders and those purchasing trap tags when compared to the gap between those permit holders "electing" to fish (but not necessarily fishing) and those purchasing trap tags under current Federal regulations); *second*, the number of traps actually being fished (i.e., effort) would also become more accurate, as the gap between the number of traps initially allocated to qualified fishers and those actually fished would become far more narrow than the gap between traps allocated to those "electing" to fish and traps actually fished under current regulations and Alternative 1 (Table 4.3).
- The number of traps allocated within Federal waters of the LCMA 2 shrinks significantly when shifting from the status quo to an LCMA-specific limited access program: by 63 percent and 52 percent for Alternatives 2 and 3, respectively.
- In addition to a reduction in allocated traps, the data indicate that the number of Federal vessels that would qualify under a limited access program also shrinks substantially—from 431 under Alternative 1 (status quo) to 192 under Alternatives 2 and 3. Unlike the LCMA OCC, where geographical characteristics and the expense and time required to transit to the area tend to limit participation, LCMA 2 has multiple state jurisdictions involved and eight times the number of estimated qualifiers.
- Under a limited access program, Massachusetts and Rhode Island will more clearly be the dominant players within LCMA 2. Though the data indicate that 28 Federal permit holders from New Jersey currently elect LCMA 2 on their Federal lobster permit (Table 4.3), a preliminary review of the landings history for these permit holders indicate that none of them landed lobster in a state adjacent to LCMA 2 (MA/RI/CT/NY), as specified in the ISFMP (Addendum VII, Section 4.2.1.1). As a result, these vessels do not appear to qualify in LCMA 2 under a limited access program based on the Commission-approved criteria.

Regulatory Environment: Under No Action, the Federal adoption of Commission-approved regulations would be rejected and moderate-to-major adverse long-term direct regulatory impacts would be expected to occur as a result. Inconsistencies between state and Federal lobster management would remain and likely worsen over time, and management, administrative and enforcement objectives would become more difficult to achieve as a result. The Commission Alternative would implement management measures for the American Lobster fishery that are compatible with Commission-approved measures, significantly addressing the inconsistencies between state and Federal management programs; major, beneficial, long-term regulatory impacts would be expected as a result. The Qualify-Only alternative reflects a compromise between absolute consistency with the Commission-approved limited access program and the realization that consistency on all aspects of the program and between all state/Federal jurisdictions involved may not be possible. Under this alternative, both minor, beneficial, long-term and

moderate, adverse long-term regulatory impacts are therefore expected, as some but not all of the significant disconnects between state and Federal lobster management will be addressed.

Biological Environment: Under No Action, negligible-to-minor, adverse, long-term indirect impacts to biological resources (lobster, protected resources, by-catch fish and bait fish) are expected as a result of a small (unquantifiable) increase in fishing effort anticipated under this option. Under the Commission alternative, little change in the amount of effort (i.e., traps in the water) is anticipated because participants would be qualified and traps would be allocated based on historical fishing practices. This option would also substantially reduce the amount of potential latent effort within the fishery. Based on this, negligible-to-minor beneficial, long-term, indirect impacts on biological resources are expected under the Commission alternative. Under the Qualify-Only alternative, little change in the amount of fishing effort is anticipated, given that the number of participants will be capped at historical levels and it is assumed that the number of traps fished will be approximately the same as those shown for 2012 (latest year for complete data). As a result, negligible-to-minor beneficial, long-term indirect impacts on biological resources are expected as a result of a small (unquantifiable) decrease in fishing effort under this option relative to the No Action alternative.

Economic Environment: Though only a small (unquantifiable) increase in fishing effort is anticipated under the No Action alternative, the most likely economic impact of any upward shift in effort would be a dilution of profitability for current and future participants. As with the LCMA OCC Limited Access options (discussed above), under both the Commission alternative and, to a lesser extent, the Qualify Only alternative, increased certainty over eligibility to fish and the number of traps that may be fished in the LCMA may increase the effectiveness, timeliness, and transactions costs associated with managing the OCC lobster trap fishery. Based on this, negligible-to-minor beneficial, long-term, indirect economic impacts would be expected, depending on the alternative chosen.

Social Environment: As with the LCMA OCC, NMFS believes that all of the alternatives considered for the LCMA 2 limited-access program will have a neutral impact on those historically participating in the fishery; at the same time, it acknowledges that those without history in the management area will not be able to qualify under the program options. Nonetheless, for those fishers who have historically fished the area, increased certainty over eligibility to fish and the number of traps that may be fished may increase the effectiveness, timeliness, and transactions costs associated with managing the LCMA 2 lobster trap fishery, resulting in an improved economic environment that will also have social benefits for the affected communities. On balance, therefore, NMFS concludes that the social impacts will be ***neutral***, with the potential for some beneficial impacts as a result of improved economic conditions.

Inter-Transferable Trap Alternatives

The establishment of an Individual Transferable Trap (ITT) program is the last step in a three-step process that necessarily begins with qualifying permit holders into an LCMA (step 1), followed by allocating the number of traps that a qualified permit holder can fish within that LCMA (step 2). Once these two steps have been completed, an ITT program would allow lobster fishers to sell, or "transfer," partial trap allocations to one another. Under the current Federal program, lobster fishers who want to sell trap fishing rights assigned to a lobster permit must sell their entire trap allocation (and thus get out of the fishery completely). By allowing participants to buy and sell partial trap allocations separate from the Federal lobster permit, an ITT program would establish fishing privileges for U.S. lobster fishers heretofore unseen in Federal lobster management.

To date, a number of ITT programs have been approved through the Commission process within certain LCMAs, beginning with the OCC LCMA in 2002, followed with the LCMA 3 in 2003 and, finally, with the LCMA 2 in 2005 (see also Section 2.0). For any ITT program, a central objective is to provide permit holders with opportunities to enhance their own business efficiency or respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own

business or leave the fishery altogether. Because the total number of traps that can be fished within an LCMA will have already been determined (through steps 1 and 2, above), ITT programs are not about effort control or about affecting the number of lobsters in the water (although measures to reduce effort are incorporated into the ITT program to a limited degree, discussed below). Rather, ITT programs are about affecting the behavior of the people who fish for lobster; in particular, they are about giving the people who fish for lobster economic options (through opportunities to buy and sell partial trap allocations) that are not available to them under existing Federal lobster management. Ultimately, therefore, the primary purpose of an ITT program is to improve the overall economic efficiency of the lobster industry.[16] (ASMFC 2002)

Except for *Alternative 3-LCMA 3 Only*, each of the ITT program alternatives discussed below would apply to LCMAs 2, 3 and the OCC for the American Lobster fishery. Further, common to each of the alternatives (except No Action) are management provisions that would: 1) mitigate the potential activation of "latent effort" and 2) require a database tracking system to manage the inter-jurisdictional complexities of trap transfers. These two issues—latent effort under ITT and the need for a database tracking system—are discussed in turn, below.

Latent effort under ITT

Latent effort is potential effort. In the lobster fishery, it would represent the number of traps that could be fished, but that are not actually being fished. Concern about the potential activation of latent effort increases under an ITT program because the more latent effort that exists, the more potential that a spike in fishing effort will occur when those traps not being fished can be transferred (i.e., sold) once ITT is "turned on." Unfettered trap transferability has the theoretical potential to slightly increase actual effort as unused, latent traps in one business are sold to a different lobster business which could fish them more actively. But, that increase would only be relative to the administratively-created fishery occurring immediately after permit holders are qualified and allocated, not as compared to effort as it exists on the water today. Notably, the rule's post-qualification/allocation characterization does not represent today's actual effort either: It represents actual effort as it existed in the early 2000's. Some of the qualifiers would receive an allocation greater than they now fish, others smaller than they now fish. When the parties transfer traps back and forth to get to their current-day business models, some presently latent traps might become active. But, many of these activated latent traps would be doing nothing more than replacing currently active traps that were not allocated during the allocation process—at most, a zero-sum gain. Recognizing this potential, the Commission added a number of measures to its ITT program to balance against the activation of latent effort, as follows: a "conservation tax," (whereby 10 percent of traps are permanently debited from each trap transfer); trap caps (establishes a maximum trap number above which no vessel may fish); debiting of a seller's trap allocation following a sale; prohibition against excessive shares; prohibition against leasing. These measures are discussed in greater detail in Section 4.4.

Database Tracking System

NMFS believes that the establishment of a Commission managed database system is a pre-requisite to the approval of any Federal ITT program for the American Lobster fishery. This database would be necessary to allow resource managers to track trap transfers across jurisdictions (e.g., state-to-state, or any transfer involving a dual permit holder); without it, the management of LCMA-wide ITT programs would become overly burdensome and potentially chaotic.

[16] To date, a number of state-level trap transfer programs have been implemented within certain LCMAs, beginning with the OCC LCMA in 2002, and LCMA 2 in 2005.The OCC LCMA program was proposed in Addendum III in February 2002, followed by LCMA 3 program in Addendum IV in December 2003 and finally the LCMA 2 in Addendum VII in November 2005. Transferability taxes are proposed in Addendum III (for the OCC LCMA), Addenda IV and V (for LCMA 3), Addendum IX (for LCMA 2), and Addendum XII. Addendum VII does not establish a transferability program so much as it suggests that the states establish such a program at some point in the future (see Addendum VII, Section 4.2.1.3, November 2005).

The following conditions would apply as a pre-requisite to any Federal approval of an ITT program for the American Lobster fishery:

- All jurisdictions would have access to this database, in accommodation with state confidentiality requirements;
- Continual funding must be guaranteed (i.e., long-term funding must be allocated to ensure ongoing operational support);
- Dedicated staff is on call to answer questions regarding the database.

Regulatory Environment: Under the No Action ITT alternative, Alternative 1, ITT programs could or would occur at the state level, regardless of their absence at the Federal level. Various states thus would manage their lobster fishery subject to their own history-based determinations as to who qualifies for how many traps (in accordance with Commission-approved measures), while at the Federal level, up to 3,000+ Federal permit holders could "transfer" a fishing vessel with a Federal lobster permit (or a valid Federal lobster that is currently in CPH[17]), its associated fishing history and all traps associated with the Federal lobster permit. As a result, under No Action, significant differences, or "disconnects," between the administering of state and Federal lobster industry management programs are expected. Management, administrative and enforcement objectives would become very difficult to achieve as a result. Moderate-to-major, adverse, long-term, direct regulatory impacts are anticipated under this option.

Under the Commission Alternative, Alternative 2, an ITT program for the American Lobster fishery would be administered in Federal waters in accordance with Commission-approved measures and as such, Federal permit holders would be allowed to transact both whole and partial trap transfers within the Federal fishery. Because this alternative would result in coordinated state and Federal ITT programs, the divergence in lobster management programs across jurisdictions (such as described under No Action) would be largely diminished (though not entirely eliminated). Fishers would be qualified and traps would be allocated based on historic fishing practices, greatly narrowing the gap between state and Federal numbers of participants within the fishery. As a result, the potential for latent effort to be activated under an ITT program shrinks significantly under this option. Moderate-to-major, beneficial, long-term, direct regulatory impacts are anticipated under this option.

Under the ITT in LCMA 3-Only option, Alternative 3, a Federal ITT program would be implemented in LCMA 3 only (administered by NMFS), while state-level ITT programs (currently in LCMAs 2 and OCC) would continue. This alternative attempts to respond to a potential finding that the inability to entirely eliminate the "disconnects" between state and Federal LAP and ITT programs under any of the other alternatives would result in unacceptable impacts, either on the regulatory setting or on resources for American Lobster. This alternative thus is meant to reflect a compromise between absolute consistency with the Commission's ISFMP and the complete absence of any Federal ITT program. Though this alternative would allow for a limited Federal ITT program, the lack of a unified program across all affected LCMAs would likely result in administrative confusion across jurisdictions and, along with this, management and enforcement burdens would likely increase. As a result, moderate adverse, long-term, direct regulatory impacts are expected under this option.

Under the Optional ITT Program alternative, Alternative 4, all qualified permit holders would have the "option" of participating in a Federal ITT program - participation in the ITT program as specified in the ISFMP would not be mandatory. Those permit holders who "opt in" to the ITT program would be subject to a number of management requirements designed to address the potential "disconnects" that would remain under the Commission-approved program. These additional requirements are described in detail in Section 4.4.4. This alternative attempts to balance the industry's need for flexibility with the manager's

[17] Confirmation of Permit History: A confirmation of permit history is required when a vessel that has been issued a limited access permit has sunk, been destroyed, or been sold to another person without its permit history and a new vessel has not been purchased. Possession of a confirmation of permit history will allow the applicant to maintain permit eligibility without owning a vessel.

need to ensure that joint state-Federal management of the lobster resource is consistent across jurisdictions and the program can be effectively tracked and managed. In particular, this alternative is designed to mitigate the problem of compounding allocation disconnects across state/Federal jurisdictions once a trap transfer program is implemented. Moderate-to-major beneficial, long-term, direct regulatory impacts are expected under this alternative.

Depending on the LAP alternatives used (Section 4.1 and 4.2), under an Optional ITT Program, Alternative 4, it is likely that a number of Federal permit holders (ranging from a limited number of "qualified" participants under LAP Alternative 3-Qualify Only to potential involvement of all 3,000+ Federal permit holders under LAP Alternative 1-No Action) would choose not to participate. How many permit holders choose to participate is impossible to predict with any degree of precision and might ultimately depend on the alternatives chosen in Sections 4.1 and 4.2 of this document. Potential management, administrative, and enforcement impacts under the Optional ITT alternative depend on the number of permit holders participating in the program. It is anticipated, however, that many of the management, administrative, and enforcement impacts under this option will be minimized relative to the No Action alternative because this option mitigates the problems that would compound if differential trap allocations were transferred. If a majority of those eligible chose not to participate in the optional ITT program, potential management, administrative, and enforcement impacts would be similar to those described in Section 4.4.1-ITT-No Action Alternative 1, combined with LAP Alternative 2.

Biological Environment: Under ITT No Action, Alternative 1, minor adverse, long-term indirect impacts to biological resources (lobster, protected species, bait fish and by-catch) are anticipated. The potential for increased fishing effort in terms of number of traps fished varies depending on which Federal limited access program is chosen in partnership with an ITT program. An ITT No Action alternative combined with LAP No Action would present the greatest potential for increased effort. When combined with any of the other LAP alternatives considered, however, the potential for additional effort under ITT No Action, Alternative 1, is substantially reduced.

Under the Commission's ITT alternative, Alternative 2, there will be a benefit to biological resources as a result of 1) the more effective coordination and synchronization of management and enforcement programs across state/Federal jurisdictions and 2) the proposed conservation "tax" feature that is common to all of the ITT options, which over time will reduce the number of traps in the water. While some latent effort remains under this option, NMFS believes that the potential short-term increase in the number of traps actually fished will be off-set over time by the implementation of a conservation "tax," which under the Commission alternative is 10 percent of the number of traps sold with each transfer. Both moderate beneficial, long-term, direct impacts and minor adverse, short-term indirect biological impacts are thus anticipated under this alternative.

Under the ITT in LCMA 3-Only alternative, Alternative 3, potential biological impacts on lobster resources and protected species are expected to fall in between those projected for ITT No Action and the Commission Alternative. Minor adverse, long-term, indirect biological impacts could occur as a result of a possible small (unquantifiable) increase in fishing effort under this option, most likely from the activation of any latent effort within LCMA 3.

The potential biological impacts on lobster resources and protected resources from the Optional ITT alternative, Alternative 4, would also fall in between those described under No Action and the Commission alternatives. While there would be some number of Federal permit holders who would choose to participate in an ISFMP-compatible ITT program, there would be some who may choose not to participate. Though there is the potential for an increase in fishing effort, as described in ITT No Action Alternative 1, NMFS believes that the short-term adverse impacts on biological and physical American Lobster resources and on protected species would be minor and longer term impacts would be negligible. Because the amount of latent effort that would exist under this option is anticipated to be significantly less than what would be possible under the ITT No Action alternative, minor-to-moderate beneficial, long-

term indirect biological impacts to American Lobster resources and protected species are also expected to occur, off-setting the short-term adverse impacts identified above.

Economic Environment: In general an ITT program is expected to provide individual lobster businesses the flexibility to scale their business up or down according to individual business plans. Since trap allocations will be based in part on historic participation within the fishery, many permit holders may find that their vessels have allocations that do not reflect their desired business plan -- some vessels will have more allocation than they want or need, while others will have less. An ITT program makes it possible for trades to take place under these conditions, thereby increasing economic efficiency on the use of traps within the lobster fishery as a whole. Traps may be expected to be traded from less economically efficient vessels to more efficient ones. That is, the buyer may be expected to be more profitable either because it has a lower cost structure than the seller or is more technically efficient, or both. The conservation tax provides a mechanism to offset the potential transfer of either latent or less efficient traps from one entity to another, more technically efficient one.

Under ITT No Action, Alternative 1, the ITT program already being administered by the Commonwealth of Massachusetts for the LCMA OCC would continue. Massachusetts' program would be unaffected but would only apply to individuals that qualified and were issued trap tags by the Commonwealth. Assuming the Commission alternative for qualification and trap allocation were selected, any qualifying vessel from a state other than Massachusetts would be unable to take advantage of the economic flexibility that an ITT would offer. Similarly, since ITT programs have yet to be implemented for either LCMA 2 or 3 by the states, any qualifying vessel would be constrained by its initial allocation of traps and would be unable to take advantage of the economic opportunities that an ITT would provide. Lobster fishermen would also lose the opportunity to use the ITT program to offset trap losses due to pending trap reductions intended to improve poor stock conditions.

Under the Commission Alternative 2, the particular ITT design elements for each LCMA are tailored to the economic objectives among LCMA participants. As such they may be expected to have higher positive economic benefit for fishery participants compared to No Action. However, administering and monitoring three different ITT programs for EEZ permit holders would be the most costly among all considered ITT alternatives. Further complicating administration of an ITT program under the Commission alternative is the fact that creation of an ITT within an LCMA is left up to each state to develop. This creates considerable uncertainty over the timing of implementation and the manner in which provisions of an ITT program across states may differ. Disparate state and Federal qualification and allocation decisions may compromise the utility of the ITT program to offset the economic impacts of future trap cuts.

The ITT LCMA 3-Only Alternative 3 preserves the essential economic benefits that come with an ITT program at a lower administrative cost, but those benefits are realized for a very limited portion of the lobster industry overall. This alternative would not affect dual permit holders from Massachusetts fishing in the OCC LCMA since the state has already implemented an ITT. However, permit holders from any other state who qualify for the OCC LCMA as a result of this proposed action would not be able to participate. The same may also be true for vessels in LCMA 2 depending on when different states implement ITT programs for their dual permit holders. As with Alternative 2, the uncertainty of the timing or availability of trap transferability to lobster fishers may frustrate the effectiveness in the ITT Program as a means of mitigating the trap reductions scheduled for implementation in the coming years.

Under the Optional ITT Alternative 4, many of the features that would generate positive economic benefits under the Commission's ITT Alternative 2 are preserved. Some reduction in realized economic benefits may result under this alternative since trades would not be immediately effective. However, this provision is likely to result in some programmatic cost savings since it would facilitate a full accounting of trap allocations at only one time each year. Any potential loss in economic flexibility may be more than offset by the potential to expand the opportunity to have an ITT program to a larger number of

lobster trap fishing businesses. Further, participants will gain the maximum benefit of the ITT Program as a defense against the potential losses in revenue due to the trap reduction schedule.

This action would differ from what has already been implemented by Massachusetts in the OCC LCMA only in the respect that trades would become effective only at the start of the fishing year. This would also be the case for the Commission's recommended LCMA 3 ITT program. Also this alternative would not implement any share accumulation cap either in terms of allocated traps or number of permitted vessels. It is unlikely that these caps are necessary to avoid market power as suggested by the Commission recommendations for each LCMA and are more likely to have been selected to accomplish some social objectives. Nevertheless, states may implement a cap-on-trap accumulation on their own, which any dual permitted vessel would be required to abide by. In fact, this alternative may be likely to allow for greater levels of economic efficiency gains to be realized without a trap cap than the Commission's recommended ITT that does contain ownership caps.

Social Environment: Those American Lobster permit holders who qualify under the proposed limited-access alternatives identified above represent the universe of "sellers" under an ITT program. Because "selling" or "buying" trap allocations is a discretionary action, it is unknown how many individuals would choose to participate in an ITT program and what that would mean in terms of altering the geographic representation for the fishery, as detailed above and in Chapter 3. Without knowing this, it is not possible to even speculate on what the impacts of an ITT program ultimately would be to the affected communities as measured by the demographic parameters outlined in Table 3.10.

What can be said, qualitatively, is that with an ITT program, economic flexibility for permit holders is greatly increased because it creates the opportunity for fishers to respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery. In general, this added flexibility will have a positive impact on social "well-being," since, for example, those permit holders who want to retire or otherwise leave the fishery will have more opportunity (and fewer economic disincentives) to do so, while others who want to increase their participation in the fishery will also have more opportunities to do so. More urgently, it will allow those who plan to remain in the fishery to plan ahead and compensate for the pending trap reductions through trap transfers, which are scheduled to begin the first year that transferability takes effect. Without an ITT program, these options will not exist for permit holders and those individuals will be locked in to their permit allocations.

Based on this, NMFS believes that the direct social impacts from ITT Alternative 1, No Action, will be *major, long-term, and adverse,* while those associated with the proposed ITT alternatives would be *major, long-term, and beneficial.*

Table ES-6 - Comparison of Impacts by Limited Access Alternatives for LCMA OCC

	Alt. 1 No-Action	**Alt. 2 Commission Alt.**	**Alt. 3 Qualify Only Alt.**
Regulatory Setting	Moderate-to-major, adverse, long-term, direct	Major, beneficial, long-term, direct	Minor, beneficial, long-term, direct *AND* moderate, adverse, long-term direct
Biological/Physical Resources			
Lobster	Negligible-to-minor, adverse, long-term, indirect to biological and physical resources	Minor, beneficial, long-term, indirect to biological and physical resources	Minor, beneficial, long-term, indirect to biological and physical resources
Protected Species	Minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
By-Catch	Negligible-to-minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Bait Fish	Negligible-to-minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Economic Environment	Negligible-to-minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Social Environment	Neutral, with potential for adverse, indirect impact	Neutral, with potential for beneficial, indirect impact	Neutral, with potential for beneficial, indirect impact

Table ES-7 - Comparison of Impacts by Limited Access Alternatives for LCMA 2

	Alt. 1 No-Action	**Alt. 2 Commission Alt.**	**Alt. 3 Qualify Only Alt.**
Regulatory Setting	Moderate-to-Major, adverse, long-term, direct	Major, beneficial, long-term, direct	Minor, beneficial, long-term, direct *AND* moderate, adverse, long-term, direct
Biological/Physical Resources			
Lobster	Minor, adverse, long-term, indirect to biological and physical resources	Minor, beneficial, long-term, indirect to biological and physical resources	Negligible-to-minor, beneficial, long-term, indirect *AND* minor, adverse, long-term, indirect to biological and physical resources
Protected Species	Minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
By-Catch	Minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Bait Fish	Minor, adverse, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Economic Environment	Minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect	Negligible-to-minor, beneficial, long-term, indirect
Social Environment	Neutral, with potential for adverse, indirect impact	Neutral, with potential for beneficial, indirect impact	Neutral, with potential for beneficial, indirect impact

Table ES-8 - Comparison of Impacts by ITT Alternatives

	Alt. 1 No-Action	**Alt. 2 Commission Alt.**	**Alt. 3 ITT for LCMA3 Alt.**	**Alt. 4 Optional ITT**
Regulatory Setting	Moderate-to-major, adverse, long-term, direct	Moderate, beneficial, long-term, direct	Moderate, adverse, long-term, direct	Moderate-to major, beneficial, long-term, direct
Biological/Physical Resources				
Lobster	Minor, adverse, long-term, indirect	Moderate, beneficial, long-term, indirect *AND* minor, adverse, short-term, indirect	Minor, adverse, short-term, indirect	Moderate, beneficial, long-term, indirect *AND* minor, adverse, short-term, indirect
Protected Species	Minor, adverse, long-term, indirect	Moderate, beneficial, long-term, indirect *AND* minor, adverse, short-term, indirect	Minor, adverse, short-term, indirect	Moderate, beneficial, long-term, indirect *AND* minor, adverse, short-term, indirect
By-Catch	Minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect *AND* negligible, adverse, short-term, indirect	Minor, adverse, short-term, indirect	Moderate, beneficial, long-term, indirect *AND* negligible, adverse, short-term, indirect
Bait Fish	Minor, adverse, long-term, indirect	Minor, beneficial, long-term, indirect *AND* negligible, adverse, short-term, indirect	Minor, adverse, short-term, indirect	Moderate, beneficial, long-term, indirect *AND* negligible, adverse, short-term, indirect
Economic Environment	Moderate, adverse, long-term, indirect	Moderate, beneficial, long-term, indirect	Minor, adverse, long-term, indirect	Moderate-to-major, beneficial, long-term, indirect
Social Environment	Major, adverse, long-term, direct	Moderate, beneficial, long-term, direct	Minor, beneficial, long-term, direct	Moderate-to-major, beneficial, long-term, direct

Chapter 1 – Introduction and Purpose and Need

INTRODUCTION AND PURPOSE AND NEED CHAPTER 1

1.0 ATLANTIC COASTAL ACT AND ATLANTIC STATES MARINE FISHERIES COMMISSION MANAGEMENT MEASURES

From Maine through North Carolina, American lobsters are managed under dual state and Federal regulatory authorities, whereby individual states manage the resource within their state waters (0-to-3 nautical miles from the shoreline) and the Federal government has primary jurisdiction over the resource in waters 3-to-200 nautical miles from the shoreline (also known as the Exclusive Economic Zone, or EEZ). Until the late 1990s, Federal authority to regulate the lobster fishery was controlled by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act)[18] and Federal management measures were implemented by the National Marine Fisheries Service (NMFS) through a Fishery Management Plan (FMP) developed by the New England Fishery Management Council[19] and approved by the Federal government.

This began to change in 1993, when Congress passed the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act or Act)[20] facilitating a state-oriented fishery management structure for American lobster and, in practical terms, strengthening the role of an organization known as the Atlantic States Marine Fisheries Commission[21] (Commission) in the development of management measures for the resource. Since passage of the first Atlantic Coastal Act American lobster regulations in 1999, management measures deemed necessary for the protection of the resource are advanced by the Commission through the use of amendments and addenda to the existing Interstate Fishery Management Plan (ISFMP) for American lobster. The Commission prepares these actions on an ongoing, as-needed basis, in consultation with the states and the Federal government. Once new measures are approved through the Commission process, states implement and enforce them. In turn, under the Act, the Federal government is asked to implement management measures for the American lobster fishery that are consistent with and supportive of the actions of the Commission.

Congress's reasons for changing Federal lobster management were straightforward: since approximately 80 percent of the fishery occurs in state waters, NMFS could not ensure that the Federal FMP, which covered only Federal waters, could accomplish the requisite management objectives under the Magnuson-Stevens Act to prevent overfishing. What was needed, and what the Atlantic Coastal Act provided, was a regulatory structure that more realistically reflected the joint state-Federal nature of the resource and the need for cooperative and coordinated management. Under this regime, Federal management of the American lobster fishery thus is largely, though not exclusively, influenced by the management recommendations of the Commission.

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[18] 16 U.S.C. §§ 1801-1884, (MSA 2007).

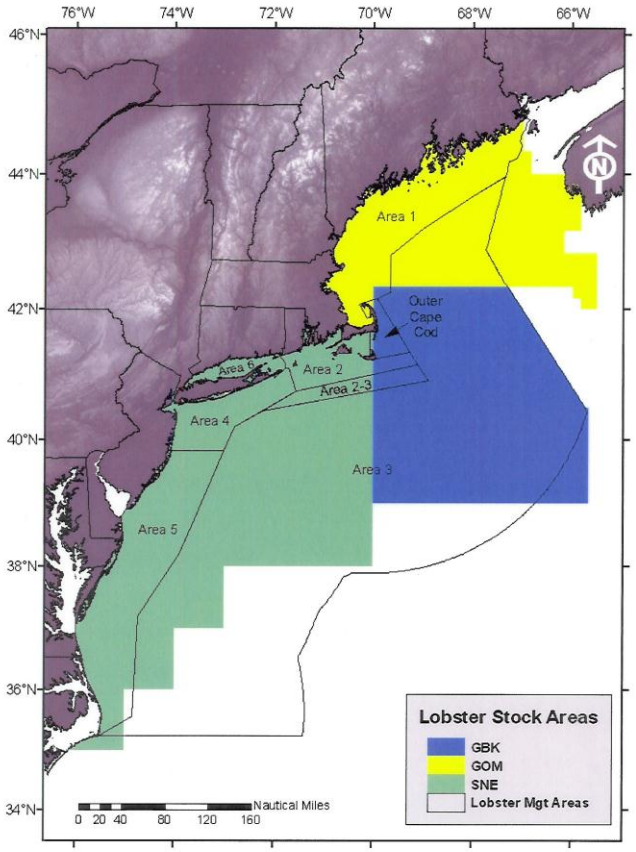
[19] The fishery management council system was established by Congress under the Magnuson-Stevens Fishery Conservation and Management Act by Congress in 1976 (originally called the Fishery Conservation and Management Act) for the purpose of managing fisheries in a newly recognized exclusive economic zone (EEZ) between 3 and 200 miles offshore of the US coastline. Under the Act, eight regional fishery management councils serve as decision-making bodies that develop and recommend specific management measures in the form of fishery management plans, subject to approval and implementation by NMFS.

[20] 16 U.S.C. 5101-5109; Title VIII of Pub. L. 103-206, as amended, (ACFCMA 1993).

[21] The Atlantic States Marine Fisheries Commission was formed in 1942 by the 15 coastal states to improve interstate coordination in the protection and management of marine fisheries resources. It is a "deliberative" body, composed of representatives from the states and the Federal government, that serves to facilitate coordination among its members on matters of fishery management. Member states are Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida. In a legal sense, the Atlantic Coastal Act did not confer upon the Commission any new authority over state and Federal lobster fishery management. In practical terms, however, that Act provides a means by which recalcitrant states that do not implement necessary management measures approved by the Commission may be, through a deliberative process, subject to a Federal moratorium on fishing activities until such time that the management measures are put in place.

One of the most important changes implemented under this new regime was the establishment of seven Lobster Conservation Management Areas (LCMAs): LCMA 1 - Inshore Gulf of Maine (GOM); LCMA 2 - Inshore Southern New England (SNE); LCMA 3 - Offshore waters; LCMA 4 - Inshore Northern Mid-Atlantic; LCMA 5 - Inshore Southern Mid-Atlantic; LCMA 6 - New York and Connecticut State Waters (primarily Long Island Sound); and Outer Cape Cod (OCC). All state and Federal management efforts since 1997 have been based on this LCMA-focused management structure.

Figure 1.1 - American Lobster Management and Stock Areas[22]



NMFS has prepared this Environmental Impact Statement (EIS) to address a number of management measures recently approved by the Commission for the American lobster fishery. Consistent with the Atlantic Coastal Act, the Commission has forwarded these measures to NMFS, with a recommendation that Federal regulations to support these measures be promulgated. Generally speaking, most of the recommendations submitted by the Commission focus on two strategies to control fishing effort in the American lobster fishery: 1) limiting the number of lobster permits in a management area, and 2) limiting the number of traps fished by lobster permit holders. More specifically, the Commission's recommendations include the following:

- Measures that would limit the number of **permits**:

[22] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

- Cap the number of participants by limiting entry to a Lobster Management Area (proposed for LCMA 2 and OCC).
- Authorize permits and associated trap allocations only to fishermen and/or vessels with a current or historic record of fishing in an LCMA.
- Limit how many permits one entity (individual or corporation) can hold (*i.e.*, excessive share provisions).

- Measures that would limit the number of **traps**:
  - Deduct traps from a permit holder's trap allocation, primarily through the implementation of a "conservation tax," applied when Federal permits are sold or "transferred" within the fishery through an Individual Transferable Trap (ITT) program (discussed below).
  - Cap the number of traps a permit holder with multiple LCMA allocations can fish through the application of the "most-restrictive rule" (also discussed below).
  - Cap the number of traps a "dual permit holder" (someone with both a state and Federal permit) can fish by mandating that a fisher's fishing history, on which trap allocations are based, follow the Federal permit (i.e., prohibit the "splitting" of state and Federal fishing history, which would result in a proliferation of traps).

Individual Transferable Trap (ITT) program

The *ITT program*, as proposed, is meant to increase the business flexibility of lobster fishers to buy and sell lobster traps, while preserving the conservation benefits found within each LCMA's management program. The ITT program is generally a popular concept within the lobster industry because it would provide a business alternative for permit holders who for various reasons may wish to gain economic benefit by selling traps and "scaling down" their business operations. These measures, described briefly below, are more fully discussed in Chapters 2 and 4.

Currently, permit holders in certain LCMAs can transfer their lobster permits and all associated traps with the sale of a vessel, but do not have the option to sell portions of their trap allocation. The Commission's recommended measures would allow permit holders within those LCMAs to transfer blocks of traps without selling their permits. As part of this program, with each transfer, the number of traps allowed in the water would be reduced by 10 percent of the number of traps sold (a *conservation "tax"*).

1.1 PURPOSE AND NEED

The purpose of the proposed measures is to manage the American lobster fishery in a manner that maximizes resource sustainability[23], recognizing that Federal management occurs in consort with state management.

[23] This is consistent with the concept of "sustainability" as set forth in National Standard #1of the Magnusun-Stevens Fishery Conservation Management Act and is incorporated in the Atlantic Coastal Fisheries Cooperative Management Act, under which lies the Federal authority to manage lobster. The Magnusun-Stevens National Standards are set forth in greater detail under Section 2.1.

In order to achieve this purpose, NMFS needs to take action in response to recently approved state management measures that control effort within the fishery. These management measures seek to 1) promote economic efficiency[24] within the fishery while maintaining existing social and cultural features of the industry where possible and, 2) realize conservation benefits that will contribute to the prevention of overfishing of the American lobster.

1.1.1 Status of the American Lobster Fishery

American lobster (*Homarus americanus*) supports one of the most valuable commercial fisheries in the Northeast United States, with an annual estimated landings reaching near record high levels at 126 million lbs. (57.3 mt), with revenue in excess of $423 million in 2011 (NMFS, 2012). The U.S. lobster resource occurs in continental shelf waters from Maine to North Carolina[25]. A recent peer-reviewed stock assessment for American lobster, prepared in 2005 and published by the ASMFC in 2006, identified three new biological stock units, delineated primarily on the basis of regional differences in life history parameters, such as lobster distribution and abundance, patterns of migration, location of spawners, and the dispersal and transport of larvae. These stock units are the Gulf of Maine (GOM), Georges Bank (GBK), and Southern New England (SNE).[26]

The U.S. lobster fishery is conducted in each of the three stock units -- GOM, GBK, and SNE. While each area has an inshore and offshore component to the fishery, GOM and SNE areas are predominantly inshore fisheries and the GBK area is predominantly an offshore fishery. The GOM stock is primarily fished by fishermen from the states of Maine, Massachusetts, and New Hampshire. The GBK stock is primarily fished by fishermen from Massachusetts and Rhode Island. The SNE stock is primarily fished by fishermen from the states of Connecticut, Massachusetts, New York, and Rhode Island, with smaller contributions from the states of New Jersey, Delaware and Maryland.

Through the late 1970s, total landings for the U.S. lobster fishery were relatively constant, at 14,000 mt. Since then, landings have more than doubled, reaching 37-38,000 mt in 1997-98 and then dropping to 33,000 mt in 2003. These landings are primarily composed of catch from nearshore waters (0 to 12 nautical miles).

GOM supports the largest fishery, constituting 76 percent of the U.S. landings from 1981 to 2007, and 87 percent since 2002. Landings in the GOM were stable between 1981 and 1989, averaging 14,600 mt, then increased dramatically from 1990 (19,200 mt) to 2006 (37,300 mt). Landings averaged 33,000 mt from 2000-2007.

GBK constitutes the smallest portion of the U.S. fishery, averaging 5 percent of the landings from 1981 to 2007. From 1981-2002, landings from the GBK fishery remained stable (averaging 1,300 mt). Landings nearly doubled from 2003-2007, reaching a high of 2,400 mt in 2005, and they have remained high since.

SNE has the second largest fishery, accounting for 19 percent of the U.S. landings between 1981 and 2007. Landings increased sharply from the early 1980s to the late 1990s, reaching a time series high of 9,900 mt in 1997. Landings remained near the time series high until 1999, when the fishery experienced dramatic declines in landings. From 2000 to 2007, landings from the SNE accounted for only 9 percent of

[24] "Economic efficiency refers to the point at which the added cost of producing a unit of fish (or lobster in this case) is equal to what buyers pay. Economic efficiency refers to a condition of minimal waste in the fishery and economy, when the difference between fishing costs and fishing revenue for the fishery as a whole is greatest, not when catch and/or revenue is maximized", (ASMFC 2002b).

[25] In addition to American lobster, the United States also has a spiny lobster fishery, which makes up a small percentage of the total U.S. landings. For purposes of this EIS, however, it is assumed that total U.S. landings are composed exclusively of American lobster.

[26] These units replace previously delineated boundaries, which were the GOM, Georges Bank and Southern New England Outer Shelf (GBS), and South of Cape Cod to Long Island Sound (SCCLIS) stock areas.

the U.S. total for American Lobster, reaching a time series low of 6 percent in 2004.The most recent 2009 Stock Assessment Report concluded that "(t)he American lobster fishery resource presents a mixed picture, with stable abundance for much of the GOM stock, increasing abundance for the GBK stock, and decreased abundance and recruitment yet continued high fishing mortality for the SNE stock."[27]

More specifically, the 2009 stock assessment evaluated the status of the American lobster fishery in terms of stock abundance, fishing mortality, and fishery performance (i.e., fishing effort, as measured by number of traps, landings, mean length of catch, and gross CPUE), measuring these parameters against recommended reference points that include median reference abundance and median exploitation rate thresholds for sexes combined over the fixed time period of 1982-2003 in GOM and GBK and 1984-2003 in SNE. Conclusions about stock status would be determined by comparing the average reference abundance and average exploitation rate for sexes combined during the most recent 3 years to stock-specific threshold values.

Based on these reference points, "overfishing" would occur if the average effective exploitation rate during 2005-2007 were higher than the stock-specific median threshold. A stock would be "depleted" if average reference abundance during 2005-2007 fell below the median threshold level. In either of these cases, corrective management action should be implemented. The results of this evaluation are as follows:

Table 1.1 - 2009 Stock Assessment Results for American Lobster by Stock Area[28]

Variable	GOM	GBK	SNE
Effective exploitation			
Effective exploitation threshold	0.49	0.51	0.44
Recent effective exploitation 2005-2007	0.48	0.30	0.32
Effective exploitation below threshold?	YES	YES	YES
Reference abundance			
Abundance threshold	72,030,500	1,912,355	25,372,700
Recent abundance 2005-2007	116,077,000	4,698,670	14,676,700
Abundance above threshold?	YES	YES	NO

The GOM stock is in favorable condition based on the recommended reference points. The stock is above the reference abundance threshold and slightly below the effective exploitation threshold. *Therefore the GOM lobster stock is not depleted and overfishing is not occurring.*

The GBK stock is in a favorable condition based on the recommended reference points. The stock is above the reference abundance threshold and below the effective exploitation threshold. *Therefore the GBK lobster stock is not depleted and overfishing is not occurring.*

The SNE stock is in poor condition based on the recommended reference points. The stock is below the reference abundance threshold and below the effective exploitation threshold. Model runs that

[27] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).
[28] Ibid.

incorporated increasing trends (50 percent-100 percent) in natural mortality (*M*) also predicted reference abundance below the median. *Therefore, the SNE lobster stock is depleted but overfishing is not occurring.*

Recruitment Failure in the Southern New England Lobster Stock

Given the results of the 2009 stock assessment showing a continued decline in the condition of the SNE lobster stock, the Commission's Lobster Technical Committee (TC) continued to monitor the situation. At the Commission's May 2010 Lobster Management Board meeting the TC presented a report on the status of the Southern New England (SNE) lobster stock. That report (ASMFC, 2010; APPENDIX 16) indicated that the SNE stock is critically depleted and well below the minimum threshold abundance. The report was based on the TC review of new data from trawl surveys, sea sampling, ventless trap surveys, and young of the year (YOY) indices, which became available after the most recent stock assessment in 2009. That previous assessment concluded that the stock's reproductive capability and abundance continued in a persistent downward trend, with abundance nearing the lowest levels since the early 1980's. In the report to the Commission's Lobster Board (Board) the TC declared that the SNE stock is experiencing recruitment failure due to a combination of environmental factors and continued fishing mortality, which are keeping the stock from rebuilding.

1.2 SCOPE AND ORGANIZATION OF THIS EIS

In considering the proposed management measures, the Secretary of Commerce (Secretary), through NMFS, is responsible for complying with a number of Federal regulations, including NEPA. As such, the purpose of the Environmental Impact Statement (EIS) is to provide an environmental analysis to support the Secretary's regulatory decision and to encourage and facilitate involvement by the public in the environmental review process.

This EIS assesses potential impacts on the biological and human environments associated with the establishment under Federal regulation of various effort control measures for the American lobster fishery. The actions evaluated with this FEIS are fundamentally management in nature and thus their potential impacts on fishery management will be evaluated herein, along with other impacts (e.g., biological and physical, social and economic - see Chapter 4). The chapters that follow describe the proposed management measures and potential alternatives (Chapter 2), the affected environment as it currently exists (Chapter 3), the probable consequences on the human environment that may result from the implementation of the proposed management measures and their alternatives (Chapter 4), and the potential cumulative impacts from the proposed measures and their alternatives (Chapter 5).

In developing this EIS, NMFS adhered to the procedural requirements of NEPA; the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations (CFR) 1500-1508)[29], and NOAA's procedures for implementing NEPA[30].

The following definitions will be used to characterize the nature of the various impacts evaluated with this EIS:

- *Short-term or long-term impacts*. These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period. Long-term impacts are those that are more likely to be persistent and chronic.

[29] See Reference (CEQ 1969).
[30] NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act.

- *Direct or indirect impacts.* A direct impact is caused by a proposed action and occurs contemporaneously at or near the location of the action. An indirect impact is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.

- *Minor, moderate, or major impacts.* These relative terms are used to characterize the magnitude of an impact. Minor impacts are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively minor character. Moderate impacts are those that are more perceptible and, typically, more amenable to quantification or measurement. Major impacts are those that, in their context and due to their intensity (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA.

- *Adverse or beneficial impacts.* An adverse impact is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.

- *Cumulative impact.* CEQ regulations implementing NEPA define cumulative impacts as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." (40 CFR 1508.7) Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time within a geographic area.

1.3 PUBLIC REVIEW AND COMMENT

Agency and public participation in the NEPA process promotes open communication between the public and the government and enhances decision making. All persons and organizations having an interest in the Secretary's decision on whether to promulgate the proposed regulations are encouraged to participate in the decision-making process. The actions set forth in this Final Rule have undergone extensive and open public notice, debate and discussion both at the Commission and Federal levels.

Commission Public Process - General

Typically, the public discussion of a potential Federal lobster action begins within the Commission process. Specifically, the Commission's Lobster Board often charges its Plan Development Team or Plan Review Team sub-committees of the Lobster Board to investigate whether the existing ISFMP needs to be revised or amended to address a problem or need, often as identified in a lobster stock assessment. The Plan Review and Plan Development Teams are typically comprised of personnel from state and federal agencies knowledgeable in scientific data, stock and fishery condition and fishery management issues. If a team or teams conclude that management action is warranted, it will so advise the Lobster Board, which would then likely charge the LCMTs to develop a plan to address the problem or need. The LCMTs, most often composed of industry representatives, will conduct a number of meetings open to the public wherein they will develop a plan or strategy, i.e., remedial measures, in response to the Lobster Board's request. The LCMTs then vote on the plan and report the results of their vote back to the Lobster Board. Minutes of the LCMT public meetings can be found at the Commission's website at

http://www.asmfc.org under the "Meeting Summaries and Reports" page in the American Lobster sub-category of the Fisheries Management heading.

After receiving an LCMT proposal, the Commission's Lobster Board will often attempt to seek specialized comment from both the Lobster Technical Committee and Lobster Advisory Panel before the proposal is formally brought before the Board. The Technical Committee is composed of specialists, often scientists, whose role is to provide the Lobster Board with specific technical or scientific information. The Advisory Panel is a committee of individuals with particular knowledge and experience in the fishery, whose role is to provide the Lobster Board with comment and advice. Minutes of the Technical Committee and Advisory Panel can be found at the Commission's website at http://www.asmfc.org under the "Meeting Summaries and Reports" page in the American Lobster sub-category of the Fisheries Management heading.

After receiving sub-committee advice, the Lobster Board debates the proposed measures in an open forum whenever the Board convenes (usually four times per year, one time in each of the spring, summer, fall and winter seasons). Meeting transcripts of the Lobster Board can be found at the Commission's website at http://www.asmfc.org under "Board Proceedings" on the "Meeting Summaries and Reports" page in the American Lobster sub-category of the Fisheries Management heading. These meetings are typically scheduled months in advance and the public is invited to comment at every Board meeting. In the circumstance of an addendum, the Board will vote on potential measures to include in a draft addendum. Upon approving a draft addendum, the Lobster Board will conduct further public hearings on that draft addendum for any state that so requests. After conducting the public hearing, the Lobster Board will again convene to discuss the public comments, new information, and/or whatever additional matters are relevant. After the debate, which may or may not involve multiple Lobster Board meetings, additional public comment and/or requests for further input from the LCMTs, Technical Committee and Advisory Panel, the Lobster Board will vote to adopt the draft addendum, and if applicable, request that the Federal Government implement compatible regulations.

Commission Public Process – Outer Cape LCMA Limited Access Program

The Commission's Outer Cape LCMA recommendations were the product of significant public debate and discussion. The Commission's Lobster Board initiated discussion of its Outer Cape Cod Limited Access Plan in Addendum III in July 2001 and sent a draft addendum to the Outer Cape Cod LCMT for discussion and refinement. After review, the LCMT sent it back to Commission where it was approved in draft form in October 2001 and presented in Lobster Board public hearings in November 2001 before the Board ultimately approved it at a public meeting in February 2002. The Board amended Addendum III in Addendum XIII, which went through a similar public process before the Lobster Board adopted it in May 2008. A more detailed chronology of the public process, including examples of media coverage, is set forth in Appendix 8.

Commission's Public Process – LCMA 2 Limited Access Program

The Commission's LCMA 2 recommendation was the product of significant public debate that was even more involved than the public process that went into the creation of the Outer Cape LCMA Plan. The LCMA 2 Plan originated in October 2002, when the Lobster Board's scientific Technical Committee reported the basis of what ultimately was considered to be a lobster crisis in LCMA 2. The Board became so concerned about the poor condition of the lobster stock that it took emergency action in February 2003 (a gauge increase) as an immediate stop-gap measure while it developed a more thorough plan to respond to the situation. For more than 7 years, the Lobster Board and its sub-committees publicly deliberated over its LCMA 2 plan. The Board adopted measures (Addendum IV), then re-thought its position,

rescinded measures (Addendum VI), proposed new measures (Addendum VII), then later added detail to the measures (Addendum XII). A more detailed chronology of the public process, including examples of media coverage, is set forth in Appendix 8.

Commission Public Process – ITT

In February 2002, the Commission recommended a first of its kind Trap Transferability Program in the Outer Cape LCMA. The initial recommendation was overly simplistic, which hampered its implementation. In short, the Commission sought to allow qualified Outer Cape permit holders to buy and sell their trap allocations during a designated time period up to certain trap cap. The Commission followed its Outer Cape Transferability Plan with new trap transfer plans in two other LCMAs: LCMAs 2 and 3. With each recommendation, the Commission's transferability plans became more detailed.

Each LCMA trap transfer plan was crafted after considerable public debate and comment. Industry-based Lobster Conservation Management Teams in LCMAs 2, 3, and Outer Cape Cod LCMA were the original proponents and architects of their respective LCMA plans. The plans were further refined in public meetings and hearings by the Lobster Board. Ultimately, after Board approval, the trap transfer plans were forwarded to NMFS, at which time additional public notice and hearing occurred. The specific Outer Cape ITT recommendations are set forth in Addendum III and XIV. The LCMA 3 recommendations are contained in Addenda IV, V, and XIV. The LCMA 2 recommendations are contained in Addendum VII and Addendum IX. The Lobster Board set forth general ITT accounting principles in Addendum XII that are applicable to all LCMAs. A more detailed chronology of the public process, including examples of media coverage, is set forth in Appendix 8.

Commission Public Process – Southern New England Stock Failure

In May 2010, the Lobster Board's Technical Committee reported at the Commission spring public meeting that the SNE lobster stock was in recruitment failure. The TC recommended a 5-year moratorium on SNE lobster harvest because even low levels of fishing mortality would exacerbate poor stock conditions and hamper stock rebuilding. NMFS debuted its DEIS at this same meeting. The Board, however, was so concerned about the TC's report that it requested that NMFS delay any action on its rulemaking until such time that the Board has sufficiently addressed the poor stock conditions. During the months of May and June 2010, NMFS held public hearings on the DEIS and solicited comments but heeded the Board's advice to wait for further action on the stock condition before filing a proposed rule.

The TC's report received national media attention and resulted in an additional, special Lobster Board public meeting in July 2010. The meeting was widely attended by members of the lobster industry as well as the media and legislative representatives. The public was given an opportunity to comment on the issue and NMFS provided a summary of how Federal fishery disaster assistance programs function, should the states endeavor to seek such assistance from the Federal Government.

Ultimately, the Board decided to initiate two new addenda to remedy the recruitment failure in SNE. The first of these addenda was Addendum XVII, which sought to reduce fishing exploitation by 10 percent, applying to all gear types, beginning in 2013. Addendum XVII was approved for public comment in August 2011 and was ultimately approved at the Lobster Board's February 2012 public meeting. The second of the addenda was Addendum XVIII, which sought to scale the SNE fishery to the diminished size of the SNE stock through a multi-year series of trap reductions. Addendum XVIII was approved for public comment in May 2012 and was ultimately approved at the Lobster Board's August 2012 public meeting. A more detailed chronology of the public process, including examples of media coverage, is set forth in Appendix 8.

Federal Public Process

NMFS initiated the public scoping process for this action following action by the Commission with the approval of Addendum I in August, 1999. Addendum I was in response to Commission actions that established LCMTs and tasked those LCMTs to develop management programs suited to the needs of the LCMA while meeting the targets in the ISFMP. Following TC review of the plans, in Addendum I, the Board initiated a program directed towards controlling effort and began the process to establish historical participation and transferable trap programs that has evolved over several Commission addenda. In response to the Board action, on September 1, 1999, NMFS published an ANPR (64 FR 47756) notifying Federal permit holders that regulatory actions in the lobster fishery may involve further restrictions on access to LCMAs.

In follow up to additional Commission action in Addenda II and III, on September 5, 2002 (67 FR 56800), NMFS published a Notice of Intent (NOI) to prepare an EIS to evaluate Commission recommendations to limit future access in several LMCAs, including LCMA 3 and the OCLMA. This and subsequent NOIs included information on the proposed regulatory action; requested public comments on the scope of the EIS; and provided information on how the public could submit comments by mail, hand delivery, facsimile, or electronic means. Following Commission revisions to several relevant LCMA LAP/ITT provisions in Addenda IV through VI, NMFS published a ANPR/NOI on May 10, 2005 (70 FR 24495) of its intent to move forward with regulatory actions based upon the redesigned LAP/ITT provisions in the ISFMP. A summary of the public scoping comments received and how they were addressed in the DEIS can be found in Appendix 15. On October 31, 2005, the Commission approved Addendum VII that further refined certain LAP/ITT in LCMA 2. However, the follow up implementation of the LAP/ITT measures at the state level identified additional problems that resulted in further evaluation of the plans by the Lobster Board in 2006 and 2007. Based on the delays, NMFS continued to work within the Commission process and updated Federal lobster permit holders of NMFS' intention to take complementary action. (See Appendix 13, Notice to American Lobster Permit holders, dated June 12, 2007). Ultimately, the Board action resulted in additional refinements to the ISFMP relative to this action, outlined in Addendum IX, Addenda XII through XIV, and Addenda XIX, XXI, and XXII (see Table 2.1).

In May 2010, NMFS notified the public that it was holding public meetings and seeking comments on the the DEIS (75 FR 23245, May 3, 2010). During the 60-day comment period, six public hearings were held from Maine to southern New Jersey to elicit comments from the public and provide them with information on the alternatives evaluated in the DEIS. During this time, the Commission commented and requested that NMFS not take action until the Commission's Lobster Board craft its plan to respond to the SNE Recruitment Failure. The Lobster Board's response plan finally became known in February 2012 and August 2012 with the passage of Addenda XVII and XVIII, respectively. The Lobster Board also refined its Trap Transferability Program in Addendum XIX (February 2013), Addendum XXI (August 2013), and Addendum XXII (October 28, 2013). NMFS therefore renewed its focus on its rulemaking in June 2013 by publishing proposed regulations for the LAP/ITT (78 FR 35224, June 12, 2013). Several comments were received during the comment period and those comments are summarized as a separate document (see APPENDIX 7).

1.4 REGULATORY REQUIREMENTS

NMFS is the lead Federal agency for the proposed actions evaluated in this FEIS. Any regulations that result from these actions will be drafted under the Atlantic Coastal Act (ACA). Although the ACA is the primary regulatory driver behind the proposed management measures, requirements under numerous other Federal environmental laws concerning specific environmental resources are also triggered by the

proposed measures and must be factored in to any final decision made by the agency. Examples of these include Section 7 of the Endangered Species Act (ESA), the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Marine Mammal Protection Act (MMPA), and Section 307 of the CZMA. These requirements are discussed in detail in Sec. 6.0, "*Other Applicable Law*."

Chapter 2 – Detailed Description of Proposed Management Measures and Alternatives

DETAILED DESCRIPTION OF PROPOSED MANAGEMENT MEASURES AND ALTERNATIVES CHAPTER 2

2.0 BACKGROUND

As discussed in Chapter 1, the most recent stock assessment for American lobster resulted in a number of major conclusions**,** two of which are particularly significant to this action: 1) that portions of the fishery (specifically, the SNE stock unit) were "depleted," as evidenced by reduced stock abundance[31], and 2) that the number of traps being fished suggests that there is a high level of effort occurring in portions of the fishery.[32] These conclusions were further emphasized with the TC's declaration in 2010, of a recruitment failure in the SNE stock. Generally speaking, state and Federal efforts to address these problems fall within two types of management actions: 1) broodstock measures, which focus on abundance and mortality issues and rely on restrictions limiting the size of the lobsters that can be landed so that egg-producing females are protected and 2) effort-control measures, which have conservation benefits, but also focus on economic efficiency issues[33] and rely on restrictions that limit access to the fishery through the number of permits and traps allowed. The Commission has passed addenda that establish various broodstock measures for the states and these measures either have been addressed already or will be addressed by NMFS through separate actions under NEPA and the Federal rulemaking process. The focus of this EIS is on effort control measures—and, in particular, measures recently approved by the Commission limiting access to the fishery and certain associated business and operational practices therein. Following a brief discussion of limited access as it has been applied to the lobster fishery to date, the rest of this chapter will identify the Commission-approved management measures to be analyzed within this FEIS and their alternatives.

Limiting Access into the Lobster Fishery

The concept of controlling lobster fishing effort by limiting access to historical fishers is not new. Specifically, in 1994, NMFS generally limited access into the Federal lobster fishery to those who could document participation in the fishery before 1991 (59 FR 31938 – June 21, 1994). Years later, in August 1999, the Commission passed Addendum 1, which limited access to LCMAs 3, 4 and 5 to only those who could document fishing history in those LCMAs. Subsequent Commission addenda similarly attempt to control effort by limiting access to other LCMAs (see Table 2.1).

[31] The 2009 American Lobster Stock Assessment states, "(t)he SNE stock is in poor condition based on the recommended reference points," and that portions of the GOM stock unit (statistical area 514) "….continued to experience very high exploitation rates and declines in recruitment and abundance since the last assessment", (ASMFC 2009a).
[32] Ibid.
[33] See Footnote 23 on economic efficiency.

Table 2.1 - Limited Entry and Individual Trap Transferability

LCMA	Commission Action[34]	Corresponding Federal Action
EEZ	March 1994 - Amendment 5[35]	June 21, 1994 (59 FR 31938)
LCMA 6	1995 – by State action	Not Applicable in Federal Waters
LCMA 3	August 1999 – Addendum 1	March 2003 (68 FR 14902)
LCMA 4	August 1999 – Addendum 1	March 2003 (68 FR 14902)
LCMA 5	August 1999 – Addendum 1	March 2003 (68 FR 14902)
LCMA OCC	February 2002 – Addendum III	Under Analysis
LCMA 2	December 2003 – Addendum IV[36]	Under Analysis
LCMA 3	March 2004 – Addendum V	Under Analysis
LCMA 2	February 2005 – Addendum VI	Under Analysis
LCMA 2	November 2005 – Addendum VII	May 10, 2005 (70 FR 24495)
LCMA 2	October 2006 – Addendum IX	Under Analysis
All LCMAs	February 2009 – Addendum XII	Under Analysis
LCMA OCC	May 2008 – Addendum XIII	Under Analysis
LCMA 3	May 2009 – Addendum XIV	Under Analysis
LCMA 1	November 2009 – Addendum XV	June 12, 2012 (77 FR 32420)
LCMA 3	February 2013 – Addendum XIX	Under Analysis (ITT modifications)
LCMA 2	August 2013 – Addendum XXI	Under Analysis (ITT modifications)
LCMA 3	October 2013 – Addendum XXII	Under Analysis (ITT modifications)

Limited Access Criteria

In limiting access since approval of Amendment 3 in 1997, the Commission has used a similar step-by-step approach in all of the LCMAs. First, participants are qualified based upon their ability to document a history of fishing within the LCMA; second, those who qualify are allocated some number of traps within a given management area, based upon their ability to document the level of past fishing effort in the LCMA.[37] Moreover, for three of the LCMAs (LCMAs 2, 3, and the Outer Cape) the Commission has introduced and approved a third step, individual transferable trap (ITT) programs, in which permit holders can transfer full or partial trap allocations among themselves.

Despite some similarities in approach across LCMAs, including the use of past fishing performance as a cornerstone for qualifying and allocating to fishers, there are differences in how the states have applied Commission-approved criteria for limiting access within the various LCMAs. For example, depending on the LCMA, different time periods are used to establish fishing history. LCMAs 3, 4, and 5, for example, used the time period from 1991-to-1999; LCMA 6 used 1995-to-1998; the Outer Cape LCMA uses 1999-to-2002; LCMA 2 uses 1999-to-2003; and LCMA 1 used 2004-2008. Other examples of differences in

[34] All Addenda can be found at www.asmfc.org, under Interstate Fisheries Management, American Lobster. The following are attached to this EIS as appendices: Addendum VI (Appendix 1), Addendum VII (Appendix 2), Addendum XII (Appendix 3), Addendum XIII (Appendix 4), and Addendum XIV (Appendix 5).

[35] New England Fishery Management Council document. This action occurred prior to the 1999 transfer of Federal lobster management to the Commission under the Atlantic Coastal Act.

[36] Addendum IV was rescinded in Addendum VI and then revised and approved in Addenda VII (Appendix 2) and XII (Appendix 3).

[37] Through various addenda to the ISFMP for American lobster, history-based effort control plans based on fishery performance have been enacted by NMFS (LCMAs 1, 3, 4, and 5) and states (MA in Outer Cape Cod; NY and CT for LCMA 6; and MA, RI, CT,& NY for LCMA 2). .

the LCMA programs include the following: the use of appeals (not mentioned in the Outer Cape LCMA program, but set forth in some detail in the LCMA 2 program); the number of traps allowed to be transferred and the percentage of trap reduction levied when traps are transferred (e.g., higher in LCMA 2 than in LCMA 3); and the nature of the documentation allowed for use by an applicant (e.g., a document hierarchy for LCMAs 3, 4 and 5 as suggested in Addendum 1, compared to catch report statistics for the LCMA OCC in Addendum III). NMFS previously identified documentation as a significant concern when developing its complementary limited access program for LCMAs 3, 4 and 5[38]. Specifically, different states have different reporting requirements and thus, different documents that contain different information. Some states, in fact, have no reporting requirements and thus no documentation. The advent of the Commission's Mandatory Reporting Program (Addendum X – February 2007) has helped to resolve this lack of uniformity, but, nevertheless, the issues identified in the LCMA 3, 4 and 5 limited access FEIS[39] remain relevant today.

The Commission came to realize that the seemingly minor differences in how the states administered the various limited access programs and the management inconsistencies these differences created across LCMAs had the potential to undermine the overall effectiveness of the Lobster ISFMP (also referred to as the Lobster Plan). As the affected states began the LCMA 2 qualification process for their residents in 2006, variations in approach by different states led to concerns of inconsistent application of the Addendum VII criteria. Ultimately, in response, a "white paper" was developed by a technical review committee in October 2007 identifying many of the inconsistencies left unaddressed by previous Commission addenda and ultimately forming the basis of Addendum XII, passed by the Commission in February 2009.[40]

Addendum XII

Addendum XII calls for the states and NMFS to adopt a uniform approach when implementing limited access programs. Specifically, the document seeks all jurisdictions to treat fishing history the same way. In particular, the document identifies the following:

> Despite the overall similarity of the effort control plans, administration of 6 [LCMAs with] similar, but not identical, plans involving potential regulations by 12 states, from Maine to North Carolina and NOAA Fisheries, is obviously complex and challenging. Not only must all jurisdictions implement each addendum, but they must implement each addendum in a substantially identical fashion lest the overall integrity of the plan be compromised and the effectiveness of the measures lost. Due to the complexity of this program, the development and ongoing operation of a transferable trap allocation tracking system is identified as a fundamental requirement to the effective administration of this program.
>
> ….
>
> In order to ensure that the various LCMA-specific effort control plans remain cohesive and viable, and that one jurisdiction's interpretation of a plan does not undermine the implementation of another jurisdiction, this addendum does three things: First, it clarifies certain foundational principles present in the Commission's overall history-based trap allocation effort control plan. Second, it redefines the most restrictive rule. Third, it establishes management measures to ensure that history-based trap allocation effort control plans in the various LCMAs are implemented without undermining resource conservation efforts of neighboring jurisdictions or LCMAs.[41]

[38] See Final Supplemental Environmental Impact Statement (FSEIS), October 30, 2002, p. 32 (NMFS 2002a).
[39] See Final Environmental Impact Statement (FEIS) November 8, 2002, (67 FR 68128).
[40] This issue is discussed in greater detail in Chapter 4. See Addendum XII (Appendix 3) and the Commission's white paper (Appendix 6).
[41] See Addendum XII page 4, attached to this FEIS as Appendix 3.

Addendum XII thus is important, among other reasons, for its attempt to address management inconsistencies across LCMA jurisdictions. But while it is a necessary step, NMFS recognizes that problems associated with a lack of uniformity will likely remain given that the vast majority of involved states qualified permit holders and allocated traps long before the Addendum was approved. Further, NMFS has already noted that states have interpreted aspects of the Commission's LCMA 2 and OCC limited entry programs differently (e.g., Rhode Island's LCMA 2 appeal criteria is more liberal than that of its LCMA 2 neighbor, Massachusetts) and the states have likely applied differing levels of circumspection in their review of involved qualification and allocation data. Many of these complexities are discussed in detail in Chapter 4.

Other Relevant Addenda

Commission lobster management is not a static process; new issues are always arising. Often, by the time the Commission completes one part of its Lobster Plan, additions, edits and amendments to that same part can already be under development. For more discussion on the fluidity of the Commission process, see FEIS Section 3.1 (Regulatory Environment), as well as Proposed Rule, Response to Comment No. 2 (78 FR 35217). Here, before NMFS could publish its DEIS in May 2010, the Commission was already deliberating upon and approving addenda that would amend, add to and modify its ITT program. After NMFS published its DEIS, the Commission approved still more addenda with more recommended measures, and further addenda remain under development. NMFS has begun its rulemaking process for many of these recommended measures (see e.g., 78 FR 51132 August 20, 2013) and their specifics will be analyzed in a future NEPA document. Regardless, however, the Commission has adopted these measures into its Lobster Plan and the states have implemented the measures into regulation. As such, their mere existence at the state level potentially impacts NMFS' decision-making process in its present action. These additional addenda are set forth below.

Addendum XIV (May 2009)

Addendum XIV relates to LCMA 3 management measures. It sought to cap traps in LCMA 3 at 2,000 traps, such that permit holders with trap allocations below 2,000 could build up to 2,000 traps, but no higher. The status of the LCMA 3 trap cap remained in flux thereafter as the LCMA 3's LCMT and Commission deliberated upon it in later Addenda. NMFS's Proposed Rule suggested a 1,945 trap cap simply because that was the existing Federal LCMA 3 trap cap at the time, although NMFS noted that Commission trap cap discussions were ongoing and that NMFS might alter its suggested cap after the Commission reached a final decision. The Commission did so in August 2013 in Addendum XXI, which reaffirmed the 2,000 trap LCMA 3 cap. Addendum XXI is discussed in more detail immediately below.

Addendum XIV also established a trap transfer tax of 20 percent, although Addendum XIX amended this transfer tax to 10-percent in February 2013. NMFS's Proposed Rule suggested use of a 10-percent transfer tax.

Addendum XVII (February 2012) and XVIII (August 2012)

Addendum XVII and XVIII contain the Commission's two-phase response to the Southern New England (SNE) stock recruitment failure. In phase one, Addendum XVII attempts to reduce SNE lobster exploitation by 10 percent through a series of mostly biological measures (e.g., v-notching, gauge size increases) that do not directly relate to the Commission's ITT Program. In Phase two, Addendum XVIII seeks to reduce SNE lobster exploitation in the two most productive LCMAs – LCMA 2 and 3 –by reducing trap allocations in LCMA 2 by 50 percent and in LCMA 3 by 25 percent.

The Addendum XVIII trap cuts have the potential to impact the nature of the alternatives selected for analysis in this present ITT rulemaking. As a preliminary matter, members of industry alleged that the trap cuts were drastic and potentially devastating. They and the Commission supported the cuts, but only with the understanding that ITT would be available to allow businesses to build their cut allocation back

up to viable levels. As such, industry states that the timing of the ITT Program is critical. If the trap transfer happens too early - i.e., before the trap cut - then the ITT Program loses its mitigation benefits. In other words, lobster fishers would never be able to build up to the trap cap because as soon as they received transferred allocation, the trap cuts would knock their allocation back down. In the alternative, if the trap transfer happens too late, i.e., weeks or months after the trap cut, then the lobster fishers would be forced to fish at reduced and allegedly insufficient trap numbers while waiting for their transfers to become effective. NMFS published an Advanced Notice of Proposed Rulemaking for the recommended Addendum XVII and XVIII measures in August, 2013 (78 FR 51132). Regardless of what NMFS ultimately does in its rulemaking, the states have already incorporated the recommended trap cuts in their regulations.

Addendum XXI (August 2013)

Addendum XXI modified the Commission's ITT Program by rescinding Addendum XII's requirement that transferred traps maintain eligibility for only a single LCMA and relinquish any multi-LCMA history. NMFS's Proposed Rule suggested that a trap's multi-LCMA history be relinquished upon transfer, although NMFS's rationale was largely based on a desire to be consistent with the Commission Plan which, at the time of the Proposed Rule, allowed only single LCMA history to be maintained upon transfer. Additionally, Addendum XXI established a single ownership cap which allows the accumulation of 800 traps in excess of the 800-trap active trap cap. Under this provision any permit holder (individual or corporation) may not own in excess of 1,600 LCMA 2 traps at any given time, although those who held more than the cap prior to December 2003, may maintain those traps currently held. The intent is to allow a permit holder to activate "banked" traps to adjust for mandated trap cuts. The Addendum invoked a sunset clause, whereby the single ownership cap will expire two years after the alst trap reduction as specified in Addendum XVIII, when the LCMA 2 trap cap will revert to the historical 800-trap active cap. Among other measures, Addendum XXI also reaffirmed the LCMA 3 active trap cap at 2,000 traps with that cap lowering yearly for a 5-year period.

Addendum XXII (October 2013)

Addendum XXII further modified the Commission's ITT Program in LCMA 3 by adopting single and aggregate ownership trap caps. Specifically, the Addendum adopted a single ownership trap cap that allows an LCMA 3 lobster fisher to acquire traps in excess of the active trap cap. The Addendum adopts a schedule for reductions in the single ownership cap as trap levels are reduced on an annual basis under the Commission's Addendum XVIII trap reduction schedule. For each year of the reduction in active traps, the excess traps may be activated to provide a buffer against trap cuts. After the fifth and final year of the LCMA 2 trap cuts the active trap cap will be 1,584 traps with a single ownership cap of 1,800 traps.

Additionally, to prevent the excess consolidation of traps in LCMA 3, the Commission opted to cap traps rather than permits. The Addendum caps the aggregate number of LCMA 3 traps that any one permit holder may own at no more than 5 times the single ownership cap. (A permit holder would need to have multiple permits to exceed the single ownership cap). Called the aggregate ownership cap, permit holders would be restricted to this limit. However, if a permit holder exceeded the aggregate ownership cap prior to an established control date published by NMFS, they may retain those traps, but may not accrue any additional traps.

2.1 ALTERNATIVES

NEPA requires that any Federal agency proposing a major action consider reasonable alternatives to the proposed action. The evaluation of alternatives in an EIS assists the Secretary in ensuring that any unnecessary impacts are avoided through an assessment of alternative ways to achieve the underlying purpose of the project that may result in less environmental harm.

To warrant detailed evaluation by NMFS, an alternative must be reasonable[42] and meet the Secretary's purpose and need (see Section 1.2). Screening criteria are used to determine whether an alternative is reasonable. The following discussion identifies the screening criteria used in this EIS to evaluate whether an alternative is reasonable; evaluates various alternatives against the screening criteria (including the proposed measures) and identifies those alternatives found to be reasonable; identifies those alternatives found not to be reasonable; and for the latter, the basis for this finding. Alternatives considered but found not to be reasonable are not evaluated in detail in this EIS.

Screening Criteria – To be considered "reasonable" for purposes of this EIS, an alternative must meet the following criteria:

- *An alternative must be compatible with the ISFMP for lobster and consistent with its goals.* [43] The ISFMP embodies the state management directives for the fishery. It would make no practical sense to advance Federal management measures that conflict with the efforts of the states, which are relied upon for the overall success of the fishery. Given this, while there may be other ways, not identified here, to reduce fishing effort in the American lobster fishery while providing the potential for economic flexibility it is in the Federal interest to focus on measures that will support coordinated management of this state/Federal resource.

- *An alternative must be consistent with the 10 National Standards set forth in the Magnuson-Stevens Act.*[44]

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[42] "Section 1502.14 (of NEPA) requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are *practical or feasible from the technical and economic standpoint and using common sense*, rather than simply desirable from the standpoint of the applicant." (40 Questions) (emphasis added)

[43] The plan's overall objectives were set forth in Amendment 3. They are as follows:

(1) Protect, increase or maintain, as appropriate the brood stock abundance at levels that would minimize risk of stock depletion and recruitment failure;
(2) Develop flexible regional programs to control fishing effort and regulate fishing mortality rates;
(3) Implement uniform collection, analysis and dissemination of biological and economic information and improve understanding of the economics of harvest;
(4) Maintain existing social and cultural features of the industry wherever possible;
(5) Promote economic efficiency in harvesting and use of the resource;
(6) Minimize lobster injury and discard mortality associated with fishing;
(7) Increase understanding of biology of American lobster, improve data, improve stock assessment models; improve cooperation between fishermen and scientists;
(8) Evaluate contributions of current management measures in achieving objectives of the lobster plan;
(9) Ensure that changes in geographic exploitation patterns do not undermine success of Commission management program;
(10) Optimize yield from the fishery while maintaining harvest at a sustainable level;
(11) Maintain stewardship relationship between fishermen and the resource.

[44] The 10 National Standards are:

(1) Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.
(2) Conservation and management measures shall be based upon the best scientific information available.
(3) To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.
(4) Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, (Continued at foot of next page) such allocation shall be: (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.
(5) Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.
(6) Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.
(7) Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.
(8) Conservation and management measures shall, consistent with the conservation requirements of this Act

- *An alternative must be administratively feasible*. The costs associated with implementing an alternative cannot be prohibitively exorbitant or require unattainable infrastructure, such as databases or additional staffing.

- *An alternative cannot violate other laws (e.g., ESA, MMPA).*

The Secretary proposes to act on the Commission's recommendations to promulgate regulations designed to control fishing effort in the American lobster fishery. Some of the measures proposed are specific to a particular LCMA, while other measures would apply to multiple LMCAs for the American lobster fishery. All of the measures would limit access (i.e., permit authorizations) to certain LCMAs, limit the number of traps, or both.

2.1.1 LCMA Outer Cape Cod (OCC) Limited Access Alternatives

Table 2.2 - Criteria Used For Outer Cape Area Limited Access Alternatives

	Alternative 1 – No Action	**Alternative 2 – Commission (Preferred Option)**	**Alternative 3 – Qualify Only**
QUALIFICATION Criteria for Future access into the Area	None - Status Quo: Existing regulations apply – open access to all with a Federal lobster permit	Yes – Qualification Required – Future participation based on 1999-2001 fishing history	Yes – Qualification Required – Future participation based on 1999-2001 fishing history
ALLOCATION Criteria for Future Trap Allocation	None - Status Quo: Up to 800 Traps – subject to more restrictive state trap limits	Yes – Qualification Required – Based on highest effective traps fished during the 2000-2002 fishing history	None - Status Quo: Up to 800 Traps – subject to more restrictive state trap limits

Overview

In February 2002, the Commission established a state-level limited access program in the OCC LCMA "in order to control the expansion of fishing effort" in that LCMA.[45] The Commission's limited access plan envisioned a two-step entry process: First, qualify individuals for access into the LCMA based on

(including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to: (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.
(9) Conservation and management measures shall, to the extent practicable: (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.
(10) Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

[45] Addendum III, Section 2.1.7.2, February 20, 2002, (ASMFC 2002a).

their fishing history in that area and; second, allocate traps to the qualified individuals based upon the number of traps they historically fished within the LCMA.

In December 2003, Massachusetts proposed a variation on this program that the Commission determined was the "conservation equivalent" of their own and thus allowable under the ISFMP. The Massachusetts variation focused on the allocation formula, for which it shifted the involved time period forward a year and used lobster pounds landed as the metric to determine allocation.[46] With the approval by the Commission of Addendum XIII in May, 2008 (Appendix 4), the Massachusetts program was adopted OCC-wide not simply as a conservation equivalent, but as replacing, and thus becoming, the official Commission OCC plan itself.

The Commission's OCC Plan allows for the use of appeals. In short, permit holders who are aggrieved by NMFS's qualification and/or allocation decision could seek reconsideration of that decision in certain limited situations. The benefits of an appeal are that it has the potential to provide a more just outcome insofar as it allows stakeholders additional participation in the decision-making process and allows agencies to double check and, if necessary, correct their decision. Appeals can also help better align state and federal decisions on dual permit holders. Appeals do, however, have negative aspects. They can be unwieldy, provide gaping loopholes that can undermine rules and can significantly add administrative burden to agencies with limited resources. Because appeals are relatively discrete measures – i.e., they can be added to or removed from the limited access alternatives without significantly changing the underlying alternatives—this section discusses the use of appeals separate from the underlying alternatives. Details of this and other OCC limited entry alternatives are found below and in Chapter 4, *Environmental Impacts*.

A particularly discrete OCC LCMA issue involves the Commission's OCC LCMA trap haul-out provision which establishes a seasonal fishery closure by setting an annual period when no lobster traps are allowed in the OCC LCMA. The purpose of the trap haul-out period is, most importantly, to facilitate enforcement of trap limits in the OCC LCMA. Initially approved in Addendum III in 2002, the dates of the trap haul-out period were modified in Addendum XIII in 2008. The Commission adopted Addendum XIII as the revised plan for trap transferability in the OCC LCAM because the Massachusetts conservation equivalency plan came after the initial OCC plan was adopted in 2002, and the revisions had not been formally included in an addendum . Addendum XIII modified the trap haul-out period, which requires fishermen to remove all lobster traps from the OCC LCMA during January 15 through March 15 each year. During that period it is unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during the closure period. The OCC LCMA trap haul-out period is considered as part of Alternative 2-Commission's Alternative and further addressed in the subsequent description of the alternatives, with further analysis in Chapter 4. The Commission sought to have all permit holders remove traps from January 15th thru March 15th.

Alternative 1 – No Action

Under this alternative, no Federal limited access program would be enacted in the OCC LCMA. As such, American lobster in the OCC LCMA would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. The fishery would remain open access

[46] Massachusetts's conservation equivalency is significant because the location of the OCC LCMA suggests that the vast majority of potential participants would be Massachusetts residents. In other words, if the only participants are Massachusetts residents, then the Massachusetts plan would not simply be an equivalent to the Commission Plan, it would, for all practical purposes, be the Plan itself.

to all who hold a Federal lobster permit and individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule)[47].

Any vessel issued an American Lobster limited access permit fishing with traps would continue to annually declare to NMFS in which lobster management area the vessel intends to fish. Once a vessel has declared the management area(s), no changes may be made for the remainder of the fishing year unless the vessel(s) becomes a replacement vessel for another qualified vessel. Under existing regulations (50 CFR Sec. 697.4(a)(7)), all qualified vessels may elect to fish with traps in currently "open access" LCMAs 2 and the OCC. In addition, vessels qualified to fish in limited-access LCMAs 1, 3, 4 and 5 may continue to designate those LCMAs and trap allocations for those LCMAs would be based according to each LCMA's requirements.

The No Action alternative would also exclude the adoption of the Commission's trap haul-out period for the OCC LCMA. Specifically, NMFS would not enact regulations to mandate the removal of lobster traps in the Federal waters of the OCC LCMA during the January 15 through March 15 period set forth in the Commission's Plan.

Alternative 2 – Commission Alternative (Preferred Alternative)

Under this alternative (formerly the *Massachusetts Conservation Equivalency* proposal), Federal regulations match measures recently approved by the Commission under Addendum XIII (Appendix 4).

Qualification Scheme

There will be a moratorium on new commercial permits to harvest lobster by use of pots and SCUBA in the OCC LCMA. Those with a fishing history in the OCC LCMA will be qualified to continue based upon verifiable landings of lobster caught by traps or by hand using SCUBA gear from the OCC LCMA in any year from 1999-2001. "Verifiable" means that fishers can demonstrate that they satisfy each of the following three criteria:

1. Use of LCMA OCC was specified on their license applications in 2003;
2. Landings were reported in at least one of the OCC statistical areas[48] in 1999, 2000, or 2001;
3. They reported fishing traps in at least one of the OCC statistical areas in 1999, 2000 or 2001;

Rationale

In choosing the above dates, the Commission sought to prevent the expansion of fishing effort into the OCC beyond that which existed in 1999-2001. Specifically, the years 1999 – 2001 were chosen because they were indicative of a historic presence in the area. The year 2003 was added as a requirement by Massachusetts because it suggested active, present participation in the fishery as of the date of Massachusetts' conservation equivalent regulation (December 2003). The Commission adopted the 2003 date when it adopted the Massachusetts plan as its own. In so doing, the Commission acknowledged that the relative geographical isolation of the OCC suggested that the vast majority of OCC lobster fishers would likely be Massachusetts residents and thus already beholden to the Massachusetts conservation equivalent plan. Although NMFS has had Federal permit holders from many states designating the OCC, no other state received an OCC request for limited entry from one of its citizens, which suggests that, in fact, few if any OCC lobster fishers are citizens of states other than Massachusetts. Reasons why Federal lobster fishers might designate an LCMA despite having no intent or ability to fish there are discussed in greater detail later in this FEIS (see Section 3.3.1).

[47] See Chapter 4.1 of this FEIS and Addendum XII (Appendix 3), Section 4.2 for a detailed description of the Most Restrictive Rule.
[48] Each biological stock unit is composed of "statistical areas." See Figure 5.1 for statistical areas.

NMFS' rationale in preferring this alternative encompasses and extends beyond the Commission's rationale. That is, NMFS agrees with the Commission that its qualification criteria will achieve its goal of preventing expansion of fishing effort, as well as provide a disincentive to speculative practices. Of great importance, however, is that Federal adoption of these dates will help avoid potential state-federal regulatory disconnects that would result were NMFS to use different regulatory criteria than the states. The potential for regulatory disconnects to undermine lobster management is discussed throughout this FEIS, but particularly in Sections 3.1 and 4.1.

Allocation Scheme

Individual trap allocations will be established in accordance with the following measures:

1. Trap allocations for use in the OCC LCMA shall be assigned based on the highest annual level of Effective Traps Fished during 2000, 2001 and 2002.

2. Effective Traps Fished shall be the lower value of the maximum number of traps reported fished for a given year compared to the predicted number of traps that is required to catch the reported poundage of lobsters for a given year during 2000, 2001 and 2002.

3. For coastal lobster permit holders who fished for lobster primarily by hand using SCUBA gear, Effective Traps Fished shall be the annual predicted number of traps that is associated with the permit holder's reported poundage of lobsters during the performance years 2000 – 2002 (See Considered But Rejected).

4. The value for predicted number of traps shall be based on a MA DMF[49] published analysis of traps fished and pounds landed for the OCC LCMA.

5. It shall be unlawful to fish more than 800 traps aboard any vessel involved in the commercial lobster fishery in the OCC LCMA, regardless of the number of fishermen holding coastal or offshore commercial lobster permits on board said vessel.

6. Appeals to eligibility or trap allocations shall only be considered in two situations: First, based on technical data errors and/or miscalculations such as on catch reports; and second, when a state director requests alignment of a dual permit holders state and Federal decision for the overall good of the fishery.

Rationale

The Commission chose to allocate based upon "Effective Traps Fished" because it felt that it was more reflective of actual fishing effort in the area. There are reasons why pounds of lobster landed might be more indicative of actual traps fished than simply accepting documentation of the number of traps employed by a fisher. First, the Commission found that many individuals, hearing about the potential OCC limited access measures, speculated and bought more trap tags and/or reported fishing more traps than they actually fished. This is similar to the LCMA designation speculation referred to above and discussed in detail later in Section 3.3 of this FEIS. More specifically, once word got out that managers might limit entry and allocate traps at some time in the future based upon documentation of fishing practices in the past, some lobster fishers started ordering more trap tags or putting more traps in the water simply to ensure that their future limited access documentation would reflect a maximum trap allocation. Second, certain lobster fishers put some traps in the water not so much to actively fish, but instead, to hold bottom. Holding bottom is analogous to the concept of squatter's rights. In other words,

[49] See the Comprehensive Status Report, "*Reducing Trap Effort in the Outer Cape Lobster Conservation Management Area Fishery through an Effort Control Plan*", December 2003-July 2008, (MA DMF 2008b).

certain highly productive bottom can become so overcrowded with traps that it becomes impossible to set new traps into the area when lobster migrate through it. Accordingly, some lobster fishers will occasionally set significant numbers of traps in a seasonal hot spot simply to be in position when the area later becomes productive. Often, these traps are not being baited, nor are they being regularly tended; the traps are simply occupying bottom. Accordingly, the Commission decided that it would not allocate traps designated and/or used for such purposes.

NMFS' rationale in preferring this alternative extends beyond the Commission's rationale. That is, NMFS agrees with the Commission that its allocation criteria better reflects actual fishing effort. Also of great importance, however, is that Federal adoption of the Commission's allocation criteria will help avoid potential state-federal regulatory disconnects that would result if NMFS were to use different regulatory criteria than the states. The potential for regulatory disconnects to undermine lobster management is discussed throughout this FEIS, but particularly in Sections 3.1 and 4.1.

If the Commission's Alternative were adopted, then NMFS would adopt the Commission's OCC LCMA lobster trap haul-out provision whereby all Federal lobster permit holders would be required to remove all lobster traps from OCC LCMA waters annually from January 15 through March 15.[50]

Alternative 3 – Qualify Only

Under this alternative, applicants would be qualified, thus limiting entry into the LCMA, but no new trap allocations would be made.

Qualification Scheme

Applicants would be qualified using the same criteria as those used under Alternative 2, *Commission Alternative*.

Allocation Scheme

There is no new allocation scheme enacted under this alternative. As such, American lobster in the OCC LCMA would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. Qualified individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule).

Appeals

NMFS identifies three types of appeals in this FEIS. They are as follows:

- Clerical Appeal – This appeal is designed to remedy situations where NMFS has erred in its decision due to a simple mathematical or clerical error. NMFS had an identical appeal in its rule that limited access to Lobster Conservation Management LCMAs 3, 4 and 5, and found that such an appeal worked well.
- Medical/Military Appeal—This appeal is designed to provide applicants extra qualifying years if they were unable to fish during the underlying qualifying years due to medical incapacity or military service. The concept for this appeal originated with the industry-based LCMA 2 Lobster Conservation Management Team and was debated and approved by the Commission's Lobster Board for LCMA 2 only. Consequently, NMFS is not recommending its use in the OCC LCMA.

50 At the time of the Proposed Rule, Massachusetts was considering whether to alter the OCC seasonal closure in state waters by two weeks. As a result, NMFS indicated in its Proposed rule that it would consider similarly altering the seasonal closure if doing so would better align the closure in Federal waters with the closure in Massachusetts waters. Massachusetts, however, did not alter its dates, and consequently, NMFS does not propose doing so either.

- Director's Appeal –This appeal is designed to synchronize the trap allocations of permit holders with both state and Federal lobster permits. It would only be available to individuals who have already been qualified and/or allocated by a state and the state would have to sponsor the application and indicate why approval is in the overall interests of the Commission's Lobster Plan.

NMFS is only proposing to use two of the above appeals – clerical appeals and director's appeals – for its Outer Cape LCMA limited access program. NMFS is attempting to seek a balance in proposing these three appeals. On one hand, appeals create unknown variables and potential loopholes that can undermine the purpose and effectiveness of the rule. On the other hand, however, the proposed rule is so complex that the potential for disconnects between state and Federal decision making is perhaps an even greater threat to the effectiveness of the rule. The specific rationale for each appeal is discussed below.

1. Clerical Appeal

This appeal would allow NMFS correct clerical and mathematical errors that sometime inadvertently occur when applications are processed. It is not an appeal on the merits and would involve no analysis of the decision maker's judgment. Accordingly, the appeal would not involve excessive agency resources to process. NMFS used an identical appeal with identical criteria to great success in its LCMA 3, 4 and 5 Limited Access Program. The rationale for a clerical appeal is grounded in common sense and fair play.

2. Hardship Appeal

This appeal would allow fishers to use additional years to qualify for access if they could document that medical incapacity or military service prevented them from fishing during the original qualification period. Such an appeal concerns NMFS because it creates a potentially large loophole. NMFS does not have the resources to conduct a hearing with cross-examination or to hire medical or military experts of its own to test the veracity of hardship claims. If an appellant can produce a seemingly legitimate record documenting the hardship, NMFS will likely have to grant the appellant all benefits of the doubt and allow the appeal. The states, however, faced the same potential loopholes, yet found that applicants did not abuse the process. Nevertheless, the states, particularly the Commonwealth of Massachusetts (from which most of the qualifiers would originate), did not provide a hardship appeal in their state OCC program. Accordingly, providing such an appeal federally when none exists at the state level introduces the potential for state-federal disconnects that could undermine the program.[51] As a result, NMFS does not intend to use hardship appeals in its OCC Limited Access Program.

3. Director's Appeal

This appeal would allow states to petition NMFS for comparable trap allocations on behalf of applicants denied by NMFS. The appeal would only be available to permit holders for whom a state has already granted access. The state would be required to explain how NMFS' approval of the appeal would advance the interests of the Commission's Lobster Plan.

The rationale for this appeal is grounded in the desire to remedy regulatory disconnects. As noted throughout the FEIS, the potential for regulatory disconnects is significant. NMFS knows that states have already made multiple separate decisions on qualification, allocation, and at least in some instances, trap transfers for the state portion of dually permitted fishers. NMFS is therefore faced with the daunting task

[51] Furthermore, the usefulness of such an appeal would be limited if the state did not have a similar provision. Specifically, the application of the Most Restrictive Rule, would likely limit a dual permit holder to the more restrictive of the state and federal decisions, thus potentially rendering the appeal to a paper exercise. The Most Restrictive Rule is discussed in greater detail in Chapter 4.1.

of making these same decisions and reaching identical results based upon Federal criteria that attempts to mirror the state criteria, which themselves contain slight differences. While NMFS expects to achieve identical results for the vast majority of dually permitted fishers, it would be unreasonable to expect perfect congruence in such circumstances. The Director's Appeal will help prevent the potential damage that such incongruence could create.

Considered-But-Rejected: State Qualification of Scuba Divers in the Outer Cape

In 2003, the Lobster Board granted a Massachusetts request to allow Massachusetts SCUBA divers a trap allocation even though the SCUBA divers never previously fished with lobster traps. NMFS considered the option of granting SCUBA divers a trap allocation, but rejects it as a viable alternative.

As a preliminary matter, granting trap allocations to SCUBA divers is generally contrary to the Commission's limited entry approach and would create inconsistencies amongst lobster management areas. At present, all Commission lobster limited entry programs in all LCMAs, including the OCC, have limited entry criteria based on a gear specific fishing history, i.e., all future limited access privileges are based on proof of fishing 'with traps,' and the individual trap allocation in each program is based on the number of 'traps' fished over some specified time period. NMFS incorporated this approach in its previous rulemaking that established a limited entry and individual trap allocation in LCMAs 3, 4, and 5 (68 FR 14925, March 27, 2003). No other LCMA has a SCUBA exemption. In fact, the OCC's SCUBA exemption was not even a part of the original LCMA OCC plan, but instead was included as a conservation equivalent before eventually being more formally identified in Addendum XIII.

Massachusetts' OCC SCUBA exemption does not require compatible Federal regulations. In reality, the Massachusetts exemption is not about SCUBA diving at all. With or without the exemption, SCUBA divers would be able to dive and collect lobsters in the Federal waters of the OCC just as before. They simply would not be able to convert their SCUBA catch history into Federal trap catch history - a negligible impact given that these individuals did not historically fish with traps in this area anyway. These SCUBA divers could, however, use their Massachusetts exemption to set their Massachusetts trap allocation in state waters.

Accordingly, NMFS does not believe it prudent to start creating exemptions to the historical basis of its lobster area limited access programs. The present SCUBA exemption is limited to Massachusetts divers and contained within state waters of the OCC LCMA. This exemption can exist without compatible Federal regulations. Therefore, NMFS does not believe it wise to create a new trap allocation program based upon SCUBA diving history in the Federal waters of the OCC.

Conclusion

Except for the No Action alternative, all of the alternatives identified above appear to meet the screening criteria established under Section 2.1 and thus are being carried forward for detailed review. In particular, all of the alternatives identified, except for No Action, are consistent with the ISFMP for American lobster and compatible with its goals. Alternative 2 is consistent with the Commission ISFMP on its face as it seeks to implement the OCC Limited Access Plan verbatim[52], while Alternative 3 implements the first step of the OCC Limited Access Plan (i.e., qualification).

[52] We note that Alternative 2, the *Commission Alternative*, potentially discriminates against permit holders from other states insofar as it applies Massachusetts standards to all Federal permit holders (a possible *National Standard* violation under the Magnuson-Stevens Act). NMFS has repeatedly stated in the past that Federal lobster regulations do not differentiate based upon a person's state citizenship and that its objective would be to identify a "one standard" approach that would comply with the national Standards and at the same time be consistent with the Lobster ISFMP. To the extent NMFS publishes a Proposed Rule based upon Alternative 2, one might expect that Massachusetts documentation

2.1.2 LCMA 2 Limited Access Alternatives

Table 2.3 - Criteria Used for LCMA 2 Limited Access Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission (Preferred Option)	Alternative 3 – Qualify Only
QUALIFICATION Criteria for Future Access into the LCMA	None – Status Quo: Existing regulations apply – Open access to all with a Federal lobster permit	Yes – Qualification Required – Future participation based on 2001-2003 fishing history	Yes – Qualification Required – Future participation based on 2001-2003 fishing history
ALLOCATION Criteria for Future Trap allocation	Status Quo - Fish up to 800 traps – subject to existing Most Restrictive Rule.	Yes – Qualification Required –Based on 2001-2003 fishing history	None - Status Quo: Up to 800 traps – Subject to more restrictive state trap limits

Overview

From 2002-2003, scientific findings showed that a significant downturn in the American lobster stock within LCMA 2 was taking place. In response, the Commission began to formulate, through various addenda, effort control measures on an emergency basis.[53] While some of these measures have already been implemented by the states, the Commission's state-level program overall has continued to evolve through various addenda as conditions within the fishery have become more clearly understood (see Table 2.1). Further, as discussed in Chapter 1, the most recent peer-reviewed stock assessment for American lobster reconfirmed that LCMA 2's stock is overfished, but overfishing is not occurring, as reflected in its conclusions regarding the SNE biological stock unit, and the TC subsequently declared that the SNE stock is experiencing recruitment failure due to a combination of environmental factors and continued fishing mortality.

The most recent state-level effort control plan for LCMA 2 is the Commission's second attempt at an LCMA 2 limited access program. The Commission's first attempt was set forth in Addendum IV, passed in December 2003. Ultimately, however, Addendum IV's program proved too difficult to implement and was thought to potentially increase effort in LCMA 2. Accordingly, the Commission quickly withdrew the program in February 2005 before it could be implemented.[54]

During this time, conditions in LCMA 2 had deteriorated to the point that effort reduction was already taking place naturally. In other words, the recent lobster downturn had forced so many boats out of business, that fishing effort had already been naturally reduced by simple market forces. Accordingly, lobster fishers surmised that if a revised LCMA 2 limited access program could capture the attrition that

would be allowed, perhaps even a presumptive part of the documentary proof, but likely not the exclusive proof. Accordingly, the alternative is not eliminated for this reason, in deference to the Commission and for comparative purposes. Documenting historical participation is discussed further in Chapter 4, Section 4.1.

[53] The Commission increased the LCMA 2 legal minimum size by emergency action in February 2003. See Addendum VII (Appendix 2), Section 2.0 (ASMFC 2005).

[54] The Commission withdrew the Plan in Addendum VI. See Addendum VI (Appendix 1), Section 1.0 (ASMFC 2004b).

recently occurred in the industry (i.e., from 2001 through 2003), then no further effort reductions would be needed. The Commission agreed and implemented such a limited access program in Addendum VII in November, 2005.

Similar to the OCC limited access program, LCMA 2's effort control program established a two-step entry process: first, qualify individuals into the LCMA according to their fishing history in the LCMA; and second, allocate traps to the qualified individuals based upon the number of traps they historically fished. Also similar to the OCC limited access program, LCMA 2's effort control program provides for the use of appeals. In fact, the Commission suggested an additional appeal in LCMA 2 – i.e., an appeal based upon hardship – that it did not suggest in its OCC program. Because appeals can be added to or removed from the limited access alternatives without significantly changing the underlying alternatives, this section discusses the use of appeals separate from the underlying alternatives.

The specifics of the Commission's LCMA 2 plan, and its alternatives, are set forth below.

Alternative 1 – No Action

Under this alternative, no Federal limited access program would be enacted in LCMA 2. As such, American lobster in the LCMA 2 would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. The fishery would remain open access to all who hold a Federal lobster permit and individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule).

Any vessel issued an American lobster limited access permit fishing with traps would continue to annually declare to NMFS in which lobster management area or LCMAs the vessel intends to fish. Once a vessel has declared the management area(s), no changes may be made for the remainder of the fishing year unless a vessel becomes a replacement for another qualified vessel. Under existing regulations (50 CFR Sec. 697.4(a)(7)), all qualified vessels may elect to fish with traps in currently "open access" LCMAs 2 and the OCC. In addition, vessels qualified to fish in "closed access" LCMAs 1, 3, 4 and 5 may continue to designate those LCMAs and trap allocations for those LCMAs would be based according to each LCMA's requirements.

Alternative 2 – Commission Alternative (Preferred Alternative)

Qualification Scheme

According to Addendum VII, the following measures would be implemented to control effort in LCMA 2:

1. There will be a moratorium on new permits for commercial fishing of lobster traps.

2. No person shall land lobster in any state taken from pots in LCMA 2 unless that person has been issued an LCMA 2 pot allocations by their home state.

3. Individuals can qualify for access in LCMA 2 according to their documented LCMA 2 landings history from 2001-2003. If an LCMA 2 fisher had been incapable of fishing during the 2001-2003 fishing years, that individual could apply for a hardship that would allow them to use landings from 1999 and 2000 as the basis for qualification. The landings must have occurred in a state adjacent to LCMA 2, which shall be considered to be limited to Massachusetts, Rhode Island, Connecticut and/or New York.

Rationale

In choosing the above dates, the Commission sought to cap fishing effort in LCMA 2 in order to capture the attrition that had recently occurred (2001-2003) and to prevent speculation. In so doing, the Commission's rationale was similar, but not identical, to the rationale it employed in setting the access dates for the LCMA OCC discussed earlier in this FEIS section. Similar to the OCC Limited Access Program, the Commission wanted to grant access to those with past trap fishing history in LCMA 2, while excluding speculators and/or individuals who might have a history of LCMA 2 permit designations, but little, if any, actual fishing history there. Unlike the LCMA OCC access dates, however, the LCMA 2 dates were chosen in order to capture the attrition that occurred in the fishery during the downturn years in 2001-2003. In certain limited circumstances, individuals could use different qualifying years – i.e., 1999 and 2000 – but the Commission noted that 1999 and 2000 were not downturn years and fishing effort remained elevated. Therefore, excessive reliance on 1999 and 2000 fishing histories could subvert the Plan's underlying premise - i.e., to capture the attrition that had recently occurred – and undermine the effectiveness of the LCMA 2 Plan. Accordingly, the Commission limited the use of the 1999-2000 dates only to those who failed to qualify using the 2001-2003 time periods due to documented medical issues or military service.[55] The Commission also chose to restrict the landings to ports adjacent to LCMA 2. Specifically, the Commission determined that physical, geographical and landings data, as well as anecdotal information suggested that LCMA 2 fishers historically landed in adjacent ports. In limiting landings to LCMA 2 ports, the Commission sought to curb speculation where individuals would designate LCMA 2 on their permit, but never fish there. Section 3.3.1 of this FEIS discusses how a person's fishing history on paper might not accurately reflect the reality of how it existed on the water.

NMFS's rationale in preferring this alternative encompasses and extends beyond the Commission's rationale. That is, NMFS agrees with the Commission that its qualification criteria will capture fishing effort as it existed in 2001-2003, as well as provide a disincentive to speculative practices. Of great importance, however, is that Federal adoption of these dates will help avoid potential state-federal regulatory disconnects that would result if NMFS were to use different regulatory criteria than the states. The potential for regulatory disconnects to undermine lobster management is discussed throughout this FEIS, but particularly in Sections 3.1 and 4.1.

Allocation Scheme

Individual trap allocations will be established in accordance with the following measures:

1. Trap allocations for use in LCMA 2 shall be assigned based on the highest annual level of Effective Traps Fished during 2001, 2002, and 2003.

2. Effective Traps Fished shall be the lower value of the maximum number of traps reported fished for a given year compared to the predicted number of traps that is required to catch the reported poundage of lobsters for a given year during 2001, 2002, and 2003. "Predicted Traps Fished" are calculated for 2001-2003 from an individual's total landings in each of those years using a regression relationship for LCMA 2.

3. Predicted Traps Fished and a state's most accurate Calculated or Reported Traps Fished is compared for each year and the lower value would be the "Effective Traps Fished" values.

[55] Unfortunately, information suggests that the involved states may have interpreted aspects of Addendum VII differently, so rote adherence to Addendum VII may not necessarily result in substantially identical criteria even among jurisdictions that use Addendum VII as a regulatory template. NMFS's dilemma in this regard is discussed in greater detail in Chapters 1, 3, and 4 of this document. The Commission's Addendum VII plan, including LCMA 2 regression curves, may be found in Appendix 2 or at www.asmfc.org under Interstate Fisheries Management, then clicking "American lobster."

4. Trap allocation is the highest value of the three annual "Effective Traps Fished" values.

Rationale

The rationale underlying the use of "effective traps fished" is similar to the rationale used in the OCC limited access program. In short, the Commission found that permit designations and trap tag orders might not accurately reflect actual fishing effort in LCMA 2 due to practices such as speculation and holding of ground. These practices were discussed in greater detail in the earlier discussion of the Commission's OCC alternative, above. In the LCMA 2 Program, the Commission determined that actual lobster landings better reflected the amount of traps fished.[56]

The Commission tested its Program's premise scientifically and found that the regression formula used to calculate effective traps fished suggested good correlation between the theory and data. This regression analysis was vetted through intensive scientific debate and peer review. Ultimately, the Program was determined to be scientifically sound, although it was noted that the criteria favored full-time lobster fishers. The Commission noted this point, but made the policy determination to use the criteria nevertheless. The Commission's regression curves can be found on page 11 of Addendum VII. A technical review of the Commission's regression formula can be found in Appendix 7.

NMFS' rationale in preferring this alternative extends beyond the Commission's rationale. That is, NMFS agrees with the Commission that its allocation criteria better reflects actual fishing effort. Also of great importance, however, is that Federal adoption of the Commission's allocation criteria will help avoid potential state-federal regulatory disconnects that would result if NMFS were to use different regulatory criteria than the states. The potential for regulatory disconnects to undermine lobster management is discussed throughout this FEIS, but particularly in Sections 3.1 and 4.1.

Alternative 3 – Qualify Only

Qualification Scheme

Individual applicants would qualify to fish according to the criteria set forth under Alternative 2, *Commission Plan*: individuals can qualify for access into LCMA 2 according to their documented LCMA 2 landings history from 2001-2003. If an LCMA 2 fisher had been incapable of fishing during the 2001-2003 fishing years, then that individual could apply for a hardship that would allow them to use landings from 1999 and 2000 as the basis for qualification.

Allocation Scheme

There is no new allocation scheme enacted under this alternative. As such, American Lobster in the LCMA 2 would continue to be managed in Federal waters under trap limit provisions of existing regulations under the Atlantic Coastal Act. Qualified individuals would be able to fish up to 800 traps (subject to the existing Most Restrictive Rule)[57].

[56] See Addendum VII (Appendix 2), which states that total landings must be used because existing landings data does not distinguish the percentage caught in LCMA 2 versus other LCMAs. "…a permit holder's total landings during the time period constitutes the best available information across all management jurisdictions and are the authorized basis for meeting the purposes of this plan."

[57] See Chapter 4.1 of this FEIS and Addendum XII, Section 4.2 for a detailed description of the Most Restrictive Rule.

Appeals

As previously stated in Section 2.1.1 – OCC Alternatives, NMFS identifies three types of appeals in the FEIS. They are as follows:

- Clerical Appeal – This appeal is designed to remedy situations where NMFS has erred in its decision due to a simple mathematical or clerical error. NMFS had an identical appeal in its rule that limited access to Lobster Conservation Management LCMAs 3, 4 and 5, and found that such an appeal worked well.
- Medical/Military Appeal —This appeal is designed to provide applicants extra qualifying years if they were unable to fish during the original qualifying years due to medical incapacity or military service. The concept for this appeal originated with the industry-based LCMA 2 Lobster Conservation Management Team and was debated and approved for LCMA 2 by the Commission's Lobster Board. It was only recommended for LCMA 2.
- Director's Appeal – This appeal is designed to synchronize the trap allocations of permit holders with both state and Federal lobster permits. It would only be available to individuals who have already been qualified and/or allocated by a state and the state would have to sponsor the application and indicate why approval is in the overall interests of the Commission's Lobster Plan.

NMFS is attempting to seek a balance in proposing these three appeals. On one hand, appeals create unknown variables and potential loopholes that can undermine the purpose and effectiveness of the rule. On the other hand, however, the proposed rule is so complex that the potential for disconnects between state and Federal decision making is perhaps an even greater threat to the effectiveness of the rule. The specific rationale for each appeal is discussed below.

1. Clerical Appeal

This appeal would allow NMFS to correct clerical and mathematical errors that sometime inadvertently occur when applications are processed. It is not an appeal on the merits and would involve no analysis of the decision maker's judgment. Accordingly, the appeal would not involve excessive agency resources to process. NMFS used an identical appeal with identical criteria to great success in its LCMA 3, 4 and 5 Limited Access Program. The rationale for a clerical appeal is grounded in common sense and fair play.

2. Hardship Appeal

This appeal would allow LCMA 2 fishers to use two additional years to qualify for LCMA 2 access if they could document that medical incapacity or military service prevented them from fishing from 2001 – 2003. Such a hardship appeal concerns NMFS because it creates a potentially large loophole. NMFS does not have the resources to conduct a hearing with cross-examination or to hire medical or military experts of its own to test the veracity of hardship claims. If an appellant can produce a seemingly legitimate record documenting the hardship, NMFS will likely have to grant the appellant all benefits of the doubt and allow the appeal. The states, however, faced the same potential loopholes, yet found that applicants did not abuse the process.

The Commission's rationale for including an LCMA 2 hardship appeal is set forth in Addendum VII, and makes sense. Equally important, however, is that even if the rationale was weak, the simple fact remains that the states have implemented hardship appeals and the potential for regulatory disconnects would increase if NMFS were not to implement a similar program. This is not to suggest that NMFS' proposed hardship appeal will eliminate regulatory disconnects, or that NMFS could even design a uniform

hardship appeal that is the same as the different states' hardship appeals. In fact, as the FEIS notes, the states' programs themselves are not all the same. But in attempting to generally match the hardship appeals already implemented by the states, NMFS expects to substantially reduce the potential state-Federal disconnect, which NMFS views as critical to the overall success of the Lobster Plan.

3. Director's Appeal

This appeal would allow states to petition NMFS for comparable trap allocations on behalf of LCMA 2 applicants denied by NMFS. The appeal would only be available to residents for whom a state has already granted access. The state would be required to explain how NMFS' approval of the appeal would advance the interests of the Commission's Lobster Plan.

The rationale for this appeal is grounded in the desire to remedy regulatory disconnects. As noted throughout the FEIS, the potential for regulatory disconnects is significant. NMFS knows that states have already made multiple separate decisions on qualification, allocation, and at least in some instances, trap transfers for the state portion of dually permitted fishers. NMFS is therefore faced with the daunting task of making these same decisions and reaching identical results based upon Federal criteria that attempts to mirror the state criteria, which themselves contain slight differences. While NMFS expects to achieve identical results for the vast majority of dually permitted fishers, it would be unreasonable to expect perfect congruence in such circumstances. The Director's Appeal will help prevent the potential damage that such incongruence could create.

Conclusion

Except for the No Action alternative, all of the alternatives identified above appear to meet the criteria established under Section 2.1, above, and thus are being carried forward for detailed review. In particular, all of the alternatives identified above, except for No Action, are consistent with the ISFMP for American lobster and compatible with its goals. Alternative 2 is consistent with the Commission ISFMP on its face as it seeks to implement the OCC Limited Access Plan verbatim[58], while Alternative 3 implements the first step of the OCC Limited Access Plan (i.e., qualification).

[58] Again, we note that Alternative 2, the *Commission Alternative*, potentially discriminates against permit holders from other states insofar as it applies Massachusetts standards to all Federal permit holders (a possible *National Standard* violation under the Magnuson-Stevens Act). NMFS has repeatedly stated in the past that Federal lobster regulations do not differentiate based upon a person's state citizenship and that its objective would be to identify a "one standard" approach that would comply with the national Standards and at the same time be consistent with the Lobster ISFMP.[58] To the extent NMFS publishes a Proposed Rule based upon Alternative 2, one might expect that Massachusetts documentation would be allowed, perhaps even a presumptive part of the documentary proof, but likely not the exclusive proof. Accordingly, the alternative is not eliminated for this reason, in deference to the Commission and for comparative purposes.

2.1.3 Individual Transferable Trap (ITT) Program Alternatives

Table 2.4 - Conditions Applied to Individual Transferable Trap (ITT) Program Alternatives

	Alternative 1 – No Action	Alternative 2 – Commission	Alternative 3 – LCMA 3 Only	Alternative 4 – Optional Trap Transferability Preferred)
TRANSFER CONDITIONS	None – Status Quo: No transfers allowed – Existing regulations apply	Yes – Transfers allowed – AOC and LCMA 2, up to a 800 trap cap; LCMA 3 – up to a 2,000 trap cap	Yes – Transfers allowed, but only in LCMA 3 with up to a 2,000 trap cap	Federal permit holders must agree to more restrictive of Federal or state trap allocation
CONSERVATION "TAX"	None – Status Quo: No conservation tax applied to transfers	Yes – AOC, LCMA 2, and LCMA 3 have 10% tax on all transfers	Yes – LCMA 3 10% tax on all transfers	Yes – AOC, LCMA 2, and LCMA 3 have 10% tax on all transfers

Background

Effort control plans approved or proposed by the Commission and implemented by various states and NMFS to date all have one thing in common: they use documented fishing history and fishing performance to allocate the amount of traps that a permit holder can fish within a given LCMA.[59] As the number of these plans has increased, the need to apply uniform criteria that will allow for the consistent assignment of fishing histories across state and Federal programs has been recognized by both state and Federal regulators.

With Addendum XII, the Commission approved a number of unifying measures that will bring various state practices for assigning fishing history into alignment with existing Federal practice. In so doing, a number of fundamental management principles that are key to the success of overall lobster fishery have been firmly established. These principles include the following:

- A lobster permit and its history cannot be separated.
- Fishing histories accumulated under dual state and Federal permits cannot be treated as separate histories and stacked for the purposes of qualification and allocation. A single fishing entity is considered to have established a single lobster fishing history even if that person is a dual permit holder fishing under a state and federal fishing permit.
- Lobster history accumulated under dual state/Federal permits cannot be divided and apportioned between the permits. Because records are imprecise (and in most cases, do not exist) to determine which part of a dual permit holder's catch was caught in state waters and which part was caught

[59] Through various addenda to the interstate fishery management plan for American lobster, history-based effort control plans based on fishery performance have been enacted by NMFS (LCMAs 1, 3, 4, and 5) and states (MA in Outer Cape Cod; NY and CT for LCMA 6; and MA, RI, CT,& NY for LCMA 2).

in the EEZ, a dual permit holders' fishing history will considered indivisible so long as some part of the catch was caught in both state and Federal waters. If a dual permit holder "splits" his/her permits by transferring either the Federal or state permit to another entity, then the entire fishing history is to remain with the Federal permit for the purposes of the initial qualification and allocation decision. [Alternatively, a dual permit holder who permanently relinquishes or surrenders his/her Federal lobster permit can allow his/her fishing history to be transferred to his/her state permit.

The proposed effort control measures, discussed below, rely on these established principles to meet the conservation goals for the lobster fishery.

Program Overview

As proposed, the Individual Transferable Trap (ITT) program for Federal permit holders in the American lobster fishery establishes fishing privileges for U.S. lobster fishers heretofore unseen in a Federal lobster management program. Under this program, participants are allowed to "transfer" (i.e., sell) blocks of traps to one another after their initial qualification and allocation into the fishery. By allowing fishers to buy and sell lobster traps, the ITT program is meant to provide permit holders with opportunities to enhance efficiency or respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery.

ITT Programs have the potential to reduce effort (i.e., fishing power, often described in number of traps fished) in the fishery through the use of a conservation "tax" (discussed below). As such, the ITT Program would have some biological benefit to lobster. In the long run, however, the primary purpose of a transferable trap program is to improve the overall economic efficiency of the lobster industry (ASMFC 2002b).

To date, a number of state-level trap transfer programs have been implemented within certain LCMAs, beginning with the LCMA OCC in 2002, followed by LCMA 3 in 2003 and finally LCMA 2 in 2005.[60] These plans, initially presented through the Commission process, and alternatives to them, are set forth in more detail below.

ITT Alternatives

Common to all of the ITT alternatives are provisions that would:

- Reduce the seller's trap allocation in all LCMA's by the amount of the traps transferred;
- Establish a conservation "tax" that would require the removal of a percentage of traps with each transfer for conservation purposes.[61]
- Establish a database to track the transfer of traps. This tracking system would be centrally developed and maintained. All jurisdictions would have access to this data in accommodation with states' confidentiality requirements. This database would allow managers to track transfers across jurisdictions (e.g., state-to-state, or any transfer involving a dual permit holder);
- Prohibit the leasing of traps; and

[60] The OCC LCMA program was proposed in Addendum III in February 2002, followed by LCMA 3 program in Addendum IV in December 2003 and finally the LCMA 2 in Addendum VII in November 2005. Transferability taxes are proposed in Addendum III (for the OCC LCMA), Addenda IV and V (for LCMA 3), Addendum IX (for LCMA 2), and Addendum XII. Addendum VII does not establish a transferability program so much as it suggests that the states establish such a program at some point in the future (see Addendum VII, Section 4.2.1.3, November 2005).

[61] Transferability taxes are proposed in Addenda III and XIII (for the OCC LCMA), Addenda IV, V and XIV (for LCMA 3), Addenda IV, VII, IX (for LCMA 2), and Addendum XII.

- Prohibit the development of monopolies by limiting the number of traps that can be transferred to a concentrated group of individuals.

Details specific to each of the ITT alternatives are provided below.

Alternative 1 – No Action

Under this alternative, no Federal trap transfer program would be implemented. State-level trap transfer programs, currently in LCMAs 2 and OCC, would continue**.**

Alternative 2 – Commission Alternative

LCMA OCC

Under this program, LCMA OCC qualifiers (i.e., those qualified to fish in the LCMA OCC under a limited access fishery) may buy and sell traps subject to a 10 percent transfer tax and maximum trap cap of 800 traps.[62] Trap transfers may only occur between qualifiers, i.e., non-qualifiers could not buy into the LCMA OCC by simple purchase of OCC traps.

LCMA 2

The LCMA 2 trap transferability program is contemplated in Addendum IV and set forth in slightly greater detail in Addendum VII. Specifically, Addendum IV does not establish an LCMA 2 transferability program so much as it calls upon the states to develop one in the future. Nor does Addendum VII establish an LCMA 2 transferability program, although it does suggest implementation of a 10 percent transfer tax and trap cap of 800 traps for the program that "…is currently being developed."

LCMA 3

Under this program, those who qualify to fish in limited-access LCMA 3 may buy and sell traps to other LCMA 3 qualifiers, subject to a 10 percent tax on partial (less than the full trap allotment) and full business transfers (full trap allotment)[63]. Total trap effort is capped at 2,000 traps per permit. Finally, this alternative also includes details of an anti-trust provision that seeks to prevent the consolidation of effort by prohibiting businesses from owning more than five LCMA 3 permits, although any business owning more than five permits before December 2003 is exempt from this prohibition. This alternative has been changed from the DEIS insofar as the Commission changed the LCMA 3 partial transfer tax in its Lobster Plan from 20 percent to 10 percent in Addendum XIX.

Alternative 3 – ITT for LCMA 3 Only

This alternative limits the transfer of traps to within LCMA 3 Federal waters and as such would be administered by NMFS. Traps could only be transferred to individuals who have already qualified for LCMA 3 and would be subject to a 10 percent conservation tax. All transfers would have to be in increments of 10 traps. Leasing of traps would be prohibited.

[62] The details of the OCC LCMA trap transfer program were first presented by the Commission under Addendum III and further refined under Addendum XIII to Amendment 3 of the ISFMP.

[63] The details of the LCMA 3 trap transfer program were first presented by the Commission under Addenda IV and V to Amendment 3 of the ISFMP, later in far more detail under Addendum XIV.

Alternative 4 – ITT as an Optional Program (Preferred Alternative)

This alternative would make trap transferability available as an optional program to federal permit holders. As such, permit holders would not be obligated to take part in the transferability program, but could choose to do so if they so desired. In so choosing, permit holders would be obligated to adhere to the following program parameters:

- Permit holders would have the option to elect into the ITT Program. In order to opt in, however, dual permit holders (i.e., both a federal and state permit), with different state and federal trap allocations, must agree that the more restrictive allocation shall govern and become the official uniform allocation.
- Transfers can only involve federally allocated traps that have been allocated into LCMA 2, 3 or OCC.[64]
- A seller's trap allocation in all LCMAs shall be debited by the amount of LCMA 2, 3 or OCC trap allocation sold.
- LCMA 1 fishers may purchase trap allocation from LCMA 2, 3 or OCC up to the 800 trap cap existing in LCMA 1. However, because there is no LCMA 1 trap allocation to debit, any individuals selling LCMA 2, 3 or 4 allocations will forfeit any right to fish with traps in LCMA 1 in the future.[65]
- Any Federal lobster permit holder may purchase transferable traps from LCMAs 2, 3, or the OCC regardless of whether the buyer's permit qualified into the trap fishery in those LCMAs. The purchased allocation must remain in the LCMA for which the traps were qualified.
- To the extent that a transferred trap had a history of fishing in multiple LCMAs and thus is part of a multi-LCMA allocation, the purchaser of that trap may declare into any and all LCMAs for which the traps have qualified.[66]

- Buyers of transferred traps shall be subject to a 10 percent conservation tax so that at the completion of the sale, 10 percent of traps transferred shall be debited from the buyer's new allocation. This 10% debiting does not apply to trap allocation that are transferred as part of a full-business transfer (i.e., allocation that is transferred incidental to the transferring of a Federal lobster permit). Buyers of transferred traps can only purchase only up to the applicable trap cap in any involved LCMA. The trap cap in OCC LCMA is 800 traps. The trap cap in LCMA 2 is 800 traps and the trap cap in LCMA 3 is 1,945 traps, consistent with current Federal regulations.

- Buyers and sellers must document their proposed transfer in writing and apply to NMFS to approve the transfer by a certain date every year, likely in autumn. The states and NMFS shall have some period of time after the due date to approve or deny the applications, e.g., 90 days. Approved transfer applications will not become effective until the start of the next fishing year.

- Buyer's and seller's proposed allocation transfer document must reflect any trap allocation cuts that either have or will take place during the fishing year in which the agreement is made. In so doing, buyer's and seller's initial pre-transfer allocations shall reflect the trap cut so that the allocation transfer will take place on post-cut trap allocations.

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[64] For dual permit holders, the federally allocated traps would likely also be part of a state allocation. NMFS Fisheries recognizes this fact and transfer of such traps would remain permissible. Transfer of state-only traps to Federal permit holders, however, would not be allowed.
[65] See Addendum XII, Section 4.4 for the Commission's justification for removal of LCMA 1 trap access rights from the seller. Addendum XII is attached to this FEIS as Appendix 3.
[66] This differs from NMFS' originally proposed measure mandating buyer to choose a single area. That original concept was proposed by the Commission in Addendum XII, but the Commission has since changed direction to the presently proposed concept in Addendum XXI and NMFS has responded in kind.

- NMFS will monitor the progress of the Trap Tag Database and will not implement its ITT Program until the agency believes the database is able to track transfers. NMFS will notify the public by Federal Register of the ITT implementation date.

Rationale

The purpose of this alternative is to minimize the potential for regulatory disconnects whilst achieving the Commission's goal of providing economic flexibility and efficiency to lobster permit holders. As discussed throughout this FEIS, minimizing regulatory disconnects is of paramount importance. This alternative seeks to minimize regulatory disconnects in four ways.

First, the alternative minimizes regulatory disconnects by being substantially identical to Alternative 2-Commission Alternative. As such, this alternative uses the same accounting protocols used by the states. In fact, this alternative has been altered slightly since the DEIS specifically to keep pace with Commission changes to the Plan to ensure regulatory consistency between state and federal regulation. See FEIS Section 2.0 – Other Relevant Addenda for discussion of Commission Plan changes to transfer tax, maintenance of multi-LCMA trap history, and LCMA trap caps.

The second way this alternative seeks to minimize regulatory disconnects is its synchronization provision. Specifically, the alternative requires dual permit holders to synchronize their state and federal trap allocations to the lower allocation before transferring traps. Participation in the Program, however, is voluntary; dual permit holders with disconnected allocations could choose not to join and thus could maintain their differing allocations (albeit subject to the Most Restrictive Rule discussed in Section 4.1). In this way, the problems associated with disconnected state and federal trap allocations are contained to the dual permit holder and would not spread to other permit holders and become exacerbated with successive transfers.

The third way this alternative minimizes regulatory disconnects is by prohibiting permit holders from maintaining an LCMA 1 trap designation if they sell traps. LCMA 1 has a trap cap, not a trap allocation, and therefore, any LCMA 1 qualifier may fish up to 800 traps in LCMA 1. Consequently, there is no LCMA 1 allocation to debit if an LCMA 1 participant sold trap allocation from another LCMA.[67] Such a result violates the provisions of Addendum XII and would cause effort proliferation.[68] This scenario could be resolved by converting the 800 trap cap in LCMA 1 to an 800 trap allocation. The Commission, however, has not asked NMFS to do so and Maine – the state with the most LCMA 1 permits - has signaled a reluctance to issue corresponding regulations in the state at this time. As a result, any unilateral Federal attempt to convert the LCMA 1 trap cap into an allocation would be inconsistent with the Commission Plan and create regulatory disconnects with the state of Maine.

Although full business transfers are not part of the Commission's ITT Program, the Commission's proposed full business transfer tax has become linked to its ITT Program. This FEIS alternative, however, does not include the recommended 10 percent transfer tax on full business transfers. LCMA 1

[67] Lobster fishers often fish in multiple LCMAs and, as a result, may be able to qualify in multiple LCMAs. For example, a person who qualified into LCMA 1 may also have qualified and received a trap allocation in LCMA 3. These multi-LCMA trap allocations, however, are not cumulative. That is, a permit holder with an 800 traps may have fished the all 800 in LCMA 1 for most of the year, and then 300 out of the 800 traps in LCMA 3 for part of the year, but at no time did that person ever fish 1,100 traps. Therefore, to allow such a permit holder to transfer those 300 LCMA 3 traps without debiting the 800 traps fished in LCMA 1, would result in an effort increase on the lobster stock in the amount of 300 traps

[68] Section 3.2 of Addendum XII states: Principles Governing Transfers of Fishing History Trap allocations are a reflection of fishing history. Just as a permit holder in the past could not double his traps fished to 1,600 simply because he seasonally fished 800 traps in LCMA 2 and 800 traps in the OCC, neither should that person now be able to gain the equivalent of double counting this history by treating transferable trap allocations in separate LCMAs as independent and cumulative. When any individual transfers (sells) trap allocations from any LCMA, his trap allocation in all other LCMAs is be reduced by that same number.

is by far the largest lobster area both in terms of participants and business transfers conducted. But LCMA 1 has a trap cap, not a trap allocation and there is presently no feasible way to debit LCMA 1 traps. Accordingly, NMFS rejects a tax on full business transfers for the same reasons it rejects allowing permit holders to maintain their LCMA 1 designation after transferring traps in its ITT Program.

The fourth way this alternative minimizes regulatory disconnects involves the timing of the ITT Program. Specifically, the alternative allows time for the ITT market to develop, allowing buyers and sellers time to meet and conduct business. The alternative also gives the states and NMFS time at the close of the ITT period to review and approve trap allocations of dual permit holders. This time will allow agencies to coordinate through the Trap Tag Database to reconcile any differential trap allocations and thus minimize allocation disconnects before the trap transfer becomes effective at the start of the new fishing season.

The timing also allows for better harmony with the Commission's Lobster Plan because it takes into consideration the potential for the Commission's Addendum XVIII trap cuts. The conundrum for NMFS is that the buyer's and seller's proposed transfer agreement would likely happen in the early in a fishing year (summer), but the result of the agreement – i.e, the allocation transfer – would not be effective until the following spring. During that inter-period, however, Commission trap cuts could occur that so change the buyer's and seller's allocation numbers as to render the agreement impossible to implement. Even if the cut allocation remained sufficient to complete the transaction, the potential for confusion would be so great as to have a chilling effect on transactions. NMFS' proposal to account for all trap cuts in the initial pre-transfer allocations provides for a simple accounting mechanism so that buyers and sellers can expect certainty in the outcome.

The timing of the first year of ITT will depend on the status of the trap tag database that is under development. Members of the Commission and industry have been steadfast in their belief that a properly functioning database is fundamental to the ITT Program. At present, the database is scheduled for a first round of testing in December 2013. As such, the database is not expected to be operational until sometime in 2014. This alternative proposes that NMFS will delay implanting its ITT Program until after the database has been tested and confirmed to be operational. In this way, NMFS would not encourage lobster businesses to engage in transactions that could be lost by an incomplete and poorly functioning computer program. NMFS would notify the public of its ITT Program's start date in a Federal Register notice.

The DEIS sought public comment on this alternative generally, and specifically on whether any Federal permit holder should be allowed to purchase traps allocated into an LCMA versus only allowing already qualified permit holders to transfer allocated traps.[69] NMFS received numerous comments in support of allowing any Federal permit holder to buy allocated traps and thus buy into an LCMA. Specifically, allowing so would help mitigate the impact of not qualifying into an LCMA, as well as allow better opportunities to newer, younger lobster fishers. This option would allow any Federal permit holder to purchase allocated traps up to the LCMA trap limits. To the extent an entity owned multiple Federal lobster permits, that entity could potentially have a greater impact on the ITT market hypothetically buying and selling in bulk. Market control, however, is not expected to occur. Analysis suggests that the great majority of qualifiers with ITT allocations in LCMA 2, 3 and OCC are and will be single Federal permit businesses.[70] Nor is effort shift expected to occur: current Federal regulations allow anyone may

[69] The DEIS sought general comments on its ITT alternatives, but specifically sought comments on the following ITT issues: Medical Appeals; ITT participatory prerequisites; Minimum Traps per Transfer; Annual Transfer Deadlines, Revocation of permits with less than 50 traps; Trap Haul-Out Requirements. DEIS, Section 4.4.2 – Request For Public Comment - #4, page 4-61.

[70] In 2013, the vast majority of Federal lobster permit holders had only one Federal lobster permit. With respect to areas with ITT, 14 individuals had two Area 2 permits, less than four individuals had three Area 2 permits, and no one had more than three. In Area 3, eight individuals had two Area 3 permits and three individuals had between three and eleven Area 3 permits. For the Outer Cape Area, four individuals

purchase an unlimited number of lobster permits and all federal lobster permits may presently opt to fish with traps in LCMA 2 and OCC with traps. In other words, the status quo is unfettered trap fishing access into LCMA 2 and OCC up to the trap cap; ITT would not exacerbate this. The Commission's Plan attempts to address this issue through the aggregate trap limits adopted for LCMA 2 (Addendum XXI) and LCMA 3 (Addendum XXII) as discussed previously in the chapter under *Other Relevant Addenda*. NMFS is analyzing these addenda in a separate rulemaking action. See Proposed Rule Response to Comment Nos. 10 and 12 (78 FR 35217).

Conclusion

The alternatives identified present a range of potential alternatives to the No Action Alternative, where no transferability would be allowed, to Alternative 3, which would allow transferability only in LCMA 3, to Alternatives 2, and 4, which would allow transferability in LCMAs 2, 3 and OCC. Except for No Action, all of the alternatives identified above appear to meet the criteria established under Section 2.1, above, and thus are being carried forward for detailed review. In particular, all of the alternatives identified above appear to achieve some measure of compatibility with the ISFMP for American lobster and its goals.

had two OCC permits and no one had more than two OCC permits. Four individuals own between 12 and 27 Federal lobster permits, but those permits are non-trap permits (NMFS permit data, 2013).

Chapter 3 – Affected Environment

AFFECTED ENVIRONMENT CHAPTER 3

3.0 INTRODUCTION

Consistent with Section 1502.15 of the CEQ NEPA regulations (40 CFR Part 1500), this chapter describes key components of the environment affected by the effort control management alternatives for American Lobster.

NMFS is proposing to adopt management measures for the American Lobster fishery that on the one hand aim to improve economic efficiency within the fishery, but that ultimately also address concerns about the level of fishing effort in the fishery and the potentially adverse effects that too much effort can have on biological resources (not only American Lobster, but protected species, by-catch species and bait fish). The impact of these management measures is therefore potentially broad reaching and reflects the complex interactions between regulatory actions, their social and economic implications, and connected environmental outcomes. All of these topics are discussed in turn below.

Six major components are examined in detail:

- Section 3.1 discusses the current regulatory setting for American Lobster;
- Section 3.2 describes the economic environment of the potentially affected population;
- Section 3.3 describes the social aspects of the fishing communities potentially affected by the proposed American Lobster management measures;
- Section 3.4 describes the status of the American Lobster fishery, including its biological and physical characteristics;
- Section 3.5 describes protected species that may be affected by elements of the proposed American Lobster management measures;
- Section 3.6 describes other potentially affected commercial fish species, including by-catch and bait fish species, and;

For purposes of this assessment, areas that may be directly or indirectly affected by the alternatives under evaluation include all of the LCMAs within the American Lobster fishery, encompassing inshore and offshore coastal areas from Maine to North Carolina.

The resources evaluated include those species and habitats that could be directly or indirectly affected by the proposed management measures. In addition to the American Lobster, other biological resources evaluated for this document include protected or sensitive species and habitats such as marine mammals, sea turtles, coastal and marine birds, fisheries resources, federally listed threatened or endangered species, and EFH. Determining which habitats and species occur in the project area was accomplished through literature reviews and coordination with appropriate NMFS staff and other knowledgeable experts.

The DEIS was published in 2010 and 2007 data, the best available at the time, was used as the basis for the analysis of the number of qualifiers under each alternative as well as for much of the background of

the lobster fishery and fishing communities. This FEIS uses 2012 data to update the number of qualifiers under each alternative and to update the affected environment and other aspects of the background and analysis. Further, the background and recent changes to the Commission's Lobster Plan have been updated to reflect the issues and actions taken by the Commission since the publication of the DEIS. Additionally, the recruitment failure of the SNE lobster stock is discussed in detail and more information on the effects to lobster due to climate change is added. Some information, such as the social and cultural characteristics of the lobster fishery, are based on one-time analyses that have not been updated but add value to the analysis.

3.1 REGULATORY SETTING FOR AMERICAN LOBSTER

From a Federal perspective, lobster management has an unusual construct in that management actions largely emerge through a state-initiated Commission process in which Federal managers act in coordination with the Commission, rather than through unilateral action such as is seen in many other areas of fishery management. On the one hand, this construct is a practical response to the state/Federal jurisdictional realities behind lobster management, since lobster harvests occur primarily within state waters (see also discussion in Section 1.0); on the other hand, it also serves to spotlight the differences in jurisdictional perspectives: though a broad view of the needs of the overall fishery may suggest one type of action from a Federal perspective, NMFS may reject that option because it is deemed to be inconsistent with the National Standards as articulated under the MSA. Furthermore, as discussed in Chapter 1, when implementing regulations, it is the obligation of Federal lobster managers to ensure that those regulations are compatible with the Commission's ISFMP for lobster. Because management interests can and often do diverge however, not only between the states and the Federal lobster managers but also between the states themselves, finding compatible regulatory approaches to lobster management can be challenging. These challenges are explained in greater detail below.

The Commission's current Lobster Interstate Management Plan was first adopted in December 1997 under Amendment 3 to the ISFMP (see also discussion in Section 1). Amendment 3 established the framework for area management, which in addition to establishing the seven LCMAs, also established industry-based teams, known as Lobster Conservation Management Teams (LCMTs), that were encouraged to develop management programs to suit the needs of the LCMAs while meeting the stock rebuilding objectives established in the ISFMP.

With the approval of Amendment 3, a relatively straightforward approach to lobster management was envisioned: scientists assess the stock; industry committees recommend preliminary measures to the Lobster Board for consideration addressing assessment findings and the Board, in turn, forwards appropriate LCMT proposals to technical committees to review the industry-proposed measures for scientific integrity. Next, the Commission's Lobster Board synthesizes this information into the Lobster Plan, votes to approve it, then sends it to the states and federal government so that they can implement compatible LCMA-specific regulations. In short, the Commission identifies a singular Plan that the states and NMFS enact in a unified, compatible, and consistent fashion. While this approach may seem straightforward, in reality lobster management is far more nuanced and complicated.

Since the passage of Amendment 3 in 1997, lobster management has evolved into an increasingly complex regulatory environment. Individual states (through the LCMTs, via the Commission) have advanced numerous management measures, some of which are out-of-sync with each other, while the Federal government has struggled to promote regulatory consistency between state and Federal management efforts through its own rule-making processes in response to Commission actions. This, combined with the fragmented nature of state/Federal lobster management and the pace at which new management measures continue to be advanced through the Commission process, have made the

perceived need for consistency—and inability to achieve it—more acute. In response, NMFS has placed strong emphasis on improving coordination between itself and the states via the Commission. While in many ways there is more coordination than ever as a result, these efforts have so far been unable to keep pace with the myriad of management actions that continue to be advanced. A number of factors contribute to these circumstances.

1) *The Commission's inherent structure*:

- The Commission (and its Lobster Board) is not a singular entity so much as it is an amalgamation of multiple independent and sovereign entities. Specifically, the Lobster Board is composed of eleven (11) sovereign states and the Federal Government, which is itself sovereign. Each sovereign government has its own laws and authorities that govern what it can do and how it can do it. Further, the Lobster Plan is open to interpretation, so one's opinion as to what constitutes compatible and consistent regulations might vary from one government to another.
- Governments have different rulemaking apparatuses – e.g., some states can create regulations quickly by executive action, while others need legislative approval – as a result, regulations are often enacted on different timelines. NMFS does not typically begin its rulemaking for an FMP action until the Commission process ends, which in combination with existing detailed federal rulemaking requirements, causes a lag time between when the states create their regulations and when NMFS can create its regulations.[71] Accordingly, while there may be one singular Commission Lobster Plan, in reality there are twelve independent and separate sets of regulations implementing that Plan – one for each state and federal government.[72] In this environment, the challenge to maintain regulatory consistency amongst all twelve sovereigns has become increasingly more intense.

2) *State/Federal regulatory disconnects*:

Regulatory consistency across state/Federal jurisdictions is a particular challenge to NMFS due to two unique characteristics of the Federal fishery.

- First, NMFS has territorial jurisdiction -- and thus must be concerned about consistency -- in six of the seven management areas, while the majority of Commission states have territorial jurisdiction over only a single lobster management area (see Table 3.1, below).[73] As the Commission states have implemented requirements that are increasingly divergent from one another, the ability for NMFS to implement consistent measures across different LCMAs that are also consistent with the Lobster Plan approved through the Commission process has become more difficult. Further complicating this effort is the fact that Federal

[71] Occasionally, this lag time can be of benefit insofar as it allows time for further reflection and potentially, revision, of Commission addenda that are created and passed with such speed that details are sometimes necessarily left unresolved to future dates. For example, the first Commission transferability program was but one paragraph in Addendum III (Outer Cape Cod – 2002). It became far more evolved in Addendum IV (LCMA 3 – 2003) and many critical details remained unresolved until the passage of Addendum XII (Transferability – 2008).
The Commission is still tinkering with its transferability program, including elements relating to Trap Banking in draft Addendum XXI, which has not yet been approved as of the date of this FEIS. Another example is the LCMA 2 limited access plan that was passed in Addendum III (2002), withdrawn in Addendum VI (2005), re-approved in Addendum VII (2006), with foundational details being added in Addendum XII (2008).

[72] In fact, given that the twelve jurisdictions enact regulations for each of the seven separate and distinct lobster management areas, there exists the possibility for dozens of similar, but potentially non-identical lobster management regimes.

[73] The exceptions are New York and New Jersey, which have territory in just two management areas, and Massachusetts, which has territorial jurisdiction in three areas--although Massachusetts law mandates that its fishers must choose and thus fish in only one of these "near-shore" management areas. (Lobster Management LCMAs 1, 2, 4, 5 ,6 and Outer Cape Cod are sometimes referred to as "near-shore" management areas because their western boundaries run to the beach and are thus "near the shoreline." LCMA 3, whose western-most boundary is miles from the coast, is sometimes referred to as the "offshore" management area.)

permit holders are allowed to designate multiple management areas on their permit, (subject to whatever regulations exist in those management areas, including regulations that might limit access). Under these conditions, the difficult challenge for NMFS is to achieve consistency with Commission LCMA-specific management measures while maintaining a more holistic approach that considers consistency impacts in all LCMAs over which the Federal government has territorial jurisdiction, and in all LCMAs where Federal permit holders fish, which is to say everywhere in the fishery.

Table 3.1 - State/Federal Territorial Jurisdiction over Management Areas

State / Federal Government	Lobster Management Area
Maine	LCMA 1
New Hampshire	LCMA 1
Massachusetts	LCMA 1, 2, Outer Cape Cod LCMA
Rhode Island	LCMA 2
Connecticut	LCMA 6
New York	LCMA 4, 6
New Jersey	LCMA 4, 5
Delaware	LCMA 5
Maryland	LCMA 5
Virginia	LCMA 5
North Carolina	LCMA 5
NMFS	LCMA 1, 2, 3, 4, 5, Outer Cape Cod LCMA

- A second challenge to consistency that is unique to NMFS involves the nature of so-called "dual permit holders." Dual permit holders are individuals that hold two permits: a state permit allowing the person to fish in state waters 0-to-3 nautical miles from shore; and a federal permit allowing the person to fish in federal waters beyond 3 nautical miles from shore.[74] Although fishing under two permits, these dual permit holders operate their fishing businesses as a singular entity and the Commission, under Addendum XII provisions, considers their fishing practices and fishing history to be unified and indivisible. This creates further incentive for the involved state and Federal jurisdictions to make consistent decisions on the dual permit holder and disincentive (and potential for chaos) should the jurisdictions not do so.

  For an individual state, dual permit holder consistency is less complex because it needs to seek compatibility with NMFS only. And even in so doing, a state need only look at the Commission Plan and interpret it as it sees fit because NMFS is usually unable to preemptively create federal regulations in time to guide the states during the state regulatory process. For the Federal government, however, compatible dual permit holder regulations requires attempted consistency with each of the eleven (11) managing states, which are themselves not always consistent with one another. Furthermore, given the time lag between state and federal rulemaking, NMFS can often be left trying to reconcile

[74] It may also be possible in certain limited situations to have dual state permits, but such situations are rare and not germane to the present analysis.

up to eleven sets of independently developed and already enacted regulations before it can issue its own regulations.

It is within this overall regulatory context, where state/Federal regulatory consistency has become increasingly difficult to achieve, that the proposed management measures that are the subject of this EIS analysis are being considered by NMFS.

3.2 ECONOMIC ENVIRONMENT

Overview

American lobster is one of the most valuable commercial fisheries in the United States.[75] Despite this, available data (see discussion below) indicate that profit margins for lobster fishers are declining; even while the value of American lobster at times may rise, the costs associated with lobster fishing are rising at a higher rate and this has reduced the income of those who participate in the fishery.

For purposes of this analysis, the economic environment for a lobster fisher can be seen as driven by both macro and micro incentives. At the macro level, a fisher is concerned with whether the regional value of the catch is high enough to want to take on the economic burdens associated with being an active participant in the fishery. At the micro level, a fisher must weigh the potential revenue from the catch against the substantial costs of operating within the fishery (including the risks associated with exposure to volatile regional economies, such as has been seen in recent years). In general, these costs include: the boat, bait, traps, rope, fuel, and overhead. Whether an individual can realize a sufficient profit margin after these costs and revenues have been factored will, for purposes of this analysis, suggest whether those fishers currently participating in the lobster fishery will have incentives to become buyers or sellers under an ITT program (this will be discussed further in Chapter 4).

Put another way, traps fished is but one of many variables impacting lobster business profitability. Operating costs, such as the cost of the boat, bait, rope, fuel and overhead, might impact the profitability as much as the number of traps fished. A business's fishing power will increase with more traps, but so too will the costs associated with maintaining, baiting and tending higher trap levels. The profitability associated with a permit holder's trap allocation becomes even more critical once the annual schedule of trap cuts commences as required under the Commission's Plan. For those fishers who do not fish their entire allocation, the pending trap cuts may simply remove latent traps that are not being fished. For example, as discussed earlier in Sections 2.1.1 and 2.1.2, some permit holders order a full allotment of trap tags despite having no intention of actually placing the traps in the water (e.g. speculation), or if placed in the water the traps may not be baited or actively fished (e.g. holding ground). Conversely, if active traps are cut from a lobster fisher's allocation, fishers may attempt to recoup the loss in fishing power by fishing the remaining traps more aggressively, i.e., baiting and tending them more often. Still, for a certain unknown group of fishers—particularly those fishing at maximum trap levels—the trap reductions will involve active traps that will negatively impact the profitability of the business. For these individuals, the Commission's Trap Transferability Program provides the flexibility to adjust their trap allocation to the business's most efficient level.

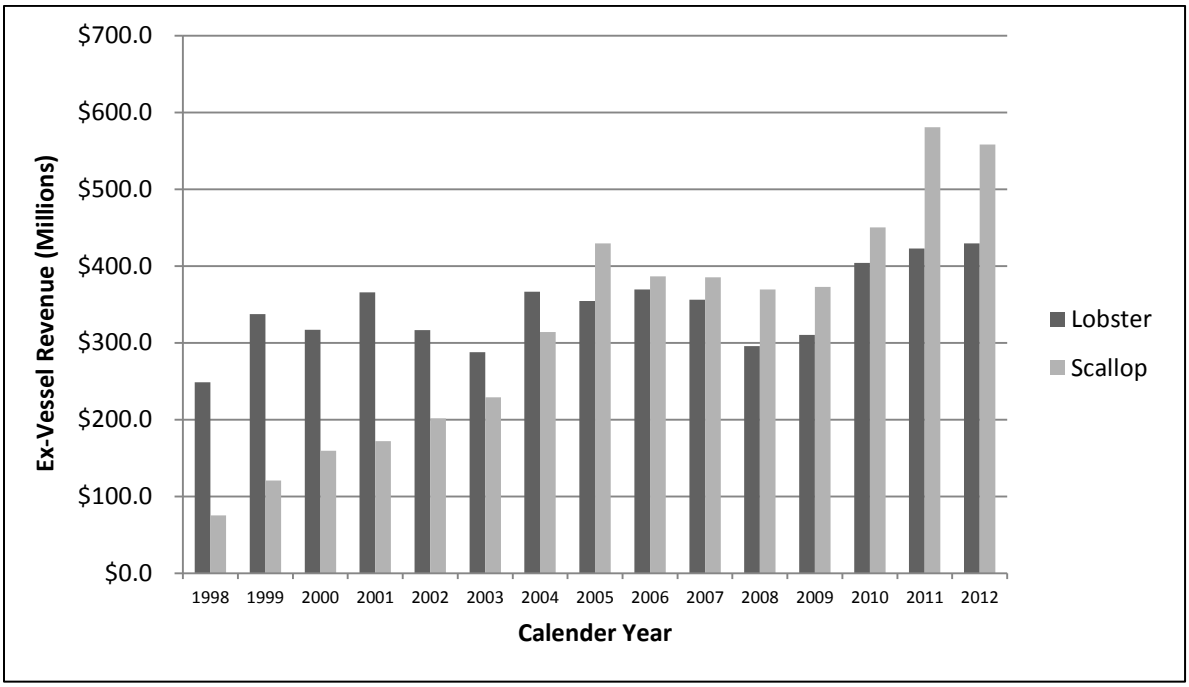
[75] (NMFS Office of Science and Technology, 2009).

The discussion below examines the economic characteristics of the American lobster fishery, with emphasis on the market and operational aspects of the components of the fishery that may be affected by the proposed limited access and ITT programs. [76]

3.2.1 Recent Trends

From 1998 to 2004 American lobster was the highest value fishery in the Northeast region ranging between $250 million and $366 million (Chart 3.1). In comparison, over the same period, scallop revenues grew steadily from $76 million to $316 million. Since 2005, annual revenues from the scallop fishery have exceeded those from the lobster fishery.

Chart 3.1 - Annual Lobster and Scallop Fishery Revenues (1998-2012)



Lobster landings ranged from a low of 71.2 million pounds in 2001 to a time series high of 149.5 million pounds in 2012 (Table 3.2). Despite landings that exceed those in 2001 by 50 percent, 2012 revenues only exceeded those in 2001 by 15 percent, because the 2012 price per pound had dropped by more than $2 over the time period (Table 3.2). By contrast, landings in 2007 and 2008 were nearly identical but the landed value of lobster fell by $60 million as the price per pound fell from $4.42 in 2007 to $3.73 per pound in 2008. The price of lobster has continued to decline since 2007, reaching a low of $2.87 per pound in 2012. Despite annual price declines, lobster revenues have improved since 2008 due to an increase in landings from 79.3 million pounds in 2008 to 149.5 million pounds in 2012.

[76] Much of this description relies on a survey conducted by the Gulf of Maine Research Institute (GMRI) of fishing activity during 2005. Since the proposed action would generally affect lobster trap businesses in LCMAs OCC, 2 and 3, the survey findings summarized herein focus on these LCMAs. Survey findings for lobster trap vessels participating in LCMA 1 are detailed in GMRI (2008). See Appendix 12 for a copy of the GMRI Survey (GMRI 2008).

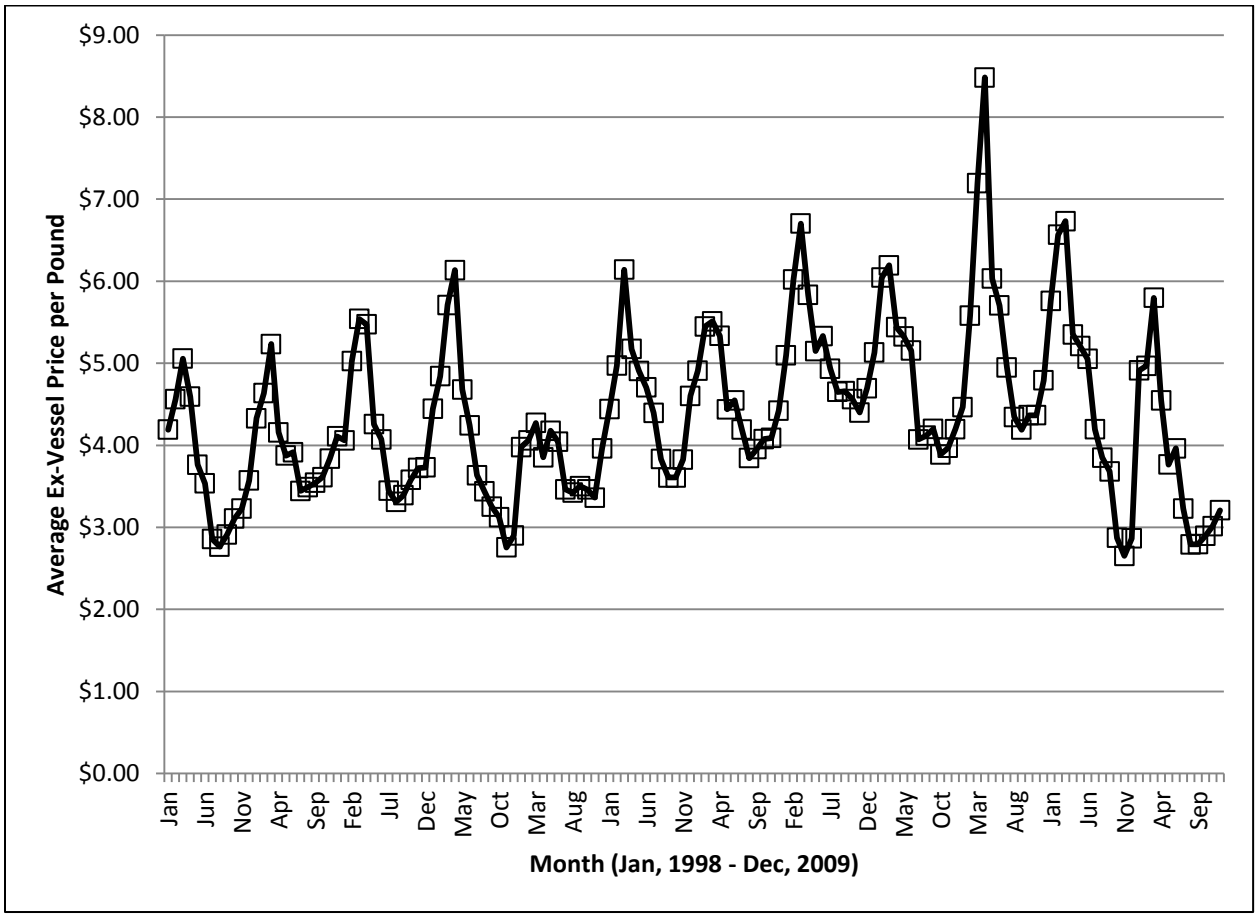
Table 3.2 – Lobster Landings and Inflation Adjusted Value and Price per Pound – 1998-2012[a]

Year	Value (millions)	Landings (millions)	Price per Pound
1998	$248.4	79.5	$3.12
1999	$337.3	88.6	$3.81
2000	$316.9	86.6	$3.66
2001	$365.8	71.2	$5.14
2002	$316.3	85.1	$3.72
2003	$287.8	73.4	$3.92
2004	$366.3	89.3	$4.10
2005	$354.3	87.3	$4.06
2006	$369.3	91.7	$4.03
2007	$355.9	80.6	$4.42
2008	$295.5	79.3	$3.73
2009	$310.2	100.5	$3.09
2010	$403.9	117.5	$3.44
2011	$422.9	126.3	$3.45
2012	$429.2	149.5	$2.87

[a] Base year = 2012

The reasons for the decline in ex-vessel prices are partially rooted in the collapse of Icelandic banks in 2008, which are an important source of financing for Canadian lobster processors – a sector which routinely purchases and processes about half of the Maine lobster harvest each year and ships it worldwide to restaurants, cruise lines and supermarkets (CNN, 2009). Without financing from the Icelandic banks, Canadian processors lacked the capital to purchase Maine lobster, cutting the largest market for Maine lobstermen and processors. Domestic markets were also diminished as poor economic conditions in the U.S. limited the purchasing power of U.S. consumers on expensive seafood choices such as lobster, despite record low retail prices. Lobster fishermen were further affected by high costs of bait and fuel, which added to the expense of lobster fishing and decreased profits because revenues were reduced by low wholesale prices (CNN, 2009). Lobster prices typically follow a seasonal pattern corresponding with peaks and valleys in landings. Prices tend to be highest during late winter and early spring months when available supplies are low, and during the summer and fall, prices tend to be lower when supplies are high (Chart 3.2). The fall months correspond with a period of high landings and reduced demand for live lobster. In the past a substantial portion of the excess supply of lobster harvested during the fall were sold to Canadian processors or pound operators. This available market tends to keep ex-vessel prices higher than they would be if this market were not available. The loss of capital to Canadian processors due to the collapse of the Icelandic banks caused a drop in the ex-vessel price to $2.87 in October 2008. Prices remained below $3.00 per pound in November and December 2008 and in the sub-$3.00 per pound range during much of the late summer and early fall months of 2009.

Chart 3.2 - Monthly Average Price Per Pound for American Lobster (1998-2009 y.t.d.)



3.2.2 Lobster Fishery Characteristics in LCMA 2 and LCMA 3

Using a stratified random design, the GMRI survey contacted a sample of lobster trap fishermen operating in LCMA 2 and LCMA 3 from the states of Massachusetts, New Hampshire, and Rhode Island. Massachusetts residents that fished in the OCC were not included in the survey so no information is available to characterize lobster trap businesses in that area. Due to substantial differences in the operating environment between the offshore LCMA 3 fishery and most LCMA 2 lobster business, the characteristics of the two fisheries are described separately.

Information used to characterize the lobster fishery during the time of the DEIS was based on the socioeconomic study completed by the Gulf of Maine Research Institute (GMRI, 2008). Since then, GOMRI has not published an updated study, but are currently working on its update to this research. For the purposes of this Final EIS, the GOMRI socioeconomic study published in 2008 is the best available data.

LCMA 2 Fishery - Economic Characteristics

Based on survey results, on average, LCMA 2 fishermen have been engaged in the lobster trap fishery for 27 years. Full-time fishermen tend to use larger vessels (36 feet/293 hp) compared to seasonal fishermen (29feet/203 hp), where full-time is defined as having set traps in every quarter of calendar year In addition to being longer, vessels used by seasonal operators are older (22 years) compared to full-time operators (20 years). Three-quarters of seasonal operators do not hire a sternman whereas 52 percent of full-time operators hire one or more sternman.

Both full-time and seasonal operators tend to fish more traps and take more trips during the second half of the year than the first. On average full-time operators fish 374 traps during Jan-March and take 1.8 trips per week. Activity for full-time LCMA 2 operators picks up in the second quarter, fishing an average of 443 traps and taking 3 trips per week. July-September correspond with peak activity for both full-time and seasonal participants. Note that the average number of trap hauls per trip is nearly constant throughout the year for full-time operators and is identical for seasonal operators in both the third and fourth quarters (GMRI 2008).

Table 3.3 - Quarterly Trap Management for Full-Time and Seasonal LCMA 2 Operators

Full-Time Operators				
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Traps	374	443	502	447
Trips per Week	1.8	3	4.2	2.6
Trap Hauls per Trip	200	186	204	188
Seasonal Operators				
Traps	NA	152	273	463
Trips per Week	NA	2.1	2.6	3.3
Trap Hauls per Trip	NA	114	151	151

Based on GMRI survey data, the majority of LCMA operators were found to be earning sufficient revenues to cover operating expenses, but net returns were below per capita income, and at most, only 25 percent earned a positive return to capital. Although the GMRI survey collected data on total revenues and total fuel, bait, and some fixed costs, data were not collected on key quantities such as total landed pounds, amount of fuel used, or amount of bait. This makes it difficult to assess how financial circumstances may have changed since or, for that matter, how 2005 may compare to prior years. To provide an indicator of change over time, an estimate of landed pounds, fuel used, and bait used was calculated by dividing gross revenues, fuel cost, and bait cost by the 2005 lobster price per pound, average price for number 2 diesel fuel, and ex-vessel price for Atlantic herring respectively. Holding the resulting quantities constant and applying average prices in other years provides an indicator or index of how margins may be changing with changes in fuel or bait price. Payments to a sternman were calculated by multiplying the share of gross revenue paid to a hired sternman during 2005. The resulting margin

represents the share of gross revenue left over for the owner's income and to pay for all expenses other than labor, bait, fuel.[77]

Based on the GMRI survey, four different types of lobster trap businesses in LCMA 2 were identified, including full-time operators that did and did not hire a sternman and seasonal trap businesses that operated during the fall/winter season and during the summer. Neither type of seasonal trap business hired a sternman. The estimated margins, holding 2005 quantities constant and applying 1998 prices, ranged from 73 percent to 91 percent, where the lower end was associated with full-time operators that hired a sternman (Table 3.4). As a point of emphasis, this does not mean that returns above fuel, labor, and bait expenses were 73 percent or better of gross revenue during 1998, since the pounds of lobster landed and quantities of purchased inputs may have been very different than they were during 2005.

Table 3.4 - Estimated Margin by Year for Representative LCMA 2 Lobster Trap Businesses

	Full-Time		Seasonal	
Year	No Sternman	Sternman	Fall/Winter	Summer
1998	82%	73%	85%	91%
1999	84%	74%	86%	92%
2000	81%	72%	84%	90%
2001	81%	72%	84%	90%
2002	81%	72%	84%	90%
2003	81%	72%	83%	90%
2004	79%	71%	82%	89%
2005	77%	69%	80%	87%
2006	71%	66%	75%	84%
2007	72%	66%	76%	84%
2008	57%	56%	63%	75%

The estimated margin during 1999 was slightly higher compared to 1998, declined during 2000 but was nearly constant from 2000 to 2003. Over these 4 years, changes in lobster, fuel, and bait prices offset one leaving the margin unchanged from year-to-year. Since 2003, the margin has been declining, reaching a low point in 2008 due to a combination of time-series lows in lobster prices and time-series highs in the prices of fuel and bait. Preliminary data indicate that the fuel price during 2009 is lower than it was during 2008, but that the average price of lobster may be lower. These data suggest that the financial situation among LCMA 2 lobster trap businesses, based on 2005 GMRI survey data reported in Thunberg (2007), has not improved and may have gotten worse (GMRI 2008).

LCMA 3 Fishery - Economic Characteristics

Again, based on survey results, on average, vessel operators participating in the offshore LCMA 3 fishery have about the same number of years engaged in the lobster fishery (30) as individuals participating in either LCMA 1 or LCMA 2. However, vessels are larger, averaging 55 feet, with main engine horsepower

[77] This approach will likely overestimate the physical quantity of bait used since the price paid for lobster bait is likely to exceed the ex-vessel price for Atlantic herring. However, if the bait price is positively correlated with the ex-vessel price, holding quantities constant, the total cost of bait will rise and fall with the ex-vessel price. In economics, a margin may be used as a measure of profitability. However, in this context the estimated margin in any given year should be interpreted as an index since quantities are held constant.

of 469 hp. Vessels averaged 17 years of age, all operators work year-round and hire at least one sternman. Two-thirds of LCMA 3 participants hire multiple crew members.

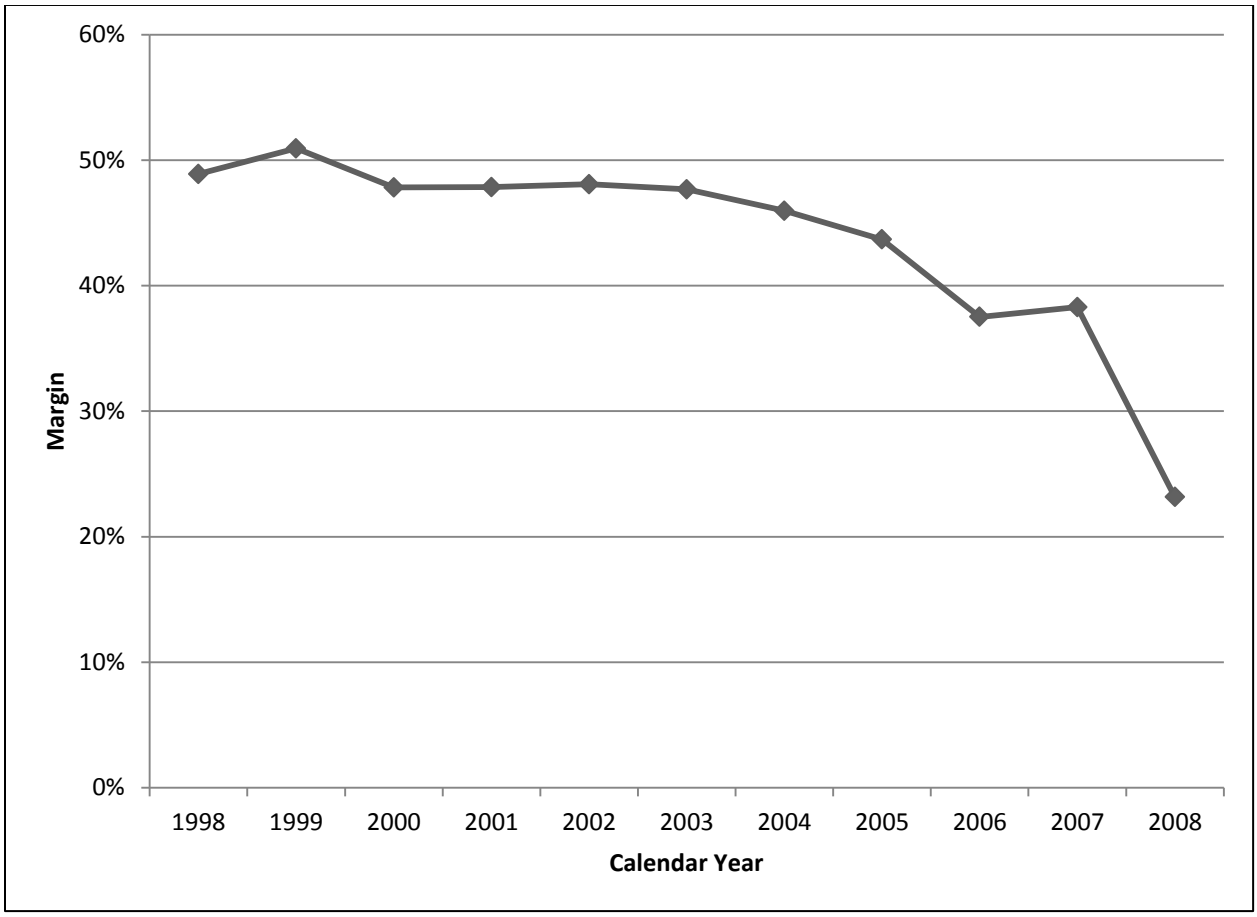
Reported quarterly effort during 2005 is indicative of a year-round fishery where the number of traps fished and traps hauled per trip varied little (Table 3.5). Specifically, LCMA 3 vessels have an average of about 1,000 traps in the water at any given time during each quarter and haul between 850 and 900 traps on each trip. The number of trips taken per week during the first quarter (2) is lower than in other quarters.

Table 3.5 - Quarterly Activity for LCMA 3 Trap Vessels

	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Traps	1,041	1,058	1,070	1,035
Trips per Week	2	2.5	3.1	2.4
Trap Hauls per Trip	939	888	887	849

Margins for LCMA 3 trap businesses were calculated using the same procedures used to create the indicator of financial condition for LCMA 2 businesses. Since crew payments represent 32 percent of gross revenues during 2005, the margin (after accounting for labor, fuel, and bait) available to pay other operating and fixed expenses is lower in all years than that reported for LCMA 2 businesses. The margin index was 49 percent during 1998 and displays the same trend during 1998 to 2003 as that of the LCMA 2 lobster trap vessels, since average prices of lobster, fuel, and bait were used throughout. That is, changes in lobster prices and key input prices from 1998-2003 tend to offset one another. However, the price of fuel began to rise at a faster rate than lobster prices, resulting in a downward trend in the margin index-from 46 percent during 2004 and continuing to a series low of 23 percent during 2008. Based on 2005 GMRI survey data, most LCMA 3 lobster businesses are earning positive returns to both operator labor and capital. Since 2005, the margin index has fallen by nearly 50 percent. Given current prices, it is likely that the financial position of most LCMA 3 trap vessel operators has substantially deteriorated (GMRI 2008).

Chart 3.3 - Estimated Margin by Year for Representative LCMA 3 Lobster Trap Business



3.3 SOCIAL ENVIRONMENT

The social environment discussion below examines the social and cultural setting of the communities potentially affected by the proposed LAP and ITT programs. Potentially affected communities were identified by first looking at the distribution of lobster fishers (trap vessels) across the relevant states and management areas, then identifying the towns in which those lobster license holders reside and, finally, identifying the counties in which those towns are located. Within each county, social and cultural characteristics of the towns with the strongest participation in the American Lobster fishery were used as a proxy for the county as a whole. Social parameters considered include regional and local demographic attributes of the fishing communities identified, (e.g., age, income, education); and cultural parameters such as institutions that support the attitudes, beliefs and values of fishery related workers and the communities in which they work.

3.3.1 Location of the Commercial Lobster Industry

This section describes the historical participation in the commercial lobster industry from 2000 to 2012 at the state and local level in order to identify where geographically the most active parts of the industry are located. The data used for this analysis is based on the information available when the DEIS was written (2000-2007 data). This section also includes an updated analysis of the historical participation in the lobster fishery since 2007. Following this discussion, the analysis considers the social profiles of the most active communities identified; it is assumed that these communities are potentially most affected by the proposed management measures for American Lobster. Beginning at the state level, the American Lobster fishery breaks down by state and across LCMAs as indicated in Tables 3.6, 3.7, and 3.8, below.

Table 3.6 - Trap Vessels in LCMA 2 by State

A2					
	2000	**2004**	**2007**	**2009**	**2012**
CT	12	16	16	17	15
MA	253	204	176	161	132
ME	71	68	22	15	15
NH	10	12	11	7	6
NJ	10	24	28	25	27
NY	33	43	42	35	29
RI	215	201	169	161	154
Other	2	7	7	6	4
Totals	606	575	471	427	382

Table 3.7 - Trap Vessels in LCMA 3 by State

A3					
	2000	**2004**	**2007**	**2009**	**2012**
CT	3	4	2	2	1
MA	173	43	34	40	38
ME	393	18	6	7	11
NH	32	13	10	11	12
NJ	67	16	9	10	8
NY	23	10	5	4	4
RI	93	43	39	33	35
Other	22	3	4	3	3
Totals	806	150	109	110	112

Table 3.8 - Trap Vessels in OCC LCMA by State

OCC LCMA					
	2000	**2004**	**2007**	**2009**	**2012**
CT	1	3	4	4	3
MA	174	155	131	113	93
ME	24	17	7	6	6
NH	1	2	3	2	2
NJ	4	10	9	8	7
NY	5	4	6	3	3
RI	10	27	20	20	19
Other	1	7	4	4	4
Totals	220	225	184	160	137

Tables 3.6, 3.7, and 3.8 uses best-available Federal permit data to provide some initial insight into the shifting presence of the lobster industry, geographically speaking, within LCMAs 2, 3, and the OCC since 2000, both in terms of absolute numbers of participants (measured by number of vessels permitted), and how this participation breaks down by state. While these data provide a useful starting point for an analysis, they have a number of practical limitations that should be noted.

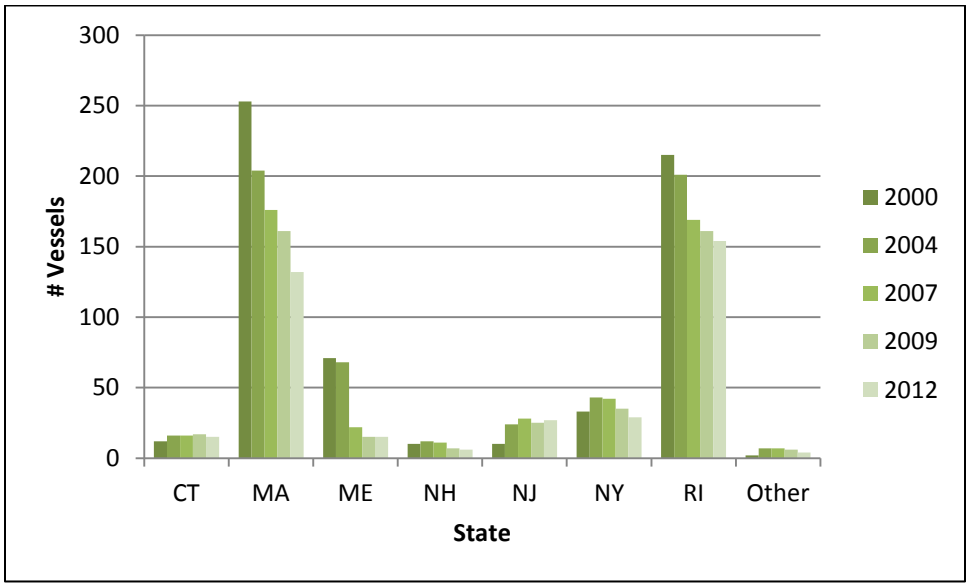
First, while the data presented is the best available, it is best viewed as an approximation of industry participation in the lobster fishery. Exact figures are not available. Further, a true understanding of industry participation is not possible without considering the behavior of fishermen in relation to the management constraints in which they operate. Under Federal regulations, vessel owners are required to designate which LCMAs they will be fishing in on their yearly permit applications. However, under current Federal regulations, permit holders in LCMAs 2 and OCC can continue to elect into these LCMAs. Therefore, there is little incentive for fishers to limit themselves in terms of the areas in which their permits would allow them to fish and, as a result, many if not most fisherman simply "check off" multiple LCMAs, regardless of whether they intend to actually fish in those LCMAs. This has created a sort of "dual reality," whereby participation "on paper" may be substantially different from the "true" level of participation. Looking at the data (Table 3.7), this effect is evident in LCMA 3: in 2000, 393 and 173 vessels from Maine and Massachusetts, respectively, designated LCMA 3 on their permits; once a limited-access program was implemented in 2003 (68 FR 14902, March 27, 2003), however, those numbers plummeted to 18 and 43, and fell even further, to 6 and 34, by 2007. The number of lobster permit holders electing LCMA 3 remained relatively stable from 2008 to 2012. Since individual fishermen qualified into LCMA 3 according to their documented historic participation, it can be argued that in the years following the LCMA 3 limited access program, the numbers more accurately reflect actual fishing effort in that LCMA, even historically speaking, compared to the much higher numbers recorded for 2000.

Further evidence of this "dual reality" is found in the participant numbers for the LCMA OCC. The Outer Cape LCMA is predominantly composed of day-boat fishers, which means that boats need to steam, fish, and then return from the LCMA OCC within a day. Given the geographic limitations alone, it is unlikely that boats as far north as New Hampshire or far south as eastern Rhode Island could travel this distance round trip within a day. This explains the dominance of Massachusetts and Rhode Island vessels in the LCMA OCC, according to the Federal data, given their closer proximity for day-boating. Nonetheless, permitted vessels from more northern and southern states do designate the OCC; it is assumed that this occurs for the reasons indicated above. The results of Table 3.8 support the original analysis whereby

Outer Cape Cod trap fishermen primarily reside in Massachusetts. This also holds true for the LCMA 2 (Table 3.6), where the majority of the lobster trap fishermen reside in Massachusetts and Rhode Island.

Given these limitations, it is most relevant to consider the participant data in absolute terms and in terms of change over time, rather than as exact numbers. Using this approach, based on the relative number of trap vessels across states, the data show in general that Massachusetts and Rhode Island are the major participants (both historically and based on the most recent 2012 data), followed by New York and New Jersey. Further, overall participation has been declining among the major participants across all LCMAs, with participation in LCMA 3 showing the most dramatic decrease over the 8-year period from 2000 to 2007.

Chart 3.4a - #LCMA 2 Trap Vessels by State - 2000-2012



Charts 3.4a, 3.4b, and 3.4c graphically illustrate the data presented in Table 3.6, 3.7, and 3.8 for the distribution of vessels across states from 2000-2012 for LCMAs 2, 3, and the OCC. Overall the results support what NMFS would intuit is occurring across lobster management areas. In LCMAs 2 and 3, for example, one would expect the contiguous states to have the largest number of participants, in this case, Massachusetts and Rhode Island, because of the day-boat nature of the fishery (as described earlier). Further, in Massachusetts and Rhode Island, the number of participants has declined over time, most likely due to the influence of the Most-Restrictive Rule and, for LCMA 3, the implementation of a limited access program at the state level, combined with restrictions on gauge size and other broodstock protection measures that were implemented during this period, discouraging its use by some fishers. For LCMA OCC, the dominant presence of Massachusetts is, again, logical because of its geographic proximity and is supported by the data.

Chart 3.4b - #LCMA 3 Trap Vessels by State - 2000-2012

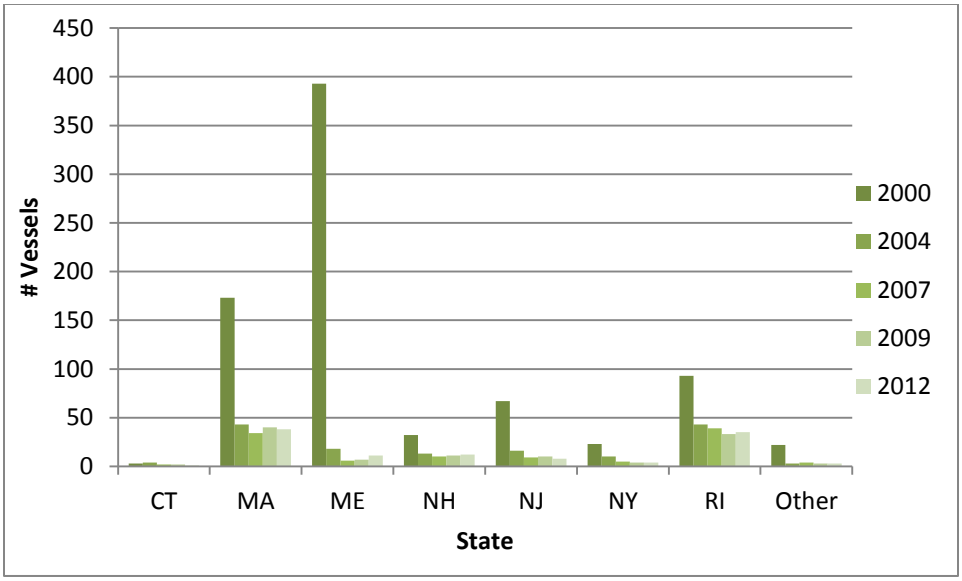
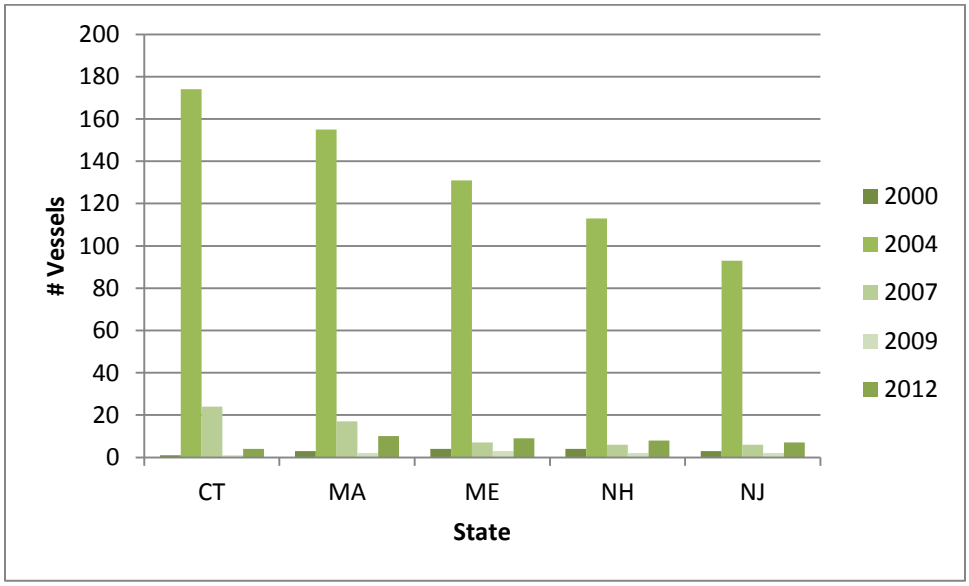


Chart 3.4c - #OCC LCMA Trap Vessels by State - 2000-2012



While these results begin to characterize the commercial lobster fishery, they tell only about the size of the industry over time; making the link between the number of vessels (i.e., licenses) and the amount of fishing effort is more difficult.

As with industry participation, there is no readily available data that precisely measures fishing effort within the American Lobster fishery. One cannot, for example, assume that an individual fisher who purchases 800 traps actually fishes all of those traps, and there is no official record keeping of what is

actually fished. Given this lack of information, NMFS considered trap tag[78] data by state and LCMA from 2000-2012 as a proxy for fishing effort. In using this data, we acknowledge that trap reductions do not fully equate with an equal or proportionate reduction in fishing effort; we believe, however, that, in gross terms, data showing trends in trap tags purchased over time is useful in combination with other indicators to demonstrate existing conditions within the lobster fishery.

The trap tag data show that, concurrent with a significant reduction in the number of vessels participating in the lobster fishery from 2000-2007, the number of trap tags[79] purchased for LCMA 2 also declined across all states by a dramatic 50-to-82% over the same time period. Important to consider, however, is that this reduction to a large degree reflects the more accurate accounting of fishing effort that could take place once the Most Restrictive Rule was implemented in 2004. Further, Massachusetts implemented state-level requirements that only those permit holders who landed their catch within the state could qualify for trap tags. These measures together helped to eliminate a significant degree of the "dual reality" conditions describe earlier, where the level of effort "on paper" was more than the actual level of effort taking place. In this context, the decline in trap tags purchased represent a certain amount of reduction in effort (unquantifiable) combined with more accurate accounting (also unquantifiable).

Trap tag purchases for LCMA 3 (see Appendix 9 – Trap Tag Tables) also show declines of 62 percent to 73percent from 2000-2007 for Massachusetts and Rhode Island, respectively. These declines were largely driven by the implementation of a Federal limited access program for LCMA 3 (68 FR 14902, March 27, 2003), combined with the Most Restrictive rule. The numbers for the later 2004-2007 years are also thus a more accurate reflection of actual fishing effort (a conclusion supported by the relatively strong correlation between the number of vessels electing A3 and the number of vessels purchasing trap tags, as well as the number of trap tags authorized and the number of trap tags purchased).

Finally, for LCMA OCC (see Appendix 13 – Trap Tag Tables) the trap tag data show a decline of 81 percent from 2001-2007 for Massachusetts, the dominant player geographically for this management area. These results most likely reflect strong enforcement by the Commonwealth of Massachusetts of the Most Restrictive Rule, once implemented. Further, the number of Massachusetts vessels purchasing trap tags shows a concurrent decline – from 110 vessels in 2001 to 32 vessels in 2012 – also reflective of the Commonwealth's approval of trap tag purchases only to those Federal vessels that the Commonwealth determined qualify in LCMA OCC.

The following section analyzes industry participation in the American Lobster fishery state-by-state and, within each state, county-by-county for each LCMA.

Massachusetts

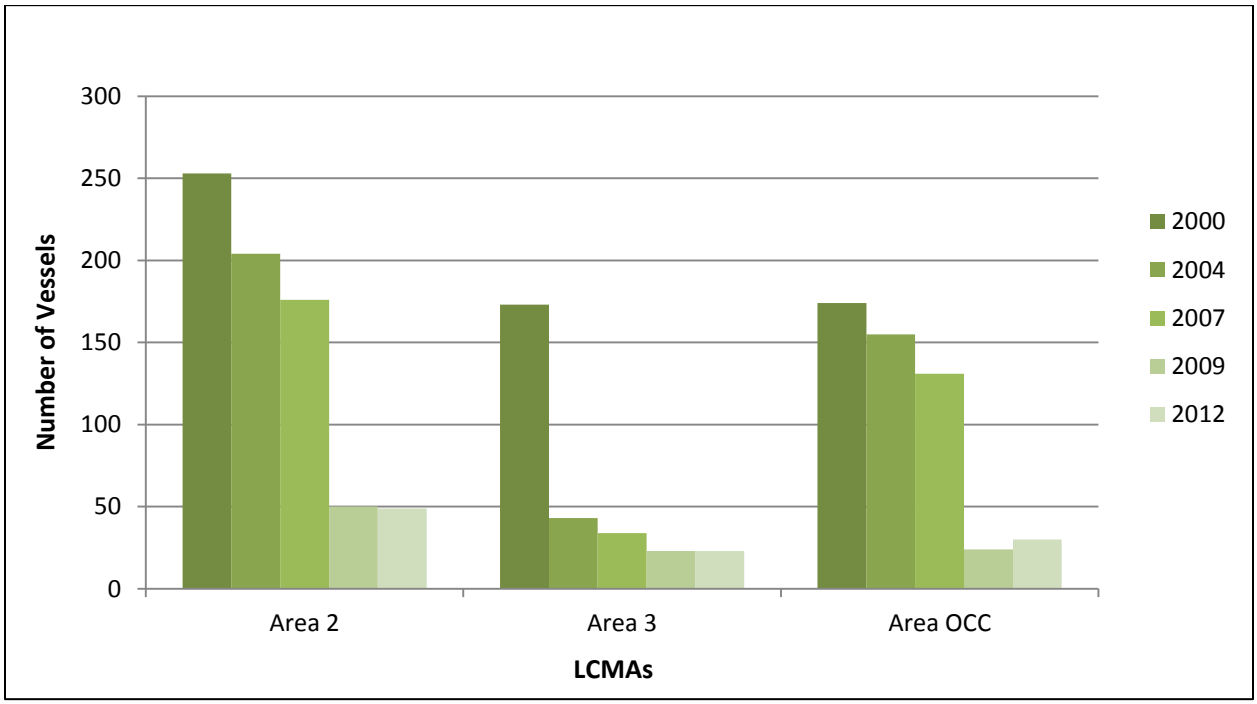
In Massachusetts, overall participation in the American Lobster fishery has declined across all LCMAs between 2000-2012, with the most dramatic decline occurring in LCMA 3 (Chart 3.4b). In general, these data are consistent with the impact one would expect to see following the implementation of the Most Restrictive Rule and, for LCMA 3 in particular, a Federal limited access program in 2004.

At the county level, 11 Massachusetts counties participated in the American lobster fishery at some level from 2000-2012. Within LCMA 2, Barnstable, Bristol, Dukes, Essex, and Plymouth comprised 90 percent of the total participation in 2000 (participation from the other six counties was at less than 3 percent each of the total). Of the top five counties participating, Bristol and Plymouth experienced the largest change

[78] A "trap tag" is a marker tag permanently attached to the trap bridge or central crossmember of a lobster trap, identifying permit number, permit year, authorized management area and/or trap number.
[79] See Appendix 8 for trap tag tables.

over the 12-year period from 2000-2012, with Bristol increasing by 8 percent and Plymouth decreasing by 4 percent by 2012. Change in participation for the other top counties fluctuated between one-to-two percent over the same period.

Chart 3.5a – Total # Mass Vessels 2000-2012 LCMA 2, 3, OCC



Within LCMA3, Barnstable, Bristol, Essex, and Plymouth comprised 88 percent of the total participation in 2000. Of these four counties, Bristol's level of participation rose from 21 percent in 2000 to 48 percent by 2012, while Essex's participation level dropped from 29 percent to 4 percent during the same period. Change in participation for the other nine counties fell within single digits, with the exception of Norfolk County, which declined from 5 percent to zero percent during the 2000-2012 period.

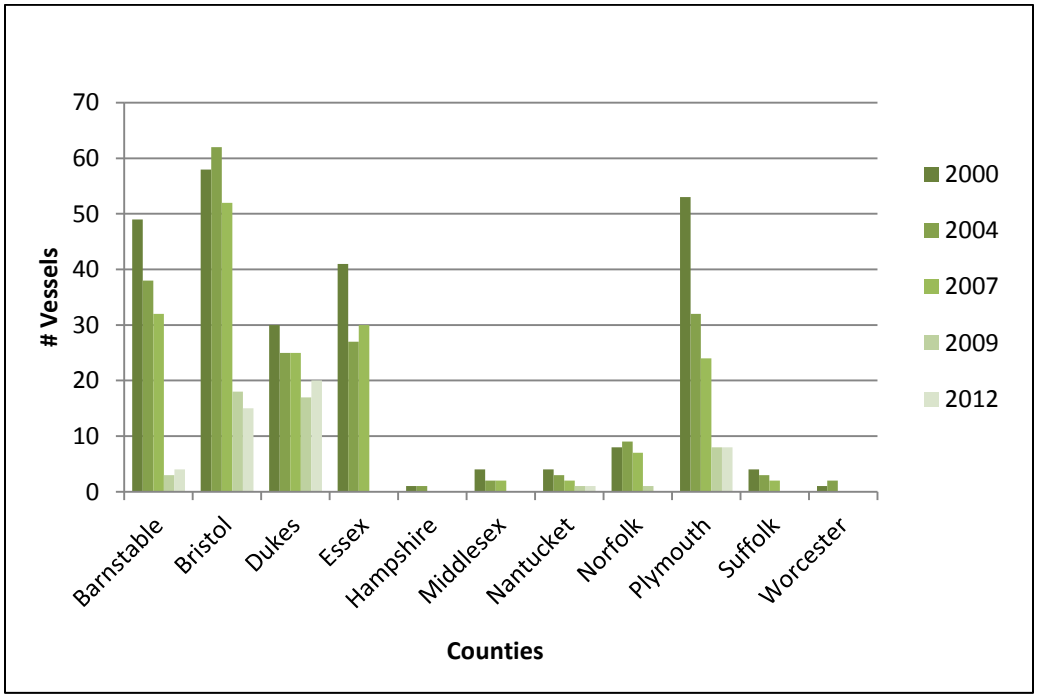
Charts 3.5b, 3.5c and 3.5d, below, graphically illustrate the data for the number of lobster vessels across Massachusetts counties from 2000-2012 for LCMAs 2, 3, and the OCC. One general conclusion can be made from these data: for some counties, the numbers of vessels *as a percentage of the total* have not changed significantly from 2000-2012, even though in absolute terms it may look like a large number of vessels have left the fleet. This is the case for Plymouth County, where in LCMA 2, the percentage of the total number of vessels in Massachusetts electing A2 declined from 21 percent to 17 percent from 2000-to-2012, while the absolute number of vessels dropped from 53 to 8, or 85 percent, during this time period.

A number of reasons may account for the loss of fishing vessels within a fleet and the data available are not robust enough to identify specifically how many vessels left for which reasons. Potential reasons, unquantifiable here, include:

- More restrictive regulations that create a disincentive to stay in the industry:

  - Most Restrictive Rule[80] (requiring that a vessel owner abide by the more restrictive trap allocation of the LCMAs in which he/she fishes); and
  - broodstock measures, such as gauge limit size, etc).
- Owners transfer out of one LCMA and into another.
- Aging fishers decide to retire from the industry.
- More accurate accounting as a result of Most Restrictive Rule and, in the case of LCMA3, the move to a Federal Limited Access Program within LCMA 3, both of which helped to close the "gap" between what the size of the industry looked like "on paper" versus how many vessels were actually fishing in elected management areas.

Chart 3.5b - Total # LCMA 2 Vessels by Mass County - 2000-2012



[80] See Section 4.1 of this FEIS and Addendum XII (Appendix 3), Section 4.2 for a detailed description of the Most Restrictive Rule.

Chart 3.5c - Total # LCMA 3 Vessels by Mass County - 2000-2012

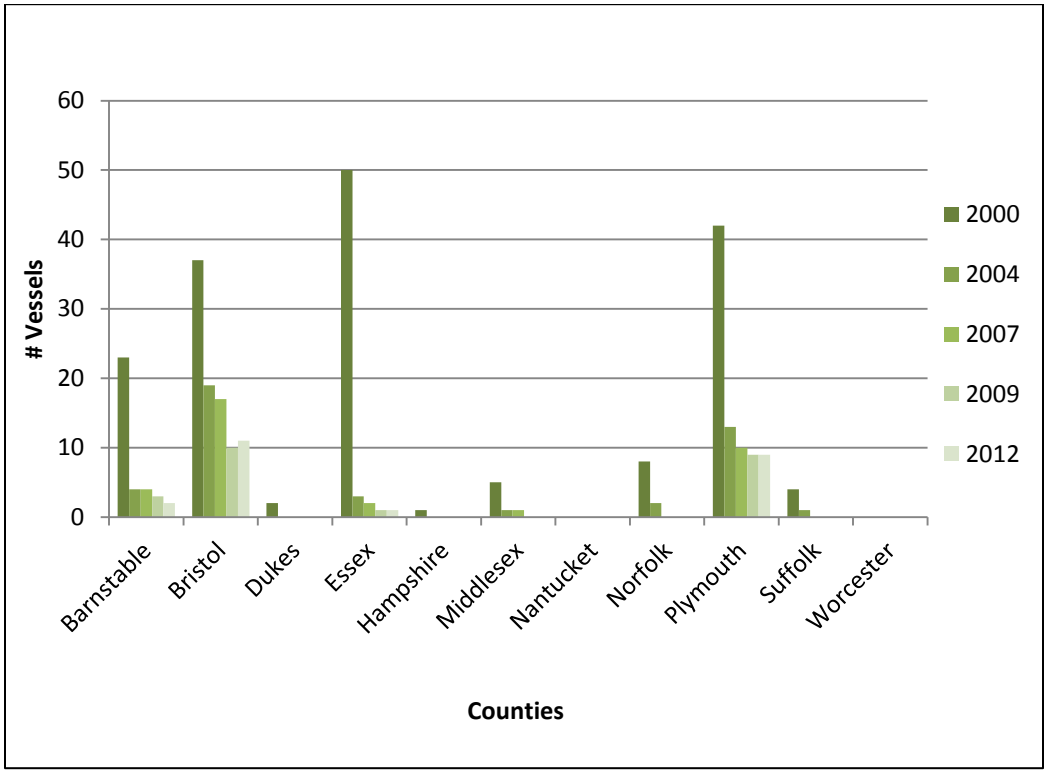
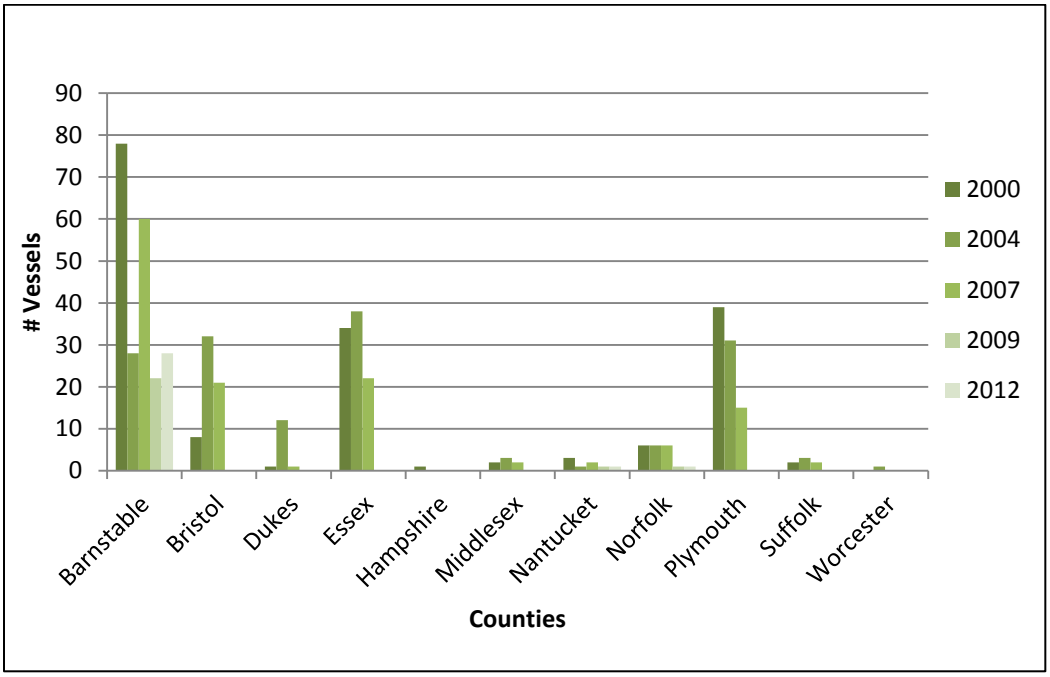


Chart 3.5d - Total # OCC LCMA Vessels by Mass County - 2000-2012



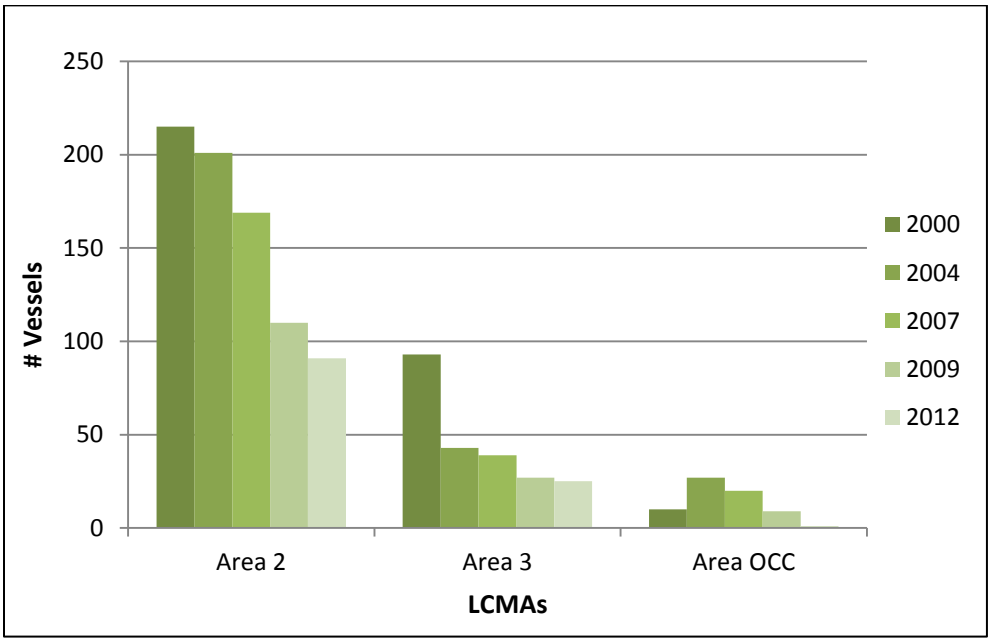
For LCMA 3, the top four counties, Barnstable, Bristol, Essex, and Plymouth, all experienced dramatic declines from 2000 to 2012 in the number of permitted vessels from those counties electing in A3, a result that largely reflects the Limited Access Program that was implemented there during this time period, as well as the other possible reasons identified above. At the same time, Bristol County's percentage share of the total nearly doubled, from 21 to 48 percent, though the number of vessels shrunk from 37 to 11 during this time period. In Plymouth County, the percentage share of the total number of vessels changed from 24 percent to 39 percent, while in absolute terms, the number of vessels shrunk from 42 to 9.

For LCMA OCC, the top three counties, Barnstable, Essex, and Plymouth, all experienced moderate-to-significant declines from 2000-2012 in the number of permitted vessels electing to fish in this LCMA from those counties, a result that largely reflects the state management program implemented by Massachusetts during this time period, as well as the other possible reasons identified above. Barnstable County, on the other hand, gained share in the overall fishery for the LCMA OCC throughout this period, rising from 45 to 93 percent and from 78 to 28 vessels. Plymouth County showed the most significant decline both in relative and absolute terms, dropping from 22 to zero percent level of participation overall and from 39 to 0 vessels, respectively.

Rhode Island

For Rhode Island, participation in LCMA 2 dominates across all time periods relative to LCMA 3 or LCMA OCC (Chart 3.6a). Further, LCMA 2, LCMA 3, and LCMA OCC showed moderate-to-significant decline in participation during the 2000-to-2012 period. In general, these data are consistent with the impact one would expect to see following the implementation by Massachusetts of it management plan for the LCMA OCC, including the Most Restrictive Rule.

Chart 3.6a - Total # RI Vessels - 2000-2012 – LCMA 2, 3, OCC



At the county level, five counties--Bristol, Kent, Newport, Providence, and Washington--participated in the American Lobster fishery at some level from 2000-2012. Within LCMA 2, Newport and Washington counties comprised 88 percent of the total participation in 2000 (participation from the other four counties ranged from 1-7 percent of the total) and that percentage remained nearly constant over the 2000-to-2012 period. In LCMA3, Newport and Washington counties remained the dominant players, though they shifted their weight between each other +/- 7 to 10 percent from 2000-2012.

For LCMA OCC, Washington County is by far the dominant player in what is the smallest of the Rhode Island lobster fisheries, with 80-100 percent and 8-1 vessel(s) electing to fish in that area over the 2000-2012 period.

For the two top Rhode Island counties, Newport and Washington, the absolute number of vessels electing to fish in the LCMA 2 (Chart 3.6b) dropped moderately over the 2000-2012 period (from 49-23 and 140-63, respectively). In LCMA 3, however, that number dropped dramatically in Newport and Washington, from 29-9 and 61-15, in contrast to a much smaller decline of 7 percent relative to the total Rhode Island fishery during this time period (Chart 3.6c).

Chart 3.6b - Total # LCMA 2 Vessels by RI County - 2000-2012

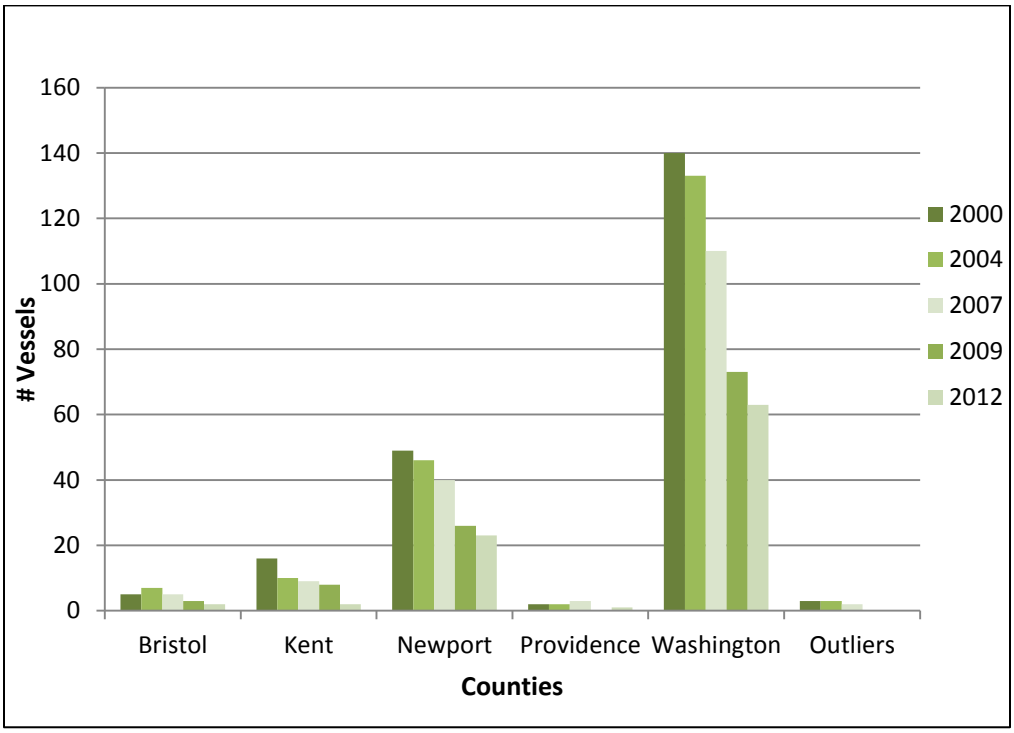
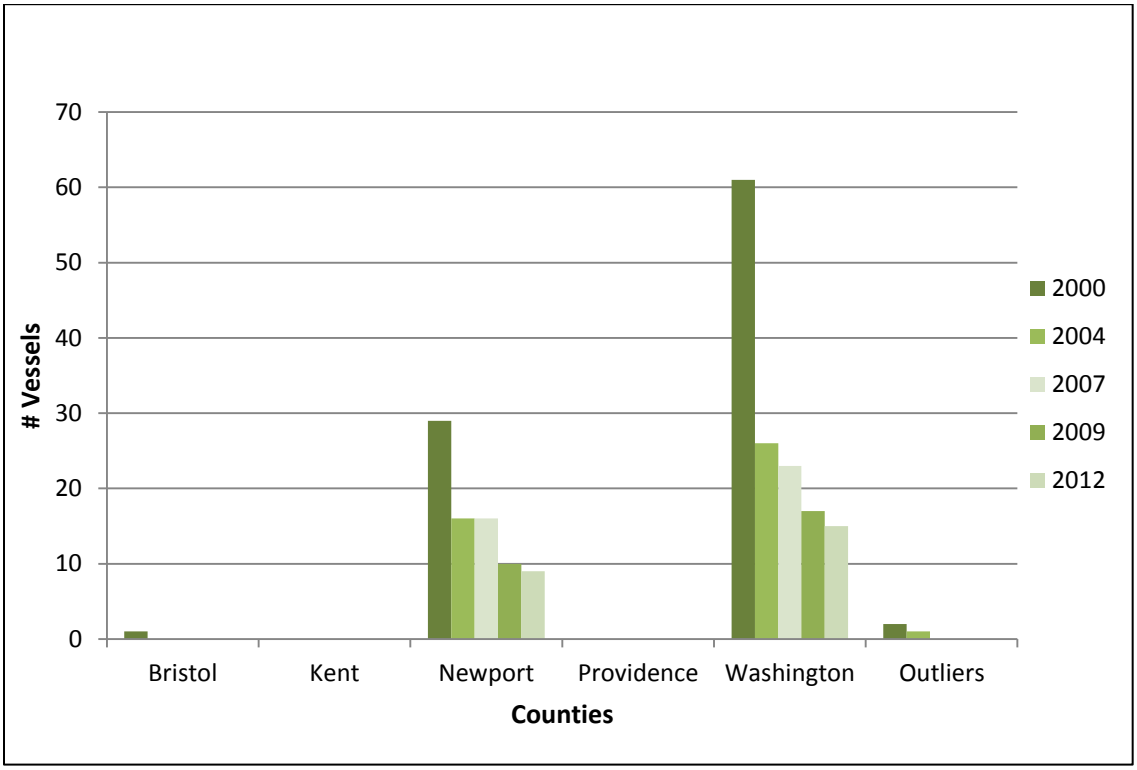
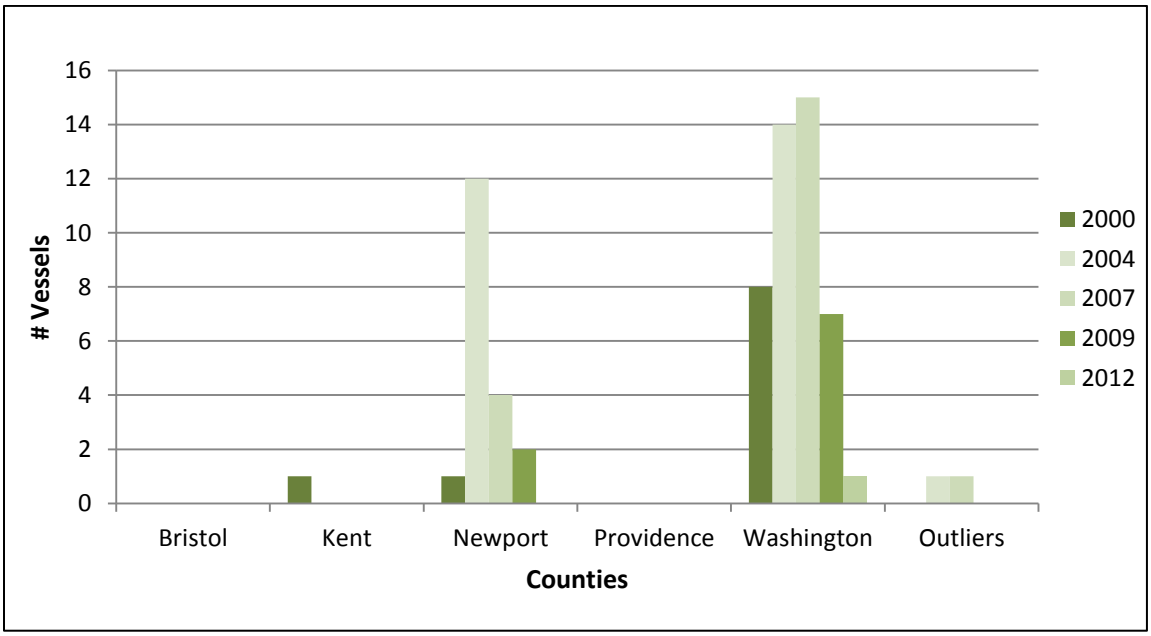


Chart 3.6c - Total # LCMA 3 Vessels by RI County - 2000-2012



In the LCMA OCC (Chart 3.6d), Newport and Washington remain the top two participants, though their overall numbers are dwarfed by the number found in the other two LCMAs (169 and 39 vessels for LCMAs 2 and 3, respectively, versus 20 vessels for the LCMA OCC).

Chart 3.6d - Total # OCC LCMA Vessels by RI County - 2000-2012

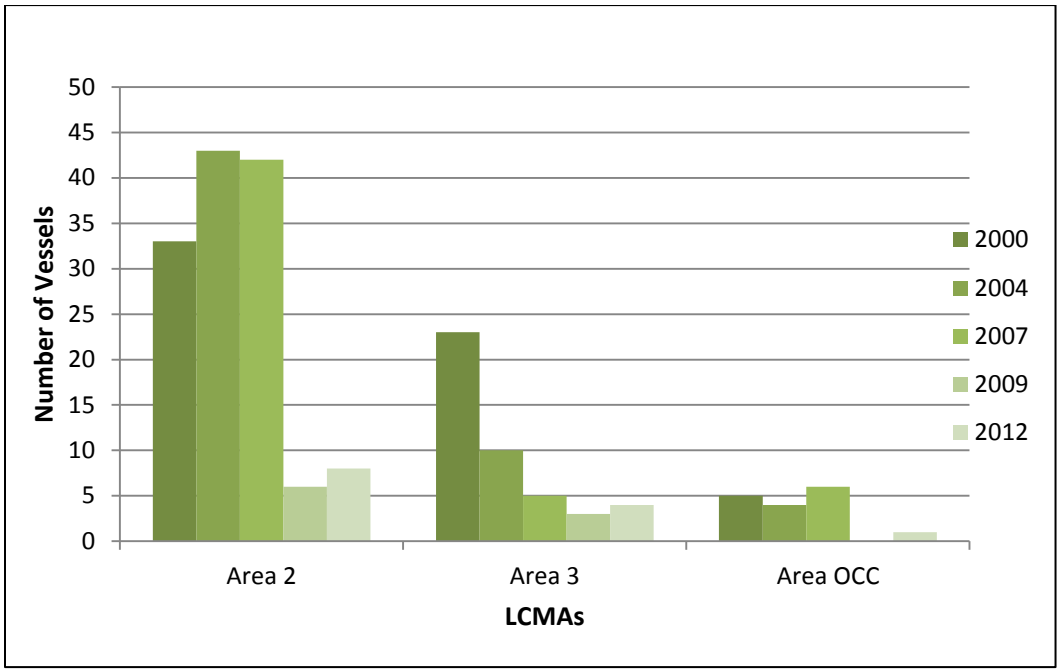


Relative to Massachusetts and Rhode Island, New York and New Jersey represent a much smaller share of the overall American Lobster fishery along the East Coast of the United States; nonetheless, some similar trends in overall fishery participation are supported by the Federal permit data available, as described in the following sections below.

New York

For the New York fishery overall, what stands out is the shift in participation away from LCMA 3, following the implementation of a Limited Access Program there in 2004, into LCMAs 2 and OCC, both of which show rising levels of participation over the 2000-2012 period.

Chart 3.7a - Total # NY Vessels - 2000-2012 – LCMA 2, 3, OCC



Suffolk County is by far the largest participant across all LCMAs, representing from 70-100% of the NY fishery at any one time during the 2000-2012 period.

In terms of absolute numbers of vessels, the most notable change occurred in LCMA 3 (Chart 3.7c), which decreased from 16 to 4 over the 12-year period (2000-2012)--a 75 percent drop. This is consistent with the changes noted above that took place in the NY fishery following the implementation of a Limited Access Program for LCMA 3. Also consistent is the increase from 2000 to 2007 in vessels that occurred in the other LCMAs, 2 and the OCC, as boats migrated to other management areas once NMFS implemented a limited access program in LCMA 3 (Charts 3.7b and 3.7d). Since then, the Commission implemented a limited access program in LCMA 2. In LCMA 2, the number of vessels decreased from 33 to 8 over a 5-year period—a 75 percent drop.

Chart 3.7b - Total # LCMA 2 Vessels by NY County - 2000-2012

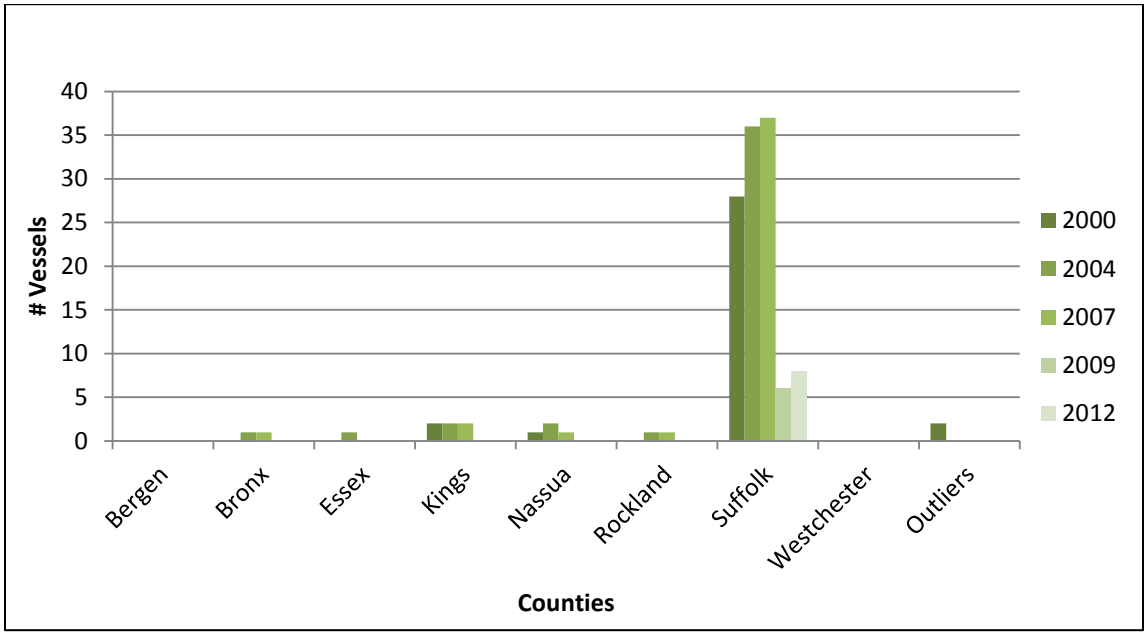


Chart 3.7c - Total # LCMA 3 Vessels by NY County - 2000-2012

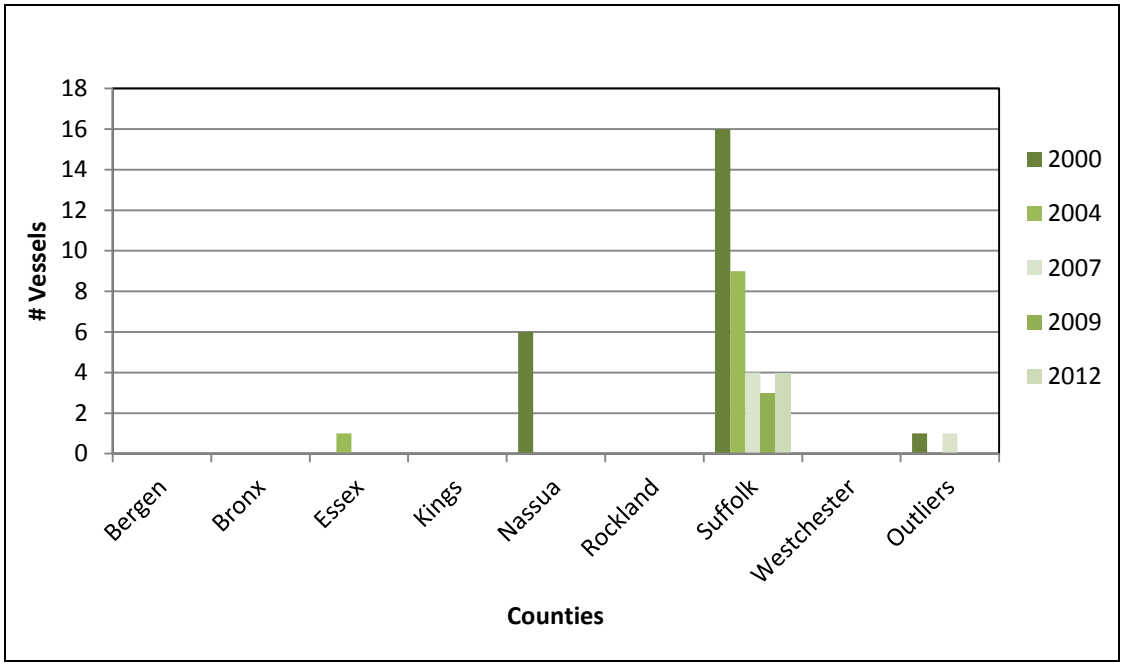
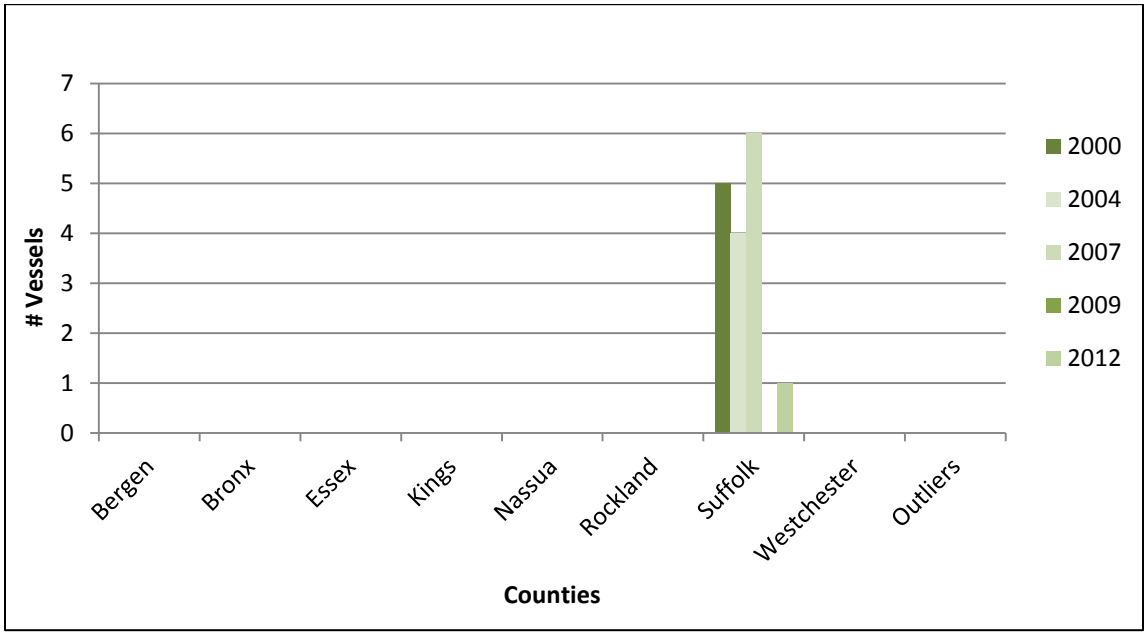


Chart 3.7d - Total # OCC LCMA Vessels by NY County - 2000-2012

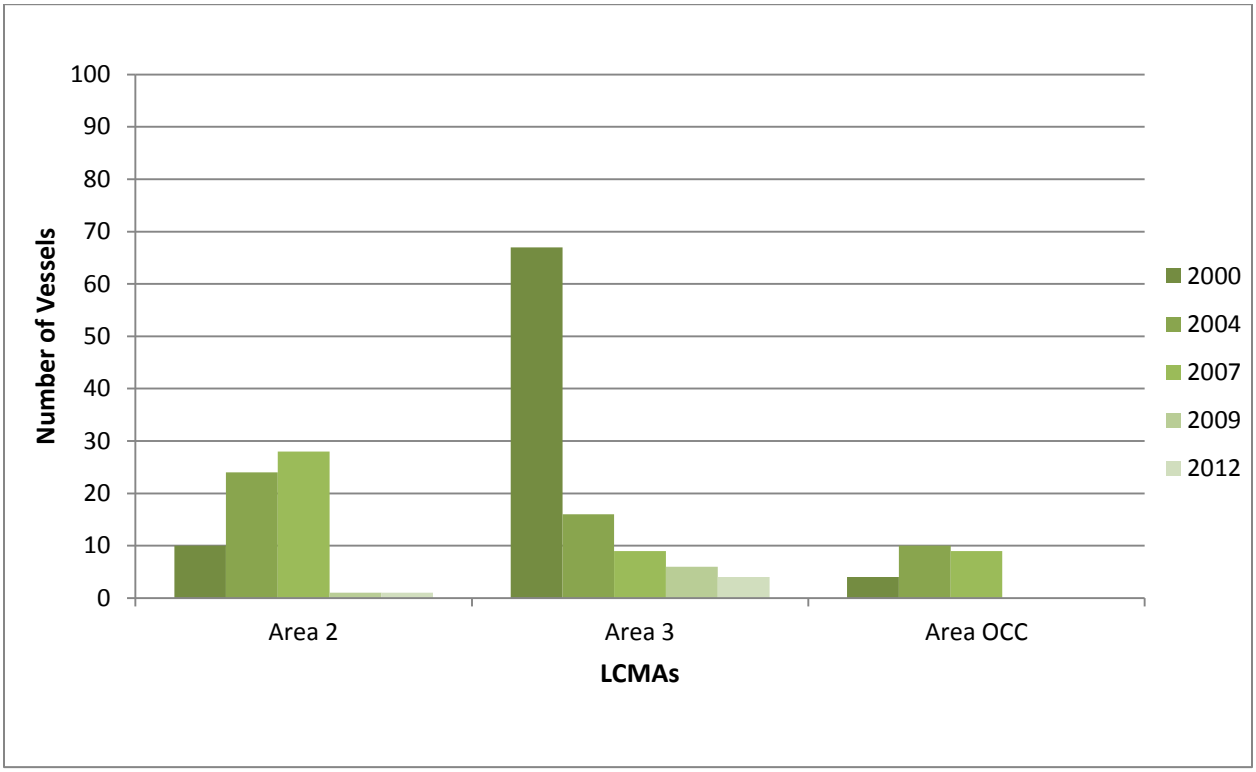


New Jersey

At the LCMA-level, events from 2000-2012 in New Jersey's American Lobster fishery are nearly identical to those described above for New York.

For the New Jersey fishery overall, Federal data shows a shift in participation away from LCMA 3, following the implementation of a limited access program there in 2004, and into LCMAs 2 and OCC from 2000-2012 (Chart 3.8a). The number of vessels decreased since 2007 for LCMAs 2 and OCC.

Chart 3.8a - Total # NJ Vessels - 2000-2012 – LCMAs 2, 3, OCC



At the county level, of the nine New Jersey counties participating from 2000-2012, there are three dominant players across all LCMAs: Cape May, Monmouth, and Ocean. Of these, Ocean County dominates in LCMA 2, followed Cape May and Monmouth counties, which reversed positions with each other during the 8-year period from 2000-2007. Similar to New York, New Jersey's participation in LCMA 3 dropped by a precipitous 94 percent from 2000-2012, following the implementation of a Limited Access program in that management area. With only 4 NJ vessels left in the LCMA 3 fishery by 2012 (down from 67 in 2000 to 4 in 2012), 3 of those resided in Cape May County. For LCMA OCC, Ocean County begins as the dominant presence during 2000-2007, followed by Monmouth and Cape May Counties. By 2012, there is no NJ participation in LCMA OCC, attributable to the limited entry program.

Consistent with the trends described above, Federal permit data shows that Ocean County had the strongest representation in LCMAs 2 and OCC, while losing the highest number of vessels in LCMA 3 from 2000-2007 (Charts 3.8b, 3.8c, and 3.8d).

Chart 3.8b - Total # LCMA 2 Vessels by NJ County - 2000-2012

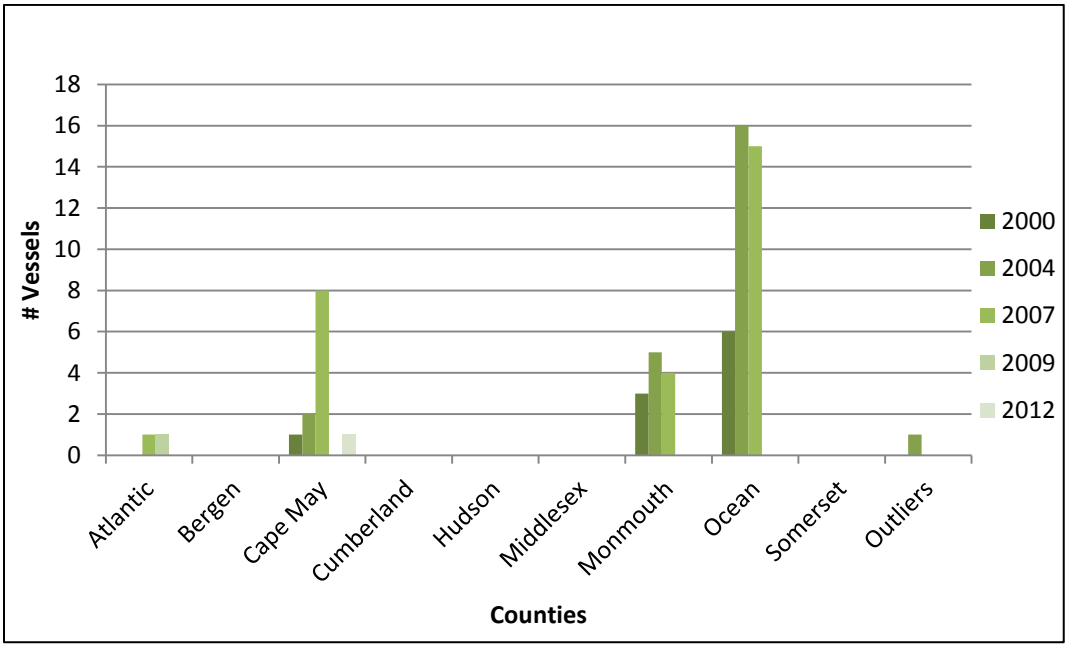


Chart 3.8c- Total # LCMA 3 Vessels by NJ County - 2000-2012

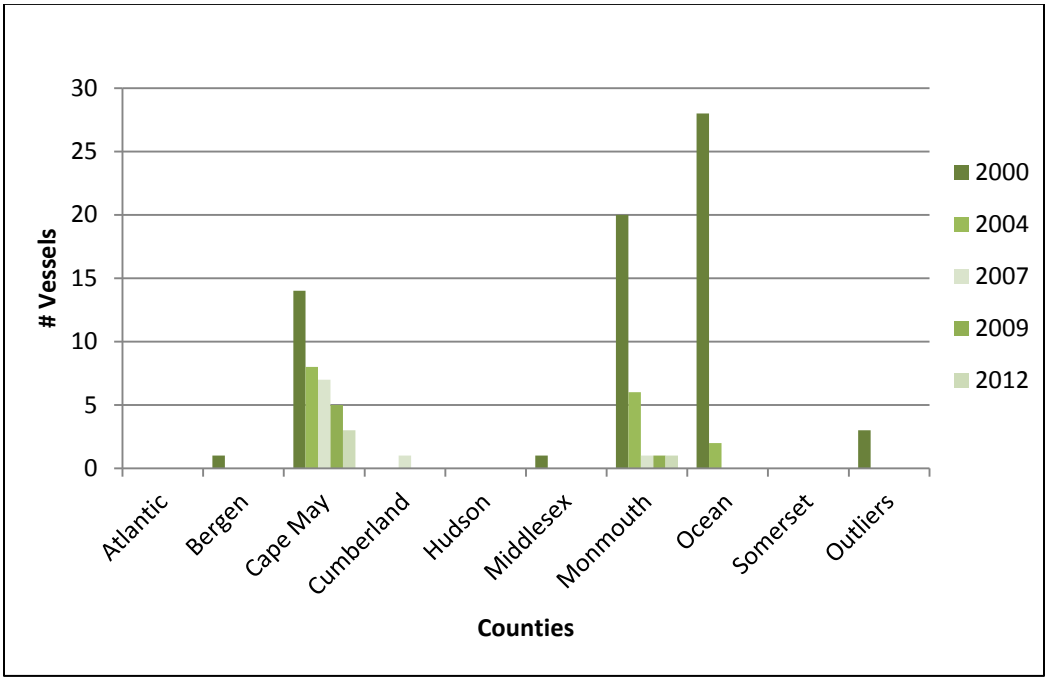
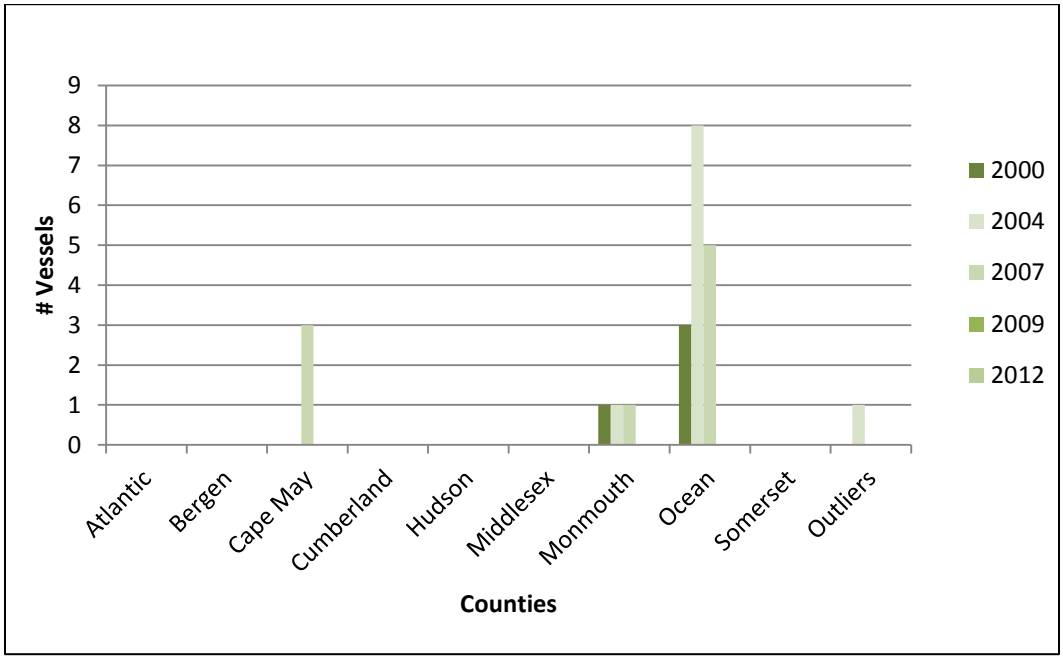


Chart 3.8d - Total # OCC LCMA Vessels by NJ County - 2000-2012



Top Counties - Conclusions

Based on the analysis above, the following counties from Massachusetts, Rhode Island, New York and New Jersey are the most active in the American Lobster fishery across LCMAs 2, 3 and the OCC from 2000-2012:

Table 3.9 - Most Active Counties by State in the American Lobster Fishery (2000-2012)

State	Counties
Massachusetts	Barnstable, Bristol, Dukes, Essex, Plymouth
Rhode Island	Newport, Washington
New York	Suffolk
New Jersey	Ocean, Cape May

Social and Cultural Setting

Describing the social and cultural setting of the fishing communities potentially affected by the proposed American Lobster management measures necessarily requires some subjective analysis because the existing social science research focusing on these issues is either incomplete or unavailable. Where practicable, this analysis has been combined with objective data. It should be noted, however, that many

of the standard demographic measures (e.g., median age, types of employment, race) mask what are arguably the most salient attributes of the potentially affected lobster fishing community from a social standpoint, attributes for which little or no hard data exists. Nonetheless, some standard measures are presented herein so as to provide information regarding these communities as they relate to each other and to the states in which they reside. Keeping these limitations in mind, some important examples of what U.S. Census statistics do not reveal about the potentially affected communities are as follows:

- **Current lobster license holders are, in general, an older population:** Available social science research, while not limited to the communities identified here, has shown that the American Lobster fishers are overall an older population, with many license holders curtailing their time "on the water" and considering themselves near retirement. U.S. Census Bureau median-age statistics do not capture this information.
- **The importance of commercial lobster fishing (and commercial fishing overall) to the social environment is under-represented in the available data:** Employment statistics hide the level of commercial fishing within a statistical area (e.g., state, town, county) under broad headings, such as "self-employed" or "agriculture, forestry, fishing and hunting, and mining."
- **Commercial lobster fishing plays a key role in the current social environment of many of the affected fishing communities:** Intuitively, one might argue that a sound economic base has an important influence on the social well-being of a community. For many of the towns identified with the most active commercial lobster industry, lobster ranks among the top-three in value of commercial landings relative to other fisheries, suggesting that this commercial fishery has a high relative importance to the current local economic and social well-being of those communities.
- **"Gentrification" within many existing fishing port communities along the east coast of the United States competes with the commercial fishing industry for needed real estate and infrastructure:** Seaport towns are considered prime real estate for residential and tourist development, which often compete against the commercial fishing industry's need for mooring space and land-based infrastructure.

For this analysis, the city or town within each of the counties identified above that has the strongest participation in the American lobster fishery (i.e., with the greatest number of permit holders) has been used as a proxy to represent the county as a whole and each one is evaluated for certain social and cultural characteristics. These characteristics include demographics (population, median age, education, ethnic origin) and cultural attributes (such as the regular occurrence of community events and attractions that celebrate the historic presence of the local fishing industry; social/cultural organizations that help to provide social support and services to the affected fishing communities; and gentrification, meaning that pressure within the town to convert port areas traditionally dedicated to fishing to another competing use, such as residential development, has been noted).[81] Demographic information comes from the U.S. Census Bureau, while information used to identify cultural attributes comes from the NMFS's Northeast Fisheries Science Center, "*Community Profiles for the Northeast US Fisheries*."[82]

[81] See "Guidelines for Assessment of the Social Impact of Fishery Management Actions," (NMFS 2002b).

[82] See selected Community Profiles in Appendix 10. See website for further profiles: http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

Table 3.10 - State & County Social/Cultural Data - 2005-2007

	Demographic Data				Cultural Attributes			
	Population (est.)	**Median Age**	**% with High School Education or Greater (2)**	**% non-white population**	**Noted Presence of Cultural Attributes Related to Fishing Industry (3)**	**Noted Institutional Presence Related to Fishing Industry (3)**	**Rank Value of Lobster Fishery Relative to Other Fisheries (3)**	**Noted Gentrification Issues (3)**
Massachusetts	6,437,759	38	88%	17%				
Essex	731,841	39	88%	16.8%				
Gloucester	27,858	50	91%	2.7%	Yes	Yes	2	Yes
Barnstable	223,574	46	94%	5.5%				
Chatham	6625 (1)	54 (1)	93% (1)	4.0%	Yes	Yes	3	Yes
Bristol	543,146	38	79%	10.0%				
New Bedford	93,812	36	64%	24.5%	Yes	Yes	5	Yes
Dukes	14,987 (1)	41 (1)	90% (1)	9.3%				
Chilmark	843 (1)	46 (1)	98%	2.3%	Yes	Yes	1	Yes
Plymouth	488,878	39	91%	13.2%				
Scituate	17,863 (1)	41 (1)	96% (1)	3.3%	Yes	Yes	2	Yes
Rhode Island	1,048,319	37	78%	15%				
Washington	128,000	40	93%	4.2%				
Wakefield	8,468	37	90%	10%	Yes	Yes	Unknown	Unknown
Newport	82,000	43	90%	3.3%				
Little Compton	3,593	44	80%	1.3%	Yes	Yes	3	Unknown
New York (1)	18,976,457	36	79%	32%				
Suffolk	128,000	40	89%	4.2%				
Montauk (1)	3,851	39	84%	11%	Yes	Yes	7 (2006)	Yes
New Jersey (1)	8,414,350	37	82%	27%				
Cape May	97,724	47	87%	18%				
Cape May (1)	4,034	47	88%	25%	Yes	Yes	6	Unknown
	(1) 2000 data							
	(2) Persons 25 years or older							
	(3) see Appendix 10 for selected community profiles.							

3.4 AMERICAN LOBSTER

3.4.1 Biological Characteristics

The information contained in this section is a summary of the life history and reproductive success of the American lobster. For a more extensive review of the status of American lobster, see the Commission Stock Assessment Report No. 09-01, dated May 2009 (ASMFC 2009) located at the Commission's website at www.asmfc.org.

The American lobster is a long-lived species known to reach more than 40 pounds (18 kg) in body weight (Wolff 1978). The American lobster is a bottom-dwelling, marine crustacean characterized by a shrimp-like body and ten legs, two of which are enlarged to serve as crushing and gripping appendages. Lobsters are encased in a hard external skeleton that provides body support and protection. Periodically, this skeleton is cast off to allow body size to increase and mating to take place. Lobster growth and reproduction are linked to the molting cycle. The age of lobsters is unknown because all hard parts are shed and replaced at molting, leaving no accreting material for age determinations. Traditionally, scientists estimate the age of lobsters based on size, per-molt growth increments and molt frequencies. Based on this kind of information, Cooper and Uzmann (1980) estimated that the American lobster may live to be 100 years old.

Recent information from European lobster, *H. gammarus* (Addison 1999), indicated a large variation in age at size with 7 year classes making up the 85-95 mm size class. Research on aging of lobsters using lipofusion was conducted in the UK on measurements from the eyestalk ganglia (Sheehy and Bannister 2002). Molting was so erratic and protracted that European lobster between 70 and 80 mm CL required at least 5 years to fully-recruit to legal size (81 mm) in the trap fishery off the UK (Sheehy et al. 1996). These researchers have concluded that changes in lobster body length explained less than 5 percent of the variation in true age in European lobster. Predicted sizes at age were significantly below those estimated from tagging studies, and large animals approached 54 years in age using lipofusion data.

Water temperatures exert significant influence on reproductive and developmental processes of lobster. Huntsman (1923, 1924) found that larvae hatched in water less than 15° C developed much more slowly than those hatched in warmer water. Size at maturity is related to summer water temperatures, *e.g.*, high temperatures enhance maturation at small sizes, and the frequency of molting increases with water temperature (Aiken 1977). Within the range of lobster, water temperatures tend to increase from north to south and tend to range higher inshore than offshore. However, the size increase per molt was shown to be smaller in blue crabs raised in warmer waters (Leffler 1972); and adult lobsters exhibited a smaller size increase per molt in warmer areas (NUSCO 1999) compared to those measured in the U.S. offshore waters (Uzmann et al. 1977, Fogarty and Idoine 1988). Early maturity occurs in relatively warm water locations in the Gulf of St. Lawrence and inshore southern New England, while in the deeper offshore waters off the northeastern U.S. and in the Bay of Fundy, maturation occurs at larger sizes (Krouse 1973; Aiken and Waddy 1980; Van Engel 1980; Campbell and Robinson 1983; Fogarty and Idoine 1988; Estrella and McKiernan 1989).

Lobsters typically form a brief pair bond for mating. Female lobsters can mate at any molt stage, but their receptivity peaks immediately after molting (Dunham and Skinner-Jabobs 1978; Waddy and Aiken 1990). Mating takes place within 24 hours of molting and usually within 30 minutes (Talbot and Helluy 1995). Eggs (7,000 to 80,000) are extruded and carried under the female's abdomen during the 9 to 12 month incubation period. Hatching and release of larvae occur while eggs are still attached to the female (Talbot and Helluy 1995). Seasonal timing of egg extrusion and larval hatching is somewhat variable among areas and may also vary due to seasonal weather patterns. Overall, hatching tends to occur over a 4 month period from May through September, occurring earlier and over a longer period in the southern part of the range.

Smaller lobsters molt more often than larger ones; however, larger females (greater than120 mm carapace length) can spawn twice between molts, making their relative fecundity greater than females within one molt of legal size (Waddy et al. 1995). Larger lobsters produce eggs with greater energy content and thus, may produce larvae with higher survival rates (Attard and Hudon 1987). Once the eggs mature, prelarvae are released by the female over the course of several days. For the first three molt stages (15-30 days), larvae remain planktonic. During settlement, fourth stage post larvae exhibit strong habitat selection behavior and seek small shelter-providing substrates, with the greatest abundance of newly settled lobsters occurring in cobble beds (Wahle and Steneck 1991; Cobb and Wahle 1994; Palma et al. 1999). (See section 3.2 – Description of Physical Environment for more information on lobster habitat selection behavior).

During their first year on the sea bottom, lobsters move little and can be found within a meter of where they settled (Wahle 1992; Palma et al. 1999). They do not usually emerge from their shelters until reaching about 25 mm in carapace length (Wahle 1992; Cobb and Wahle 1994). As they grow, their daily and annual ranges of movement increase. Adolescent phase lobsters are found on a variety of bottom types, usually characterized by an abundance of potential shelters. By the time lobsters reach sexual maturity, the annual range of lobster averages just over 20 miles (32 km) (Campbell and Stacko 1985; Campbell 1986). In general, mature legal lobsters are more abundant offshore and in deeper water (Harding and Trites 1989). For the offshore trap fishery, the deep water canyons contain habitat with an abundance of favorable potential shelters. Clay and mud allow lobsters to excavate burrows up to 1.5 meters long with bowl-like depressions that may shelter several lobsters at a time. However, while gravel and rocky habitat provide ready-made shelters, large sexually mature lobsters are capable of traversing great distances and show at least three different migration behaviors: those that do not migrate; those who migrate seasonally; and those who migrate long distances. Fogarty (1998) calculated that even a modest amount of offshore larvae supplied by larger sexually mature lobsters could add significantly to the resiliency of inshore areas.

Several studies have shown that lobster growth rates decline as food availability and quality decline (Castell and Budson 1974; Bordner and Conklin 1981; Capuzzo and Lancaster 1979). In laboratory studies, greater densities of lobster as well as limited space reduce growth rates (Stewart and Squires 1968; Hughes et al. 1972; Aiken and Waddy 1978; Van Olst et al. 1980; Ennis 1991). Growth rates of smaller lobster seem to be slower when they are in the presence of larger lobster (Cobb and Tamm 1974, 1975). All of these variables have been shown to influence the frequency of molting and/or the length of the molt increments.

The adult American lobster is the largest mobile benthic invertebrate in the North Atlantic. Estrella and Morrissey (1997) reference multiple tagging studies in the offshore (Saila and Flowers, 1968; Cooper and Uzmann, 1971, 1980; Uzmann et. al. 1977; Fogarty et al, 1980; Campbell et al, 1984) and southern nearshore (Morrissey, 1971; Briggs and Muschacke, 1984) areas supporting the movement of large, sexually mature lobster from offshore to inshore areas with the potential for individual lobster from different stocks becoming intermixed. A tagging study in the Outer Cape Area (Estrella and Morrissey, 1997) indicated that lobster recaptured within 200 days of tagging were capable of traveling a notable distance from the point of release. Larger, legal-sized, egg-bearing lobsters were found to travel greater distances (an average of about 26 km) than sublegal individuals (Estrella and Morrissey, 1997).

Estrella and Morrissey (1997) also reference the research of Cooper and Uzmann (1971) and Uzmann et al. (1977) indicating that tagged lobsters were observed to move to deep canyon areas in late fall and winter, migrating back to shoaler water in spring and summer. The recapture patterns in these experiments represent movement from Georges Bank and deepwater canyons to the south to areas east of Cape Cod. Estrella and Morrissey (1997) found in their tagging work that tagged lobsters exhibited a northerly and westerly movement pattern along the eastern shore of Cape Cod, consistent with the findings of Morrissey (1971) where movements from eastern Cape Cod into Cape Cod Bay were

observed. These studies support the movement and mixing of inshore and offshore lobster stocks. Consequently, this supports the theory that lobster move between stock areas and management areas.

The relatively large size of the American lobster in its niche and large claws make it an important predator. Adult lobsters are omnivorous, feeding largely on crabs, molluscs, polychaetes, sea urchins, and sea stars (Ennis 1973; Carter and Steele 1982; Weiss 1970). Live fish and macroalgae are also part of the natural diet. Lobsters are opportunistic feeders, so their diet varies regionally. In areas where lobster traps are numerous, bait in lobster traps are a substitute for the normal diet but are known to be nutritionally deficient in comparison. Lobster larvae and postlarvae eat zooplankton during their first year (Lavalli 1988). Copepods and decapod larvae are common prey items, but cladocerans, fish eggs, nematodes, and diatoms have been noted.

Factors Affecting Survival

Post Settlement Mortality

The natural mortality rate in post settlement lobster is generally considered to be low because they are a long-lived species that produce fairly small egg clutches, carry their eggs for months until they hatch, and are not very vulnerable to predation, especially as they become larger. A low and stable natural mortality rate seems less certain for inshore lobster stocks south of Cape Cod (ASMFC 2006a). The dominant source of natural mortality includes predation, disease, and extreme environmental conditions. Predation pressures seem related to size and habitat. The presence of shelter greatly reduces predation mortality (Cobb et al., 1986; Richards, 1992). Mortality due to predation decreases as the lobster grows (Wahle 1992). The effects of disease can be as profound as predation or exploitation (Anderson and Hart, 1979; Hart 1990). A number of animals parasitize lobsters, including protozoa, helmintha, and copepods. Aiken and Waddy (1986) and Sherburne and Bean (1991) reported a cyclical infestation of the ciliate *Mugardia* spp. in lobsters. Eggs are subject to high mortality rates by a nemertean worm, *Pseudocarcinonemertes homari*. A well-known disease that leads to the development of gaffkemia, a fatal infection (Stewart 1980), is caused by the bacteria *Aerococcus viridans*.

Shell Disease

External bacteria that digest the minerals in a lobster's shell cause shell disease. Shell disease is believed to be the result of opportunistic bacteria exploiting an injury or poor physiological state of the lobster (Getchell 1989). Ovigerous female lobsters display the highest rate of infection and carapace damage because they molt less frequently and therefore, have older shells. There has been a recent increase in the incidence of shell disease in the southern New England area. The consequences of shell disease on natural mortality are not known. The recent increase in shell disease may also be an indication of stresses in the lobster populations. Laboratory studies have shown that lobster with shell disease can heal themselves by molting out of the diseased shell and replacing it with a new healthy one. However, if the disease-causing bacteria become thick enough to penetrate completely through a lobster's shell, then internal lesions may lead to a compromised immune system or death. Ecdysone, a hormone that controls the molting process in lobster, has been found at levels well above normal in shell-diseased lobster, indicating that severe cases of the disease may interfere with normal molting and result in early molting (Biggers and Laufer, 2004). Since the disease is most prevalent in egg-bearing females, early molting may cause declines in reproduction.

Predation

Lobster are preyed upon by a variety of bottom inhabiting species, including teleost fish, sharks, rays, skates, octopuses, and crabs (Phillips and Sastry, 1980). Larvae are subject to predation in the water column, and postlarvae are vulnerable to predation by mud crabs, cunner, and an array of other bottom-feeding finfish species after settlement. However, once postlarvae have established a form of shelter, they are thought to be relatively safe from fish predators (Wahle and Steneck 1992) but not necessarily

invertebrates, such as burrowing crabs (Lavalli and Barshaw 1986). Mud crabs are abundant throughout the northeast as are green crabs and rock crabs, which are also suspected predators on post-larvae. When not in their burrows, the foraging early benthic phase and larger juvenile lobsters are prey to sculpin, cunner, tautog, black sea bass, and sea raven (Cooper and Uzmann 1980). Atlantic cod, wolffish, goosefish, tilefish, and several species of shark consume lobsters up to 100 mm CL (Cooper and Uzmann 1977; Herrick 1909). With the recovery of the striped bass resource, substantial predation of sublegal lobster by striped bass has been reported. While settling lobsters suffer extraordinarily high predation rates, and pre-recruits and fully-recruited lobsters are subject to predation when foraging, larger lobsters (greater than100 mm in carapace length) may be immune to predation.

Competition for Habitat

Lobsters and crabs compete for space and food (Richards et al., 1983; Cobb et al., 1986; Richards and Cobb, 1986), though evidence also indicates that rock crabs are a significant food source for the condition, growth and reproduction of lobsters (Gendron, et al 2001). These studies show competition between lobsters and crabs caused a redistribution of individuals. Lobsters that lost space to their competitors also showed an increased mortality. Intra-specific competition among lobsters is well known (O'Neill and Cobb, 1979). Large body size and claw size are particularly important in determining competitive dominance among lobsters selecting shelters. When local population densities increase, larger lobsters diffuse to habitats where total population densities are lower (Steneck 1989; Lawton and Lavalli 1995). Mortalities that result from aggression between lobsters may not represent predation but do represent an additional source of natural mortality.

Climate Change

American lobster inhabit the cold-water regions of the northwest Atlantic, from the mid-Atlantic coast of the United States to maritime Canada. A cold-blooded crustacean, their body temperature is directly related to water temperature. Changes in water temperature, therefore, can affect the lobster's biology and behavior. As water temperature increases, lobster expend more energy on respiration and have less energy for feeding, reproduction, growth, and fighting disease (New England Aquarium website, 2013). With this in mind, scientists and lobstermen alike are concerned about the effects of rising ocean temperatures on lobster stocks.

Ocean water temperatures are increasing, including those within the Northeast Shelf Large Marine Ecosystem which covers the American lobster's home range in the United States. The Northeast Shelf sea surface temperature (SST) reached a record high in the summer of 2012, of 14 degrees Celsius (57.2 degrees Fahrenheit). In comparison, the average SST has been lower than 12.4 degrees Celsius (54.3 degrees Fahrenheit) over the last three decades (NOAA Spotlight, April 25, 2013). This trend is particularly pervasive in one part of the Northeast Shelf Ecosystem, the Gulf of Maine (GOM), which is home to the largest concentration of lobsters in the US, with the State of Maine responsible for more than 80 percent of the annual lobster harvest (NMFS, 2013). In 2012, the GOM SST reached an all-time high and temperatures are rising at a faster rate over the past decade than any previous decade (Mills et al 2013). Dubbed the "ocean heat wave," temperatures in the GOM since 2011 have increased at a rate 10 times that observed since 1982. This rapid increase in temperature by nearly 2 degrees Celsius has resulted in substantial changes in the GOM marine ecosystem (Mills et al, 2013).

Even before the outbreak of the 2012 ocean heat wave, high ocean temperatures have had impacts on lobster. At higher sea temperatures, lobster are more susceptible to diseases such as epizootic shell disease which wiped out the inshore Rhode Island lobster fishery in the 1990's (Wahle et al, 2009, from Mills et al, 2013). This form of shell disease is caused by a bacterium and results in severe pitting of the lobster's exoskeleton and can cause death and may affect reproduction as egg-bearing female lobster tend to molt early to discard their diseased shells (Somers, 2013). Ultimately, it affects the marketability and the price of lobster, impacting the fishermen.

In 1999, a "perfect storm" of adverse conditions led to significant lobster mortality, when the Long Island Sound (LIS) lobster fishery suffered a catastrophic lobster die-off from which the fishery never fully recovered. Researchers believe that a deadly combination of factors such as high water temperatures and low dissolved oxygen levels contributed to the die-off which resulted in lobster fishermen hauling back dead and dying lobsters in their traps (Pearce and Balcom, 2005). The continuous above average water temperatures and other factors may have suppressed the immune systems of the lobsters, limiting their ability to ward off the parasitic amoebae that cause shell disease (Pearce and Balcom, 2005). The increasing water temperatures have continued to impact the SNE lobster stock and scientists believe that lobster are reacting to the higher temperatures by moving to cooler, deeper waters (ASMFC, 2010) or to cooler, more northerly, waters. The high ocean temperatures are believed to be part of the reason why the SNE lobster stock is suffering from recruitment failure (ASMFC, 2010; see further discussion in Chapter 1).

Although high temperatures are believed to have contributed to the decline of the SNE lobster fishery, the high temperatures in the GOM have yielded some benefits for lobster, which has record high abundance and harvest levels. Warmer GOM waters have allowed for more rapid growth and higher fecundity (McDonnell et al, 2013). The high abundance of lobster in the GOM can be credited to warmer waters but also less natural predators such as cod, and an abundant food supply from the bait of millions of lobster traps (McDonnell et al, 2013).

Record GOM catches, however, have not yielded the economic benefits to the lobster industry that would be expected. The lobster fishery is a recruitment fishery, with the largest percentage of lobster harvested just after recruiting into the fishery after molting. The Maine lobster fishery saw the molt occurring about four weeks earlier than normal in 2012 (Porter, T., 2012). High catches of lobster, most of which was low-quality soft-shelled or "shedder" lobster, caused a supply glut and led to low prices (DiColo et al, 2012; also see Chapter 3 on lobster prices).

Lobster fishers are working to improve their marketing to find a way to keep prices high as catches continue at record levels. Climate change appears to be altering the fishing industry in the northeast as stocks adjust to compensate for temperature and ecosystem changes. These changes may result in new opportunities as new fisheries develop from the arrival of species from outside the range, while long-term historic fisheries may no longer be viable (Mills et al, 2013). The industry, scientists, and managers are challenged to find ways to forecast the movement and impacts of climate change on fish species to ensure that economic benefits may be realized.

Interactions with Non-target Species

Several marine fish and shellfish species are incidentally caught in the directed lobster trap fishery. These species vary depending on seasons and geographic area. Size of individuals caught in lobster traps is generally limited by the circular openings in the entrance of the trap as well as the escape vent size. This section discusses, on a qualitative level, some species that are most likely expected to be caught in lobster traps. This is not meant to be an exhaustive list of all the regulated and non-regulated species that may be caught in the traps.

The coastal lobster trap fishery in Massachusetts Bay and the Gulf of Maine is a seasonal one that directly targets lobster. Bycatch species include various species of crabs (*Cancer spp.*), and unregulated benthic finfish species such as sculpins (*Myoxocephalus spp.*), sea raven (*Hemitripterus americanus*), sea robins (*Prionotus spp.*), wrymouth eel (*Cryptacanthoides maculates*), lumpfish (*Cyclopterus lumpus*), Atlantic tomcod (*Microgadus tomcod*), and windowpane flounder (*Scopthalmus aquosus*). Regulated species such as cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), pollock (*Pollachius virens*), and red hake (*Urophycis chuss*) may be encountered in lobster traps. Flatfish such as yellowtail flounder (*Limanda ferrugina*), winter flounder (*Pseudopleuronectes americanus*) and American plaice (*Hippoglossiodes*

platessoides) may also be encountered in the traps. Regulated species to a varying degree are sometimes harvested if the vessel has the associated permits necessary to do so, as required under 50 CFR part 648.

South of New England, the trap fishery remains directed on lobster although some vessels, with the appropriate permits, may seasonally focus their efforts on finfish such as tautog (*Tautoga onitis*), scup (*Stenotomus chrysops*) and black sea bass (*Centropristis striata*) in the coastal fisheries from Nantucket Sound south to North Carolina. Incidental catch of non-Federally regulated species such as crabs (*Cancer spp.*), four-spot flounder (*Paralychthys oblongus*), among others is likely. All vessels with a Federal lobster permit are required to comply with the lobster gear specifications set forth under the Federal lobster regulations at 50 CFR § 697.21 regardless of whether lobster is the target species. Concerned with the impacts on commercial fishing enterprises from differing management systems, the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) and the Commission requested that NMFS provide an exemption from the lobster gear requirements to black sea bass fishers in the Mid-Atlantic area, specifically in Lobster Management LCMA 5. Black sea bass fishermen typically use smaller escape vents in their traps than that required by the Federal lobster regulations and may use as many as 1,500 traps, compared to the maximum lobster trap limit of 1,440 in this management area. LCMA 5 has historically represented less than 2 percent of total coastwide lobster landings, and these dual permit holders tend to direct their fishing on black sea bass, with lobster as a marketable bycatch. The Mid-Atlantic Council and Commission recommended further that the incidental lobster allowance that applies to non-trap lobster fishermen be applied to exempted black sea bass fishers. In response to these recommendations and after several opportunities for public comment, NMFS published a final rule in the Federal Register on March 13, 2001 (66 FR 14500). This rule allows black sea bass fishers who concurrently hold limited access lobster and limited access black sea bass permits to temporarily request to enter into the LCMA 5 waiver program, which allows them to participate in a directed black sea bass trap fishery in LCMA 5 while exempt from the lobster trap gear specifications. While in the waiver program, the vessels are limited to the non-trap lobster possession limits.

In the offshore component of the fishery, Federal lobster vessels direct their trap fishing on lobster. Some bycatch of regulated and non-regulated finfish and shellfish species is known to occur. Specifically, the regulated species mentioned above as well as Atlantic wolf fish (*Anarhicas lupus*), white hake (*Urophycis tenuis*), cusk (*Brosme brosme*), and red fish (*Sebastes fasciatus*) may also be encountered. The red crab fishery is a directed trap fishery occurring in the deeper canyons along Georges Bank. Of the generally small number of participants in this fishery, some subset may hold Federal lobster permits and therefore may keep lobster as a bycatch for commercial purposes as regulations allow. Due to the depths at which the red crab fishery is prosecuted, lobsters are not as likely to be encountered in red crab directed trap fishing operations.

Physical Habitat Characteristics

Juvenile and adult American lobsters occupy a wide variety of benthic habitats from the intertidal zone to depths of 700 meters. They are most abundant in relatively shallow coastal waters. Shelter is a critical habitat requirement for lobsters.

Once released into the water column, the American lobster larvae remain planktonic for four life-stages before settling to the sea floor (ASMFC 2000). The time larvae spend between hatching and stage IV also varies, largely with the ocean temperature, ranging from approximately 10 days at 23°C to nearly two months at 10°C. During settlement, 4th stage post-larvae exhibit strong habitat selection behavior and seek small shelter-providing substrates (Hudon 1987; Wahle and Steneck 1991, 1992; Incze et al. 1997; Palma et al. 1999). The highest abundance of newly settled lobster is in cobble beds (Wahle and Steneck 1991; Cobb and Wahle 1994; Palma et al. 1999) but they have been found at low densities in marsh grass root mats in southern New England (Able et al.1988). Young-of-the-year lobsters are rare or absent from

sediment substrates and eel grass habitats although early benthic phase lobsters (sensu Steneck 1989; Wahle and Steneck 1991 for lobster less than 40 mm in carapace length) are not.

Early benthic phase lobster are cryptic and quite restricted in habitat use (Wahle and Steneck 1991; Lawton and Lavalli 1995). They usually do not emerge from their shelters until reaching about 25 mm CL (Wahle 1992; Cobb and Wahle 1994). Larger, but still immature, adolescent phase lobster are found on a variety of bottom types, usually characterized by an abundance of potential shelters. Inshore, they are found in greatest abundance in boulder areas (Cooper and Uzmann 1980) but they also seek shelter under large algae such as kelp (Bologna and Steneck 1993). Adolescent-phase lobster also live on relatively featureless substrate where juvenile population densities are generally low (Palma et al.1999). Juvenile densities are high in shallow water, (0-30 ft) on sand, and mud substrate in inshore Massachusetts waters (Estrella, personal communication).

The following description of lobster habitats in the Northeast region of the U.S. (Maine to North Carolina) is based primarily on a report prepared by Lincoln (1998) from a variety of primary source documents. This information has been supplemented by the addition of some more recent research results. Table 3.11 summarizes information on lobster densities by habitat type. Unless otherwise noted, the information noted below was originally provided by Cooper and Uzmann (1980).

Inshore Lobster Habitats

Estuaries

- *Mud base with burrows* – These occur primarily in harbors and quiet estuaries with low current speeds. Lobster shelters are formed from excavations in soft substrate. This is an important habitat for juveniles, and densities can be very high, reaching 20 animals per square meter.
- *Rock, cobble and gravel* – Juveniles and adolescents have been reported on shallow bottom with gravel and grave-like sand substrates in the Great Bay Estuary, NH, on gravel/cobble substrates in outer Penobscot Bay, ME (Steneck and Wilson 1998), and in rocky habitats in Narragansett Bay, RI (Lawton and Lavalli 1995). Densities in Penobscot Bay exceeded 0.5 juveniles and 0.75 adolescents/m^2. According to unpublished information cited by Lincoln (1998), juvenile lobsters in Great Bay prefer shallow bottoms with gravely sand substrates.
- *Rock/shell* – Adult lobsters in the Great Bay Estuary use sand and gravel habitats in the channels but seem to prefer a rock/shell habitat more characteristic of the high temperature, low salinity regimes of the central bay.

Salt Marshes/Peat

Lobster shelters are formed from excavations cut into peat. Reefs form from blocks of salt marsh peat that break and fall into adjacent marsh creeks and channels and seem to provide moderate protection for small lobsters from predators (Barshaw and Lavalli 1988). Densities are high (up to 5.7/m^2).

Kelp beds

Kelp beds in New England consist primarily of *Laminaria longicruris* and *L. saccharina*. Lobsters were attracted to transplanted kelp beds at a nearshore study site in the mid-coast region of Maine, reaching densities that were almost ten times greater than in nearby control areas (Bologna and Steneck 1993).

Lobsters did not burrow into the sediment but sought shelter beneath the kelp. Only large kelp (greater than 50 cm in length) was observed sheltering lobsters and was used in the transplant experiments.

Eelgrass

Lobsters have been associated with eelgrass beds in the lower portion of the Great Bay Estuary in New Hampshire (Short et al. 2001). Eighty percent of the lobsters collected from eelgrass beds were adolescents. Average density was $0.1/m^2$, greater than reported by Barshaw and Lavalli (1988). In mesocosm experiments, Short et al. reported that lobsters showed a clear preference for eelgrass over bare mud. This research showed that adolescent lobsters burrow in eelgrass beds, use eelgrass as an overwintering habitat, and prefer eelgrass to bare mud.

Intertidal Zone

Research in Maine has demonstrated the presence of early settlement, postlarval, and juvenile lobsters in the lower intertidal zone (Cowan 1999). Two distinct size classes were consistently present: 3-15 mm CL and 16-40 mm in carapace length. Monthly mean densities during a 5-year period ranged from 0-8.6 individuals/m^2 at 0.4 m below mean low water. Preliminary results indicate that areas of the lower intertidal zone serve as nursery grounds for juvenile lobster.

Inshore Rock Types

- *Sand base with rock* – This is the most common inshore rock type in depths greater than 40 m. It consists of sandy substrate overlain by flattened rocks, cobbles, and boulders. Lobsters are associated with abundant sponges, Jonah and rock crabs. Shelters are formed by excavating sand under a rock to form U-shaped, shallow tunnels. Densities of sub-adult lobsters are fairly high (Table 3.11).
- *Boulders overlaying sand* – This habitat type is relatively rare in inshore New England waters. Compared to other inshore rocky habitats, densities are low (Table 3.11).
- *Cobbles* – Lobsters occupy shelters of varying size in the spaces among rocks, pebbles, and boulders. Densities as high as 16 lobsters per square meter have been observed, making this the most densely populated inshore rock habitat for lobsters in New England.
- *Bedrock base with rock and boulder overlay* – This rock type is relatively common inshore from low tide to depths of 15-45 m. Shelters are formed by rock overhangs or crevices. Encrusting coralline algae and attached organisms such as anemones, sponges, and mollusks cover exposed surfaces. Green sea urchins and starfish are common. Cunner, tautog, sculpin, sea raven, and redfish are the most abundant fish. Lobster densities are low (Table 3.11).
- *Mud-shell/rock substrate* – This habitat type is usually found where sediment discharge is low and shells make up the majority of the bottom. It is best described off Rhode Island. Densities are low.

Offshore Lobster Habitats

- *Sand base with rocks* – Although common inshore (see above), this habitat is rather restricted in the offshore region except along the north flank of Georges Bank.
- *Clay base with burrows and depressions* – This habitat is common on the outer continental shelf and slope. Lobsters excavate burrows up to 1.5 m long. There are also

large, bowl-like depressions that range in size from 1 to 5 m in diameter and may shelter several lobsters at a time. Minimum densities of 0.001 lobsters/m^2 have been observed in summer (Table 3.11).

- *Mud-clay base with anemones* – This is a common habitat for lobsters on the outer shelf or upper slope. Forests of mud anemones (*Cerianthus borealis*) may reach densities of 3 or 4 per square meter. Depressions serve as shelter for relatively small lobsters at minimum densities of 0.001/m^2 (Table 3.11).
- *Mud base with burrows* – This habitat occurs offshore mainly in the deep basins, in depths up to 250 m. This environment is extremely common offshore. Lobsters occupy this habitat, but no density estimates are available.

Submarine Canyons

There are more than 15 submarine canyons that cut into the shelf edge on the south side of Georges Bank. These canyons were first surveyed in the 1930s, but they were not fully explored until manned submersibles were used extensively in the 1980s. Detailed information on canyon habitats for American lobster is available primarily for Oceanographer Canyon but is generally applicable to other major canyons on Georges Bank. These canyons present a diverse group of habitat types. Concentrations of adolescents and adult lobsters are substantially greater in submarine canyons than in nearby areas that are occupied mostly by adults (Cooper et al. 1987). The following information on lobster habitats is extracted from Cooper and Uzmann (1980) and Cooper et al. (1987).

- *Canyon rim and walls* – Sediments consist of sand or semi-consolidated silt with less than 5% overlay of gravel. The bottom is relatively featureless. Burrowing mud anemones are common. Lobster densities are low (Table 3.11).
- *Canyon walls* – Sediments consist of gravely sand, sand, or semi-consolidated silt with more than 5% gravel. The bottom is relatively featureless. Burrowing mud anemones are common, as are Jonah crabs, ocean pout, starfish, rosefish, and squirrel hake. Lobster densities are a little greater than in substrates that contain less gravel (see above).
- *Rim and head of canyons at base of walls* – Sand or semi-consolidated silt substrate is overlain by siltstone outcrops and talus up to boulder size. The bottom is very rough and is eroded by animals and current scouring. Lobsters are associated with rock anemones, Jonah crabs, ocean pout, tilefish, starfish, conger eels, and white hake. Densities are highly variable but reach up to 0.13 lobsters per square meter (Table 3.11).
- *Pueblo villages* – This habitat type exists in the clay canyon walls and extends from the heads of canyons to middle canyon walls. It is heavily burrowed and excavated. Slopes range from 5 to 70 degrees, but are generally greater than 20 degrees and less than 50 degrees. Juvenile and adult lobsters and associated fauna create borings up to 1.5 m in width, 1 m in height, and 2 m or more in depth. Lobsters are associated with Jonah crabs, tilefish, hermit crabs, ocean pout, starfish, and conger eels. This habitat may well contain the greatest densities of lobsters found offshore.

Table 3.11 - American Lobster Habitats and Densities

Habitat	Lobster Densities (nos/square meter)	Lobster Sizes (carapace length = CL)	Source
ESTUARIES			
Mud base with burrows	Up to 20	Small juveniles	Cooper & Uzmann 1980
	< 0.01	Adults	Cooper & Uzmann 1980
Rock, cobble & gravel	> 0.5	Juveniles	Steneck & Wilson 1998
	> 0.75	Adolescents	Steneck & Wilson 1998
Rock/shell			
PEAT	Up to 5.7		Barshaw & Lavalli 1988
KELP BEDS	1.2-1.68	Adolescents (51-61 mm)	Bologna & Steneck 1993
EEL GRASS	< 0.04	Juveniles and adolescents	Barshaw & Lavalli 1988
	0.1	80% adolescents	Short et al. 2001
INTERTIDAL ZONE	0-8.6	Juveniles and adolescents	D. Cowan 1999
INSHORE ROCK TYPES			
Sand base with rock	3.2	Avg 40 mm	Cooper & Uzmann 1980
Boulders overlaying sand	0.09-0.13		Cooper & Uzmann 1980
Cobbles	Up to 16		Cooper & Uzmann 1980
Bedrock base with rock and boulder overlay	0.1-0.3		Cooper & Uzmann 1980
Mud-shell/rock substrate	0.15		Cooper & Uzmann 1980
OFFSHORE			
Sand base with rock	Not available	Not available	
Clay base with burrows and depressions	Minimum 0.001		Cooper & Uzmann 1980
Mud-clay base with anemones	Minimum 0.001	50-80 mm in depressions	Cooper & Uzmann 1980
SUBMARINE CANYONS			
Canyon rim and walls	0-0.0002	Adolescents and adults	Cooper et al. 1987
Canyon walls	Up to 0.001	Adolescents and adults	Cooper et al. 1987
Rim and head of canyons and at base of walls	0.0005-0.126	Adolescents and adults	Cooper et al. 1987
Pueblo villages	0.0005-0.126	Adolescents and adults	Cooper et al. 1987

Note: For this table, Juvenile lobsters are < 40 mm CL; adolescents 40-70 mm CL; adults >70 mm CL.

3.5 PROTECTED RESOURCES

Protected Resources

There are numerous species which inhabit the environment within the management unit of American lobster that are afforded protection under the Endangered Species Act of 1973 (ESA; i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA). Fifteen are classified as endangered or threatened under the ESA, while the remaining species are protected by the provisions of the MMPA.

The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531–1534) establishes protection and conservation of threatened and endangered species and the ecosystems upon which they depend. The ESA is administered by the USFWS and NMFS. Under the ESA, an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. Section 7 of the ESA requires that all Federal agencies consult with the USFWS or NMFS, as applicable, before initiating any action that could affect an ESA-listed species.

Under the ESA, the NMFS has the responsibility to determine whether the proposed management measures would adversely affect federally listed threatened or endangered species and their critical habitat. If, upon review of existing data, it is determined that these species or habitats may be affected by the proposed measures, a Biological Assessment (BA) must be prepared to identify the nature and extent of adverse impacts, and recommend measures that would avoid the habitat or species or reduce potential impacts to acceptable levels.

The BA would be used in the consultation process as a basis for determining whether the adverse effects are likely to jeopardize any listed species or adversely affect their critical habitats. After consultation, the NMFS would issue a Biological Opinion (BO) expressing their opinion about the potential for impacts to occur. If their opinion is that the proposed measures would not likely jeopardize any listed species or their designated critical habitat, they may also issue an incidental take statement as an exception to the prohibitions in the ESA. If it is determined that no federally listed (or proposed) species or their designated critical habitat would be affected, no further action is necessary.

Under the authority of the MMPA of 1972 (16 U.S.C. 1361 et seq.), the Secretary of Commerce is responsible for the protection of all marine mammals except walruses, polar bears, sea otters, manatees, and dugongs, which are the responsibility of the Secretary of the Interior. These responsibilities have been delegated to NMFS and the USFWS, respectively, and include providing overview and advice to regulatory agencies on all Federal actions that might affect these species.

The MMPA prohibits the "take" of marine mammals, with certain exceptions, in waters under U.S. jurisdiction and by U.S. citizens on the high seas. Under Section 3 of the MMPA, "take" is defined as "harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill any marine mammal." "Harassment" is defined as any act of pursuit, torment, or annoyance that has the potential to injure marine mammal stock in the wild; or has the potential to disturb marine mammal stock in the wild by disrupting behavioral patterns, including migration, breathing, nursing, breeding, feeding, or sheltering. In cases where U.S. citizens are engaged in activities, other than fishing, that result in "unavoidable" incidental take of marine mammals, the Secretary of Commerce can issue a "small take authorization." The authorization can be issued after notice and opportunity for public comment if the Secretary of Commerce finds minor impacts. The MMPA requires consultations with NMFS if impacts on marine mammals are unavoidable. The following list of species, protected either by the ESA, the MMPA, or the Migratory Bird Act of 1918, may be found in the environment used by American lobster (Pinniped and cetacean

species considered present in the action area based on NOAA Marine Mammal Health and Stranding Response Program Database):

Cetaceans

Species	Status
North Atlantic right whale (*Eubalaena glacialis*)	Endangered
Humpback whale (*Megaptera novaeangliae*)	Endangered
Fin whale (*Balaenoptera physalus*)	Endangered
Sei whale (*Balaenoptera borealis*)	Endangered
Blue whale (*Balaenoptera musculus*)	Endangered
Sperm whale (*Physeter macrocephalus*	Endangered
Minke whale (*Balaenoptera acutorostrata*)	Protected
Northern bottlenose whale (*Hyperoodon ampullatus*)	Protected
Beaked whale (*Ziphius and Mesoplodon spp*.)	Protected
Pygmy or dwarf sperm whale (*Kogia spp*.)	Protected
False killer whale (*Pseudorca crassidens*)	Protected
Melonheaded whale (*Peponocephala electra*)	Protected
Rough-toothed dolphin (*Steno bredanensis*)	Protected
Risso's dolphin (*Grampus griseus*)	Protected
Pilot whale (*Globicephala spp*.)	Protected
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected
Common dolphin (*Delphinus delphis*)	Protected
Spotted and striped dolphins (*Stenella spp*.)	Protected
Bottlenose dolphin (*Tursiops truncatus*)	Protected
White-beaked dolphin (*Lagenorhynchus albirostris*)	Protected
Harbor porpoise (*Phocoena phocoena*)	Protected

Pinnipeds

Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected
Hooded seal (*Cystophora cristata*)	Protected
Harp seal (*Phoca groenlandicus*)	Protected
Ringed seal (*Phoca hispida*)	Protected
Bearded seal (*Erignathus barbatus*)	Protected

Sea Turtles

Species	Status
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered
Hawksbill sea turtle (*Eretmochelys imbricata*)	Endangered
Loggerhead sea turtle (*Caretta caretta*)	Threatened

Fish

Species	Status
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)	Endangered

Atlantic sturgeon *(Acipenser oxyrinchus*)	
Gulf of Maine DPS	Threatened
New York Bight DPS	Endangered
Chesapeake Bay DPS	Endangered
Carolina DPS	Endangered
South Atlantic DPS	Endangered
Cusk (*Brosme brosme*)	Candidate

Birds

Species	Status
Roseate tern (*Sterna dougallii dougallii*)	Endangered
Piping plover (*Charadrius melodus*)	Endangered

Critical Habitat Designations

Species	Area
Atlantic Salmon	GOM

Candidate species are those petitioned species that NMFS is actively considering for listing as endangered or threatened under the ESA. Candidate species also include those species for which NMFS has initiated an ESA status review through an announcement in the *Federal Register*.

Candidate species receive no substantive or procedural protection under the ESA; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed project. NMFS has initiated review of recent stock assessments, bycatch information, and other information for these candidate and proposed species. The results of those efforts are needed to accurately characterize recent interactions between fisheries and the candidate/proposed species in the context of stock sizes. Any conservation measures deemed appropriate for these species will follow the information reviews. Please note that once a species is proposed for listing the conference provisions of the ESA apply (see 50 CFR 402.10).

Many of the protected species that occur in the New England and Mid-Atlantic waters have never been observed as bycatch in the lobster trap/pot fishery, nor have they been documented as killed by lobster trap/pot gear in the stranding records. Based on this information, detailed species accounts are given below for endangered, threatened or protected species that are likely to be incidentally taken in the lobster trap/pot fishery. The remaining non ESA-listed species that are not likely to be affected will not be discussed further in this statement.

3.5.1 Species Potentially Affected

North Atlantic Right Whale

The North Atlantic right whale (*Eubalaena glacialis*) is listed as endangered under the ESA and is among the most endangered large whale species in the world. Two populations, an eastern and a western, are typically recognized (IWC, 1986). However, animals are sighted so infrequently in the eastern Atlantic, it is unclear whether a viable population still exists (NMFS, 1991a). This analysis focuses on the western North Atlantic population of right whales, which occurs in the proposed action area.

North Atlantic right whales are one of the most intensely studied cetacean species. Yet, despite decades of conservation measures, the population remains at low numbers. Fewer than 200 females are estimated in the population (Best et al. 2001). As of 2009, there were only an estimated 97 breeding females (Schick et al. 2009). Modeling work using data collected through the mid-1990s indicated that if the conditions that existed at that time were to continue, western North Atlantic right whales would be extinct within 200 years (Caswell et al. 1999).

The total number of North Atlantic right whales is estimated to be at least 396 animals in 2006 (Waring et al. 2011). The minimum rate of annual human-caused mortality and serious injury to right whales averaged 2.4 mortality or serious injury incidents per year during 2005 to 2009 (Waring et al. 2011). Of these, fishery interactions resulted in an average of 0.8 mortality or serious injury incidents per year, all in U.S. waters. The potential biological removal (PBR) level for this stock is 0.8 animals per year (Waring et al. 2011). PBR is the product of minimum population size, one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362) (Wade and Angliss 1997).

North Atlantic right whales have a wide distribution that overlaps with U.S. and Canadian commercial fishing grounds in the western Atlantic as well as shipping traffic to and from numerous ports. Coastal areas frequented by right whales are heavily developed. North Atlantic right whales generally occur west of the Gulf Stream, from the southeast U.S. to Canada (e.g., Bay of Fundy and Scotian Shelf) (Kenney 2002; Waring et al. 2009). They are not found in the Caribbean and have been recorded only rarely in the Gulf of Mexico. North Atlantic right whales are abundant in Cape Cod Bay between February and April (Hamilton and Mayo 1990; Schevill et al. 1986; Watkins and Schevill 1982) and in the Great South Channel in May and June (Kenney et al. 1986; Payne et al. 1990). North Atlantic right whales also frequent Stellwagen Bank and Jeffrey's Ledge, as well as Canadian waters including the Bay of Fundy and Browns and Baccaro Banks, in the spring through fall. The distribution of right whales in summer and fall seems linked to the distribution of their principal zooplankton prey (Winn et al. 1986). Calving occurs in the winter months in coastal waters off of Georgia and Florida (Kraus et al. 1988). Mid-Atlantic waters are used as a migratory pathway from the spring and summer feeding/nursery areas to the winter calving grounds off the coast of Georgia and Florida.

In terms of abundance, an exact count of right whales in the western North Atlantic cannot be obtained. Based on a census of individual whales using photo-identification techniques and an assumption of mortality for those whales not seen in 7 years, a total of 299 right whales was estimated in 1998 (Kraus *et al*. 2001), and a review of the photo-ID recapture database on July 6, 2010, indicated that 396 individually recognized whales were known to be alive during 2007 (Waring *et al.* 2011). Because this 2009 review was a nearly complete census, it is assumed this estimate represents a minimum population size. The minimum number alive population index for the years 1990-2007 suggests a positive trend in numbers. These data reveal a significant increase in the number of catalogued whales alive during this period, but with significant variation due to apparent losses exceeding gains during 1998-1999. Mean growth rate for the period was 2.4% (Waring *et al*. 2011).

Ship strikes and fishing gear entanglements are the principal factors believed to be retarding growth and recovery of western North Atlantic right whales population. Data collected from 1970 through 1999 indicate that anthropogenic interactions in the form of ship strikes and gear entanglements are responsible for a minimum of two-thirds of the confirmed and possible mortality of non-neonate right whales. Johnson et al. (2005) noted that any part of the gear (buoy line, groundline, floatline, and surface system line) creates a risk for entanglement. Several aspects of right whale behavior may contribute to this high entanglement frequency.

Of 31 recorded right whale entanglement events examined between 1993 and 2002, 24 (77.4 percent) involved animals with gear in the mouth (some included other points of gear attachment on the body as well) and 16 (51.6 percent) were entangled only at the mouth (Johnson et al. 2005). This suggests that a large number of entanglements occur while right whales feed, since open mouth behavior is generally associated with feeding only. Although the sample size was small for cases in which the point of gear attachment and the associated gear part could be examined, Johnson et al. (2005) reported that two out of three right whale floating groundline entanglements and six out of eight vertical line entanglements (buoy line and surface system lines) involved the mouth (note that some of these cases may have involved other body parts as well). In addition, three buoy line entanglement events involved the tail; the entanglement of one of these animals additionally involved groundline.

Right whales feed by swimming continuously with their mouths open, filtering large amounts of water through their baleen and capturing zooplankton on the baleen's inner surface. A study of right whale foraging behavior in Cape Cod Bay conducted by Mayo and Marx (1990) revealed that right whales feeding at the surface had their mouths open for approximately 58 minutes of each hour. Also, feeding right whales exhibited increased turning behavior and a convoluted path once they had found a sufficiently dense patch of zooplankton on which to feed. This behavior differed significantly from that of traveling whales that swam in relatively straight paths with their mouths closed. In addition, socializing whales (two or more whales at the surface occasionally making physical contact) exhibited even more twisted paths than feeding whales. Socializing was often associated with rolling and lifting the flippers above the water's surface, behaviors that may add to entanglement risk, especially from buoy line and surface system lines.

Goodyear (1996) studied well-known right whale feeding areas (Cape Cod/Massachusetts Bay, Great South Channel, and the Bay of Fundy) and reported that feeding behavior varies based on the location of prey. Right whales spend a substantial amount of time feeding below the surface in the Bay of Fundy, where no surface feeding activities were observed. In order to meet their metabolic needs, right whales must feed on dense aggregations of copepods. Right whales received most of their food energy (approximately 91.1 percent) during deep dives (average depth of 134 meters), with the remainder (approximately 9.9 percent) occurring through surface feeding. Right whales spend about one-third of their time surface feeding in the Cape Cod/Massachusetts Bay and Gulf of Maine areas, which may increase entanglement risk from buoy line and surface system lines during the times they visit these areas (December to May). While in the Great South Channel (April to June), right whales spend approximately 10 percent of the time feeding at the surface and 90 percent of the time feeding at lower depths. Not included in these numbers is one right whale that was entangled in both buoy line and groundline on the tail.

Humpback Whale

The North Atlantic humpback whale (*Megaptera novaeangliae*) is listed as an endangered species under the ESA. A Recovery Plan has been published and is in effect (NMFS 1991b).

In the western North Atlantic, humpback whales calve and mate in the West Indies during the winter and migrate to northern feeding areas during the summer months. Calves are recruited to the feeding grounds of their mothers in a practice referred to as maternal philopatry (Clapham and Mayo 1987; Katona and Beard 1990). In the Gulf of Maine, sightings are most frequent from mid-March through November between 41 degrees north and 43 degrees north, from the Great South Channel north along the outside of Cape Cod to Stellwagen Bank and Jeffrey's Ledge, and peak in May and August (CETAP 1982). Studies have matched 27 percent of the individuals on the Canadian Scotian Shelf to the Gulf of Maine population (Clapham et al. 2003) and one study identified a Gulf of Maine whale as far away as west

Greenland (Katona and Beard 1990). Small numbers of individuals may be present in New England waters year-round, including the waters of Stellwagen Bank (Clapham et al. 1993). They feed on a number of species of small schooling fishes, particularly sand lance, mackerel, and Atlantic herring, by targeting fish schools and filtering large amounts of water for their associated prey. Humpback whales have also been observed feeding on krill (Wynne and Schwartz 1999).

Photographic mark-recapture analyses from the Years of the North Atlantic Humpback (YONAH) project gave an ocean-basin-wide estimate of 11,570 animals during 1992/1993 and an additional genotype-based analysis yielded a similar but less precise estimate of 10,400 whales (95% c.i. = 8,000-13,600) (Waring *et al.* 2011). For management purposes under the MMPA, the estimate of 11,570 individuals is regarded as the best available estimate for the North Atlantic population (Waring *et al.* 2011). The best recent estimate for the Gulf of Maine stock is 847 whales, derived from a 2006 line-transect aerial sighting survey (Waring *et al.* 2011).

Population modeling, using data obtained from photographic mark-recapture studies, estimates the growth rate of the Gulf of Maine stock to be 6.5% for the period 1979-1991 (Barlow and Clapham 1997). More recent analysis for the period 1992-2000 estimated lower population growth rates ranging from 0 percent to 4.0 percent, depending on calf survival rate (Clapham *et al.* 2003 in Waring *et al.* 2011). However, it is unclear whether the apparent decline in growth rate is a biased result due to a shift in distribution documented for the period 1992-1995, or whether the population growth rates truly declined due to high mortality of young-of-the-year whales in U.S. Mid-Atlantic waters (Waring *et al.* 2011). Regardless, calf survival appears to have increased since 1996, presumably accompanied by an increase in population growth (Waring *et al.* 2011). Stevick *et al.* (2003) calculated an average population growth rate of 3.1% in the North Atlantic population overall for the period 1979-1993. The PBR for the Gulf of Maine stock of humpback whale is 1.1 whales per year (Waring *et al.* 2011).

As is the case with other large whales, the major known sources of anthropogenic mortality and injury of humpback whales are commercial fishing gear entanglements and ship strikes. Sixty percent of Mid-Atlantic humpback whale mortalities that were closely investigated showed signs of entanglement or vessel collision (Wiley et al. 1995). Between 1992 and 2001, at least 92 humpback whale entanglements and 10 ship strikes were recorded. Many carcasses also washed ashore or were spotted floating at sea for which the cause of death could not be determined. Based on photographs of the caudal peduncle of humpback whales, Robbins and Mattila (1999) estimated that at least 48 percent—and possibly as many as 78 percent—of the Gulf of Maine stock of humpback whales exhibit scarring caused by entanglement. These estimates are based on sightings of free-swimming animals that initially survive the encounter. Because some whales may drown immediately, the actual number of interactions may be higher. Decomposed and/or unexamined animals (e.g., carcasses reported but not retrieved or necropsied) represent "lost data", some of which may relate to human impacts (Waring et al. 2009).

Johnson et al. (2005) noted that any part of the gear (buoy line, groundline, floatline, and surface system line) creates a risk for entanglement. Johnson et al. (2005) also reported that of the 30 humpback whale entanglements examined in the study, 16 (53 percent) involved entanglements in the tail region and 13 (43 percent) involved entanglements in the mouth (note that in both cases, some entanglements included other points of gear attachment on the body). Although the sample size was small for cases in which the point of gear attachment and the associated gear part could be examined, two out of two floating groundline entanglements and four out of seven buoy line entanglements involved the mouth.[83] In

[83] Note that one humpback whale was entangled in both buoy line and groundline and was placed in both categories.

addition, five out of seven buoy line entanglements and three out of four gillnet floatline entanglements involved the tail (Johnson et al. 2005).[84]

Based on studies of humpback whale caudal peduncle scars, Robbins and Mattila (2000) reported that calves had a lower entanglement risk than yearlings, juveniles, and mature whales; the latter three maturational classes exhibited comparable levels of high probability scarring. Based on these data, as well as evidence that animals acquire new injuries when mature, the authors concluded that actively feeding whales may be at greater risk of entanglement. In any case, juveniles seemed to be at the most risk, possibly due to their relative inexperience.

Humpback whales employ a variety of foraging techniques, which differ from right whale foraging behavior, but which may create entanglement risk (Hain et al. 1982 and Weinrich et al. 1992). One such technique is lunge feeding, in which the whale swims toward a patch of krill or small fish, then lunges into the patch with its mouth agape. The flippers may aid in concentrating the prey or in maneuvering. Another feeding method, called "flick-feeding," involves flexing the tail forward when the whale is just below the surface, which propels water over the whale's head, temporarily disorienting its prey. The whale then swims with its mouth open, through the wave it created. A third foraging strategy is bubble feeding, in which whales swim upwards, while blowing nets or clouds of bubbles, in a spiral under a concentration of prey. This creates a barrier through which the disoriented fish cannot escape. The whales then swim up through the bubble formation, engulfing their prey. These techniques demonstrate that humpback whales commonly use their mouths, flippers, and tails to aid in feeding. Thus, while foraging, all body parts are at risk of entanglement.

Fin Whale

In 1976, the IWC's Scientific Committee proposed seven stocks for North Atlantic fin whales (*Balaenoptera physalus*): (1) North Norway, (2) West Norway-Faroe Islands, (3) British Isles-Spain and Portugal, (4) East Greenland-Iceland, (5) West Greenland, (6) Newfoundland- Labrador, and (7) Nova Scotia (Perry et al., 1999). However, it is uncertain whether these boundaries define biologically isolated units (Waring et al. 2009).

The present IWC scheme defines the North Atlantic fin whale stock off the eastern coast of the U.S., north to Nova Scotia, and east to the southeastern coast of Newfoundland as a single stock (Donovan 1991). However, information suggests some degree of separation within this population. A number of researchers have suggested the existence of fin whale subpopulations in the North Atlantic based on local depletions resulting from commercial whaling or genetics data (Mizroch and York 1984; Bérubé et al. 1998). Photo identification studies in western North Atlantic feeding areas, particularly in Massachusetts Bay, have shown a high rate of annual return by fin whales, both within years and between years, suggesting some level of site fidelity (Seipt et al. 1990).

This particular stock is considered strategic because the fin whale is listed as endangered under the ESA. A Recovery Plan for fin whales is currently awaiting legal process (Waring et al. 2009).

Fin whales inhabit a wide range of latitudes between 20 to 75 degrees north and 20 to 75 degrees south (Perry et al. 1999). Like right and humpback whales, fin whales are believed to use high latitude waters primarily for feeding, and low latitude waters for calving. However, evidence regarding where the

[84] Note that the entanglements in buoy line exceed the total of seven because some animals were entangled in multiple locations on their body (e.g., both the mouth and the tail).

majority of fin whales winter, calve, and mate is still scarce. Clark (1995) reported a general pattern of fin whale movements in the fall from the Labrador/Newfoundland region, south past Bermuda and into the West Indies, but neonate strandings along the U.S. Mid-Atlantic coast from October through January suggest the possibility of an offshore calving area (Clark 1995; Hain et al. 1992).

The predominant prey of fin whales varies greatly in different areas depending on what is locally available (IWC 1992). In the western North Atlantic, fin whales feed on a variety of small schooling fish (e.g., herring, capelin, and sand lance) as well as squid and planktonic crustaceans (Wynne and Schwartz 1999).

Various estimates have been provided to describe the current status of fin whales in western North Atlantic waters. One method used the catch history and trends in Catch Per Unit Effort (CPUE) to obtain an estimate of 3,590 to 6,300 fin whales for the entire western North Atlantic (Perry *et al.* 1999). Hain *et al.* (1992) estimated that about 5,000 fin whales inhabit the Northeastern U.S. continental shelf waters. The 2011 Stock Assessment Report (SAR) gives a best estimate of abundance for fin whales in the western North Atlantic of 3,985 (CV = 0.24). However, this estimate must be considered extremely conservative in view of the incomplete coverage of the known habitat of the stock and the uncertainties regarding population structure and whale movements between surveyed and unsurveyed areas (Waring *et al*. 2011). The minimum population estimate for the western North Atlantic fin whale is 3,269 (Waring *et al.* 2011). However, there are insufficient data at this time to determine population trends for the fin whale (Waring *et al.* 2011). The PBR for the western North Atlantic fin whale is 6.5.
Information on the abundance and population structure of fin whales worldwide is limited. NMFS recognizes three fin whale stocks in the Pacific for the purposes of managing this species under the MMPA: Alaska (Northeast Pacific), California/Washington/Oregon, and Hawaii. Reliable estimates of current abundance for the entire Northeast Pacific fin whale stock are not available. Stock structure for fin whales in the southern hemisphere is unknown and there are no current estimates of abundance for southern hemisphere fin whales.

Like right whales and humpback whales, anthropogenic mortality of fin whales includes entanglement in commercial fishing gear and ship strikes. Of 18 fin whale mortality records collected between 1991 and 1995, four were associated with vessel interactions, although the primary cause of mortality was not known. From 1996 to July 2001, there were nine observed fin whale entanglements and at least four ship strikes. Experts believe that fin whales are struck by large vessels more frequently than any other cetacean (Laist et al. 2001).

Fin whales exhibit lunge feeding techniques near the ocean surface, similar to humpback whales. Fin whales typically approach a prey patch horizontally, sometimes rapidly turning or rolling on their side inside a prey patch (Watkins and Schevill 1979). Fin whales have also been observed feeding below the surface and fairly close to the bottom in about 15 to 20 meters of water. Entanglement data from 1997 through 2003 indicate few records of fin whale entanglement events (Kenney and Hartley, 2001; Hartley et al. 2003; Whittigham et al. 2005a; Whittingham et al. 2005b). Based on this information, fin whales seem to encounter gear less often than right and humpback whales. This statement is also supported by fin whale catalogs curated by College of the Atlantic and the Center for Coastal Studies, both of which contain records identifying fin whales that lack entanglement-related scarring.

Sei Whale

The range of sei whales (*Balaenoptera borealis*) extends from subpolar to subtropical and even tropical marine waters; however, the species is most commonly found in temperate waters (Perry et al. 1999). Based on past whaling operations, the IWC recognized three stocks in the North Atlantic: (1) Nova

Scotia; (2) Iceland-Denmark Strait; and (3) Northeast Atlantic (Donovan 1991; Perry et al. 1999). Mitchell and Chapman (1977) suggested that the sei whale population in the western North Atlantic consists of two stocks, a Nova Scotian Shelf stock and a Labrador Sea stock. The Nova Scotian Shelf stock includes the continental shelf waters of the Northeast Region, and extends northeastward to south of Newfoundland. The IWC boundaries for this stock are from the U.S. east coast to Cape Breton, Nova Scotia and east to 42°00'W longitude (Waring et al. 2009). This is the only sei whale stock within ALWTRP boundaries.

Sei whales became the target of modern commercial whalers in the late 19th and early 20th century after stocks of other whales, including right, humpback, fin, and blues, had already been depleted. Sei whales were taken in large numbers by Norway and Scotland from the beginning of modern whaling (NMFS, 1998b). Small numbers were also taken off of Spain, Portugal, and West Greenland from the 1920s to 1950s (Perry et al. 1999). In the western North Atlantic, a total of 825 sei whales were taken on the Scotian Shelf between 1966 and 1972, and an additional 16 were taken by a shore-based Newfoundland whaling station (Perry et al. 1999). The species continued to be exploited in Iceland until 1986 even though measures to stop whaling of sei whales in other areas had been put into place in the 1970s (Perry et al. 1999). There is no estimate for the abundance of sei whales prior to commercial whaling. Based on whaling records, approximately 14,295 sei whales were taken in the entire North Atlantic from 1885 to 1984 (Perry et al. 1999).

Sei whales winter in warm temperate or subtropical waters and summer in more northern latitudes. In the North Atlantic, most births occur in November and December, when the whales are on their wintering grounds. Conception is believed to occur in December and January. Gestation lasts for 12 months, and calves are weaned at between 6 and 9 months, when the whales are on the summer feeding grounds (NMFS 1998b). Sei whales reach sexual maturity between 5 and 15 years of age. The calving interval is believed to be 2 to 3 years (Perry et al. 1999).

Sei whales occur in deep water throughout their range, typically over the continental slope or in basins situated between banks (NMFS 1998b). In the northwest Atlantic, the whales travel along the eastern Canadian coast in autumn on their way to the Gulf of Maine and Georges Bank, where they occur in winter and spring. Within the Northeast Region, the sei whale is most common on Georges Bank, including the Great South Channel, and into the Gulf of Maine/Bay of Fundy region during spring and summer. Individuals may range as far south as North Carolina. It is important to note that sei whales are known for inhabiting an area for weeks at a time, then disappearing for years or even decades. This has been observed in many areas, including in the southwestern Gulf of Maine in 1986, but the basis for this phenomenon is not clear.

Although sei whales may prey upon small schooling fish and squid in the Northeast Region, available information suggests that calanoid copepods are the primary prey of this species. There are occasional influxes of sei whales farther into Gulf of Maine waters, presumably in conjunction with years of high copepod abundance inshore. Sei whales are occasionally seen feeding in association with right whales in the southern Gulf of Maine and in the Bay of Fundy, although there is no evidence of interspecific competition for food resources. There is very little information on natural mortality factors for sei whales. Possible causes of natural mortality, particularly for young, old, or otherwise compromised individuals, are shark attacks, killer whale attacks, and endoparasitic helminthes (Perry et al. 1999).

The abundance estimate of 386 sei whales (CV=0.85), obtained from a line-transect sighting survey conducted during June 12 to August 4, 2004, by a ship and a plane, covering 10,761 kilometers of trackline in the region from the 100 meter depth contour on the southern edge of Georges Bank to the lower Bay of Fundy, is considered the best available for the Nova Scotia stock of sei whales according to

the 2011 SAR (Waring *et al*. 2011). This estimate is considered extremely conservative in view of the known range of the sei whale in the western North Atlantic, and the uncertainties regarding population structure and whale movements between surveyed and unsurveyed areas. Hammond *et al*. (2011) estimates the abundance of sei whales in European Atlantic waters to be 619 individuals identified by their species name (CV of 0.34). The minimum population estimate for this sei whale stock is 208 (Waring *et al*. 2011). Current and maximum net productivity rates are unknown for this stock. There are insufficient data to determine trends of the sei whale population (Waring *et al.* 2011). The PBR for the Nova Scotia stock sei whale is 0.4 animals. Entanglement is not known to greatly affect this species in the U.S. Atlantic, possibly because sei whales typically inhabit waters farther offshore than most commercial fishing operations, or perhaps because any entanglements that do occur in offshore areas are less likely to be observed.

Minke Whale

The minke whale (*Balaenoptera acutorostrata*) is not listed as endangered or threatened under the ESA, although the species is protected under the MMPA. The total fishery-related mortality and serious injury for this stock does not exceed PBR (see below). Therefore, this is not considered a strategic stock.

Minke whales off the eastern coast of the United States are considered to be part of the Canadian east coast population, which inhabits the area from the eastern half of Davis Strait south to the Gulf of Mexico. Spring and summer are times of relatively widespread and common occurrence, and during this time minke whales are most abundant in New England waters. During fall, there are fewer minke whales in New England waters, while during winter, the species seems to be largely absent (Waring et al. 2009). Records hint at a possible winter distribution in the West Indies and in mid-ocean south and east of Bermuda (Mitchell 1991). As with several other cetacean species, the possibility of a deep-ocean component to distribution exists but remains unconfirmed.

Minke whales reach sexual maturity between 5 and 7 years of age (NAMMCO 1998). Most mature females become pregnant every year. Mating occurs in the late winter; after a gestation period of 10 months, calves are born in the lower latitudes of the range (Martin et al. 1990).

The minimum population is estimated at 6,909 animals for the Canadian east coast stock; however, a population trend analysis has not been conducted for this stock (Waring et al. 2011). The minimum rate of annual human-caused mortality and serious injury averaged 5.9 animals per year during 2005 to 2009, and of these, 3.5 animals per year were recorded through observed fisheries and 0.8 animals per year were attributed to U.S. fisheries using strandings and entanglement data (Waring et al. 2011). PBR for this stock is 69 animals per year.

Human-caused mortality in minke whales is relatively low in comparison to PBR for the species (19). However, fishing-related entanglements do occur. The existing data can be summarized as follows:

U.S. Lobster Trap/Pot Fishery: Annual mortalities attributed to the Gulf of Maine and Mid-Atlantic lobster trap/pot fishery, as determined from strandings and entanglement records that have been audited, were as follows: one in 1991, two in 1992, one in 1994, one in 1995, one in 1997, one in 2002, and zero from 2003 to 2007. Estimated average annual mortality related to this fishery from 2003 to 2007 was 0.0 minke whales per year (Waring et al. 2009).

Northeast Bottom Trawl: One freshly dead minke whale was caught in 2004. With only one observed take, it is not possible to generate an accurate bycatch estimate. Therefore, this catch is reported as 1, with a resulting 5-year mean (2003-2007) annual mortality of 0.2 (Waring et al. 2009).

Other Fisheries: Based on data from 1997 to 2007, mortalities that were likely a result of interaction with an unknown fishery include three in 1997, three in 1999, one in 2000, two in 2001, one in 2002, five in 2003, two in 2004, and one in 2007 (Waring et al. 2009). Of the five mortalities in 1999, two were attributed to an unknown trawl fishery and three to another fishery. One of the interactions with an unknown fishery in 2000 was a mortality and one was a serious injury. In 2001, the two confirmed fishery interactions were both from an unknown fishery. In 2002, there was one mortality in an unknown fishery. In 2003, five of five confirmed mortalities were due to interactions with an unknown fishery. In 2004, of the four confirmed mortalities, two were due to an interaction with an unknown fishery. In 2005 and 2006 there were no mortalities attributed to fishery interactions. In 2007 there was one mortality and one serious injury, both attributed to unknown fisheries (Waring et al. 2009). During 2003 to 2007, as determined from stranding and entanglement records, the estimated average annual mortality is 1.8 minke whales per year in unknown fisheries (Waring et al. 2009).

From 1999 to 2003, no minke whales were confirmed to be involved in ship strike incidents. During 2004 and 2005, one minke whale mortality was attributed to ship strike in each year. During 2006 and 2007, no minke whales were confirmed struck by a ship. Thus, during 2003 to 2007, as determined from stranding and entanglement records, the estimated annual average was 0.4 minke whales taken by ship strikes annually (Waring et al. 2009).

Based on Waring et al. (2009), fishing gear entanglements account for the majority of the human-caused mortalities of minke whales. Like the other large whale species discussed, feeding behavior may be an important factor that contributes to entanglement risk. Minke whales in the Northwest Atlantic typically feed on small schooling fish, such as sand lance, herring, cod, and mackerel (Ward 1995). The whales may follow the movements of their prey and subsequently swim closer to shore and to heavy concentrations of fishing gear, making them more susceptible to entanglements. Studies conducted in the Bay of Fundy and Gulf of St. Lawrence indicated that minke whales feed by displaying surface lunges and rolling (Sears et al. 1981; Haycock and Mercer 1984). In contrast, a study conducted on minke whales in Cape Cod Bay and Massachusetts Bay showed a lack of surface feeding behavior (Murphy 1995). It is likely, however, that large whales may encounter gear in any part of the water column.

The majority of documented minke whale entanglements reported by Waring et al. (2009) resulted in the death of the animal. Waring et al. (2009) report the mouth and tail stock/fluke regions to be a common entanglement location for those minke whales that were seriously injured or killed.

Harbor Seal

The harbor seal (Phoca vitulina) is not listed as endangered or threatened under the ESA, although the species is protected under the MMPA. Although PBR cannot be determined for this stock, the level of human-caused mortality and serious injury in the U.S. Atlantic EEZ is believed to be low relative to the total stock size; therefore, this is not a strategic stock.

The harbor seal is found in all nearshore waters of the Atlantic Ocean above 30 degrees latitude (Waring et al. 2009). In the western North Atlantic they are distributed from the eastern Canadian Arctic and Greenland south to southern New England and New York, and occasionally the Carolinas (Boulva and McLaren 1979; Gilbert and Guldager 1998). It is believed that the harbor seals found along the U.S. and Canadian east coasts represent one population (Waring et al. 2009). Harbor seals are year-round inhabitants of the coastal waters of eastern Canada and Maine, and occur seasonally along the southern New England and New York coasts from September through late May. However, breeding and pupping normally occur in waters north of the New Hampshire/Maine border, although breeding occurred as far south as Cape Cod in the early part of the twentieth century. Since passage of the MMPA in 1972, the

observed count of seals along the New England coast has been increasing. Coast-wide aerial surveys along the Maine coast were conducted in May/June 1981, 1986, 1993, 1997, and 2001 during pupping (Gilbert and Stein 1981; Gilbert and Wynne 1983, 1984; Kenney 1994; Gilbert and Guldager 1998; Gilbert et al. 2005). However, estimates older than 8 years are deemed unreliable (Wade and Angliss 1997), and should not be used for PBR determinations. Therefore, there is no current abundance estimate for harbor seals. The 2001 survey, conducted in May/June, included replicate surveys and radio tagged seals to obtain a correction factor for animals not hauled out. The corrected estimate (pups in parenthesis) for 2001 was 99,340 (23,722). The 2001 observed count of 38,014 is 28.7% greater than the 1997 count. Increased abundance of seals in the Northeast region has also been documented during aerial and boat surveys of overwintering haul-out sites from the Maine/New Hampshire border to eastern Long Island and New Jersey (Payne and Selzer 1989; Rough 1995; Barlas 1999; Schroeder 2000; deHart 2002).

Incidental takes of harbor seals have been recorded in groundfish gillnet, bottom trawl, herring purse seine, halibut tub trawl, and lobster fisheries (Gilbert and Wynne 1985 and 1987; Waring et al. 2009). Mortalities involving the herring purse seine, halibut tub trawl, and lobster fisheries are reportedly rare. The Northeast multispecies sink gillnet fishery is responsible for the majority of harbor seal fishery takes on the East Coast of the United States. This fishery is located in the Gulf of Maine and in Southern New England. There were 658 harbor seal mortalities observed in the Northeast sink gillnet fishery between 1990 and 2010, excluding 3 animals taken in the 1994 pinger experiment (NMFS unpublished data) but including one animal taken in a hanging ratio experiment. Williams (1999) aged 261 harbor seals caught in this fishery from 1991 to 1997, and 93 percent were juveniles (i.e.. less than 4 years old). Estimated annual mortalities (CV in parentheses) from this fishery were 332 (0.33) in 1998, 1,446 (0.34) in 1999, 917 (0.43) in 2000, 1,471 (0.38) in 2001, 787 (0.32) in 2002, 542 (0.28) in 2003, 792 (0.34) in 2004, 719 (0.20) in 2005, 87 (0.58) in 2006, 92 in 2007, 243 (0.41) in 2008, 516 (0.28) in 2009, and 461 (0.30) in 2010.

No harbor seals were taken in observed Mid-Atlantic coastal gillnet fishery trips during 1993–1997, or 1999–2003. Two harbor seals were observed taken in 1998, 1 in 2004, 2 in 2005, 1 in 2006, 0 in 2007, 2 in 2008, 2 in 2009, and 6 in 2010. Using the observed and experimental takes, the estimated annual mortality (CV in parentheses) attributed to this fishery was 0 in 1995–1997 and 1999–2003, 11 in 1998 (0.77), 15 (0.86) in 2004, 63 (0.67) in 2005, 26 (0.98) in 2006, 0 in 2007, 88 (0.74) in 2008, 47 (0.68) in 2009, and 89 (0.41) in 2010. Average annual estimated fishery-related mortality attributable to this fishery during 2006–2010 was 50 (CV =0.34) harbor seals.

One harbor seal mortality was observed in the Northeast bottom trawl fishery in 2010.. The estimated annual fishery-related mortality and serious injury attributable to this fishery has not been generated. Until this bycatch estimate can be developed, the average annual fishery-related mortality and serious injury for 2006–2010 is calculated as 0.2 animals (1 animal every 5 years).

Additional sources of mortality for harbor seals include boat strikes, entrainment in power plant intakes (12-20 per year), oil contamination, shooting (around salmon aquaculture sites and fixed fishing gear), storms, abandonment by the mother, and disease (Katona et al. 1993).

Loggerhead Sea Turtle

The loggerhead sea turtle (*Caretta caretta*) was listed as threatened under the ESA on July 28, 1978, but is considered endangered by the International World Conservation Union (IUCN). Loggerheads are circumglobal, inhabiting continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical waters. The loggerhead sea turtle is the most abundant species of sea turtle in U.S. waters. They commonly occur in the U.S. throughout the inner continental shelf from Florida through Cape Cod,

Massachusetts. Loggerhead sea turtles are found in Virginia foraging areas as early as April, but are not usually found on the most northern foraging grounds in the Gulf of Maine until June. The large majority leave the Gulf of Maine by mid-September, but some may remain in Mid-Atlantic and Northeast waters until late fall. During November and December, loggerheads appear to concentrate in nearshore and southerly areas influenced by warmer Gulf Stream waters off North Carolina. Summer nesting usually occurs in the lower latitudes.

Genetic analyses conducted since the last 5-year review indicate there are five demographically independent groups in the Western North Atlantic, corresponding to nesting beaches found in Florida and Mexico. The primary metric used to evaluate trends in global loggerhead populations are counts of beach nests, many of which occur in areas outside U.S. waters. Given that loggerhead nest counts have generally declined during the period 1989-2005, NMFS & USFWS (2007b) concluded that loggerhead turtles should not be delisted or reclassified and should remain designated as threatened under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA is warranted for the species. Additionally, the Center for Biological Diversity and the Turtle Island Restoration Network filed a petition to reclassify loggerhead turtles in the North Pacific Ocean as a distinct population segment (DPS) with endangered status and designate critical habitat under the ESA (72 FR 64585; November 16, 2007). While this petition is geared toward the North Pacific, the possibility exists that it could affect status in other areas. NMFS concluded that the petition presented substantial scientific information such that the petition action may be warranted, and published a notice and request for comments, available at: http://www.nmfs.noaa.gov/pr/pdfs/fr/fr72-64585.pdf. At this time, the Northwest Atlantic loggerhead population is only a "potential" distinct population segment and cannot be considered for delisting separately from the listed entity (i.e., the entire species) until it meets both the recovery criteria for each recovery unit and has completed a formal DPS evaluation and designation, which would involve proposed rulemaking, public review and comment and a final rulemaking (NMFS and USFWS 2008).

The Second Revision of the Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea turtle (*Caretta caretta*) was published in December 2008 (NMFS and USFWS 2008). The Loggerhead Recovery Team conducted a detailed analysis of threats to assist in prioritizing recovery actions. The highest priority threats, adjusted for relative reproductive values for each life stage/ecosystem, include bottom trawl, pelagic longline, demersal longline, and demersal large mesh gillnet fisheries; legal and illegal harvest; vessel strikes; beach armoring; beach erosion; marine debris ingestion; oil pollution; light pollution; and predation by native and exotic species.

Currently, there are no population estimates for loggerhead sea turtles in any of the ocean basins in which they occur. However, a recent loggerhead assessment prepared by NMFS states that the loggerhead adult female population in the western North Atlantic ranges from 20,000 to 40,000 or more, with a large range of uncertainty in total population size (SEFSC 2009).

As part of the Atlantic Marine Assessment Program for Protected Species , line transect aerial abundance surveys and turtle telemetry studies were conducted along the Atlantic Coast in the summer of 2010. The Atlantic Marine Assessment Program for Protected Species is a multi-agency initiative to assess marine mammal, sea turtle, and seabird abundance and distribution in the Atlantic. Aerial surveys were conducted from Cape Canaveral, Florida to the Gulf of St. Lawrence, Canada. Satellite tags on juvenile loggerhead turtles were deployed in two locations: off the coasts of northern Florida to South Carolina (n=30) and off the New Jersey and Delaware coasts (n=14). As presented in NMFS NEFSC (2011), the 2010 survey found a preliminary total surface abundance estimate within the entire study area of about 60,000 loggerhead turtles (CV=0.13) or 85,000 if a portion of unidentified hardshelled sea turtles were

included (CV=0.10). Surfacing times were generated from the satellite tag data collected during the aerial survey period, resulting in a 7 percent (5 to -11 percent inter-quartile range) median surface time in the South Atlantic area and a 67 percent (57 to 77 percent inter-quartile range) median surface time to the north. The calculated preliminary regional abundance estimate is about 588,000 loggerhead turtles along the U.S. Atlantic coast, with an inter-quartile range of 382,000 to 817,000 loggerhead turtles (NMFS NEFSC 2011). The estimate increases to approximately 801,000, with an inter-quartile range of 521,000-1,111,000 loggerhead turtles when based on known loggerhead turtles and a portion of unidentified turtle sightings. The density of loggerheads was generally lower in the north than the south; based on number of turtle groups detected, 64 percent were seen south of Cape Hatteras, North Carolina, 30 percent in the southern Mid-Atlantic Bight, and 6 percent in the northern Mid-Atlantic Bight. Although they have been seen farther north in previous studies (*e.g.*, Shoop and Kenney 1992), no loggerheads were observed during the aerial surveys conducted in the summer of 2010 in the more northern zone encompassing Georges Bank, Cape Cod Bay, and the Gulf of Maine. These estimates of loggerhead abundance over the U.S. Atlantic continental shelf are considered very preliminary. A more thorough analysis will be completed pending the results of further studies related to improving estimates of regional and seasonal variation in loggerhead surface time (by increasing the sample size and geographical area of tagging) and other information needed to improve the biases inherent in aerial surveys of sea turtles (*e.g.*, research on depth of detection and species misidentification rate). This survey effort represents the most comprehensive assessment of sea turtle abundance and distribution in many years. Additional aerial surveys and research to improve the abundance estimates are anticipated in 2011-2014, depending on available funds.

Anthropogenic factors that impact hatchlings and adult females on land, or the success of nesting and hatching include: beach erosion, beach armoring, and nourishment; artificial lighting; beach cleaning; beach pollution; increased human presence; recreational beach equipment; vehicular and pedestrian traffic; coastal development/construction; exotic dune and beach vegetation; removal of native vegetation; and poaching. An increased human presence at some nesting beaches or close to nesting beaches has led to secondary threats such as the introduction of exotic fire ants, feral hogs, dogs, and an increased presence of native species (*e.g.*, raccoons, armadillos, and opossums) which raid nests and feed on turtle eggs (NMFS and USFWS 2007a, 2008).

Loggerheads are affected by a completely different set of anthropogenic threats in the marine environment. These include oil and gas exploration, coastal development, and transportation; marine pollution; underwater explosions; hopper dredging; offshore artificial lighting; power plant entrainment and/or impingement; entanglement in debris; ingestion of marine debris; marina and dock construction and operation; boat collisions; poaching; and fishery interactions. A 1990 National Research Council (NRC) report concluded that for juveniles, sub-adults, and breeders in coastal waters, the most important source of anthropogenic caused mortality in U.S. Atlantic waters was fishery interactions.

Loggerhead turtles are captured and injured or killed in interactions with a variety of fishing gear, including shrimp trawl, gillnet, longline, dredge, pound net, pot/trap, and hook and line fisheries. The average annual bycatch estimate of loggerhead sea turtles from 2000-2004 (based on the rate from 1994-2004) over FMP groups identified by NERO was 411 turtles, with an additional 77 estimated bycatch events unassigned.

There have been three entanglements of loggerhead turtles reported in lobster gear. One loggerhead turtle was reported dead in New Jersey in July 1983; one loggerhead turtle was reported as released alive in New York in August 1987; and one loggerhead turtle was reported dead, entangled by the right flipper, in a pot line located in New Jersey in July of 1991. In addition, the Sea Turtle Stranding and Salvage Network (STSSN) database reveals that from 1980 to 2000, there was one loggerhead turtle alive and

entangled in lobster gear in Massachusetts (SEFSC STSSN database). More recent data (2002-2008), has recorded confirmed reports of eight loggerhead entanglements in vertical line gear. Four of those entanglements were confirmed to be caused by whelk pots, and one confirmed to be from crab fisheries. Gear from three of the loggerhead entanglements was never identified.

Leatherback Sea Turtle

Leatherback sea turtles (*Dermochelys coriacea*) were listed as endangered under the ESA on June 2, 1970. Leatherback turtles are the largest of the living turtles and are distinct from other sea turtle species because of its rubber-like, flexible carapace. Like the loggerhead, the leatherback is also circumglobal. In the northwestern Atlantic, the leatherback turtle's range extends from Cape Sable, Nova Scotia, south to Puerto Rico and the U.S. Virgin Islands. Nesting occurs from February through July at sites located from Georgia to the U.S. Virgin Islands. During the summer, leatherbacks tend to be found along the east coast of the U.S. from the Gulf of Maine south to the middle of Florida.

The leatherback sea turtle population was estimated at approximately 115,000 adult females globally in 1980 (Pritchard 1982). By 1995, this global population of adult females was estimated to have declined to 34,500 (Spotila et al. 1996). However, the most recent population size estimate for the North Atlantic alone is a range of 34,000 to 94,000 adult leatherback turtles (Turtle Expert Working Group, TEWG 2007). Thus, there is substantial uncertainty with respect to global population estimates of leatherback sea turtles.

Seven leatherback sea turtle populations or groups of populations were identified by the Leatherback TEWG as occurring within the Atlantic. These are: Florida, North Caribbean, Western Caribbean, Southern Caribbean, West Africa, South Africa, and Brazil (TEWG 2007). In the U.S., the Florida Statewide Nesting Beach Survey program has documented an increase in leatherback nesting numbers from 98 nests in 1988 to between 800 and 900 nests in the early 2000s (NMFS and USFWS 2007b). An analysis of Florida's index nesting beach sites from 1989-2006 shows a substantial increase in leatherback nesting in Florida during this time, with an annual growth rate of approximately 1.17 (TEWG 2007). The TEWG reports an increasing or stable trend for all of the seven populations or groups of populations with the exception of the Western Caribbean and West Africa.

Poaching is not known to be a problem for U.S. nesting populations. However, numerous fisheries that occur in both U.S. state and Federal waters are known to negatively impact juvenile and adult leatherback sea turtles. Leatherbacks have been documented interacting with longline, trap/pot, trawl, and gillnet fishing gear. Of the Atlantic sea turtle species, leatherbacks seem to be the most vulnerable to entanglement in fishing gear, particularly with trap/pot fishing gear. This susceptibility may be the result of their body type (large size, long pectoral flippers, and lack of a hard shell), and their attraction to gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface, and perhaps to the lightsticks used to attract target species in longline fisheries. Leatherbacks entangled in fishing gear generally have a reduced ability to feed, dive, surface to breathe, or perform any other behavior essential to survival (Balazs 1985). In addition to drowning from forced submergence, they may be more susceptible to boat strikes if forced to remain at the surface, and entangling lines can constrict blood flow resulting in tissue necrosis.

The American lobster fishery has been verified as the gear/fishery involved in 29 leatherback entanglements in the Northeast Region between 2002-2008 (STDN 2009). All of the 29 entanglements involved vertical lines of the lobster gear. Other major threats facing the leatherback sea turtle in the Atlantic Ocean include marine pollution (including ingesting marine debris), development and erosion of nesting beach sites, and vessel strikes.

3.5.2 Species Not Likely to Be Affected

Several ESA-listed species, while their distribution overlaps to some degree with the management unit of the lobster trap/pot fishery, are not likely to be affected by the fishery since the fishery does not typically operate in areas where these species occur or the gear used is not known to affect the species. These species include Atlantic sturgeon, shortnose sturgeon, the Gulf of Maine Distinct Population of Atlantic Salmon, hawksbill sea turtles, green sea turtles, Kemp ridley's sea turtles, blue whales, and sperm whales.

Atlantic Sturgeon

A status review for Atlantic sturgeon was completed in 2007 which indicated that five distinct population segments (DPS) of Atlantic sturgeon exist in the United States (ASSRT 2007). On October 6, 2010, NMFS proposed listing these five DPSs of Atlantic sturgeon along the U.S. East Coast as either threatened or endangered species (75 FR 61872 and 75 FR 61904). Final listing rules were published on February 6th, 2012 (77 FR 5880 and 75 FR 5914) . The GOM DPS of Atlantic sturgeon has been listed as threatened, and the New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs of Atlantic sturgeon have been listed as endangered. Atlantic sturgeon from any of the five DPSs could occur in areas where the American lobster fishery operates.

Atlantic sturgeon is an anadromous species that spawns in relatively low salinity, river environments, but spends most of its life in the marine and estuarine environments from Labrador, Canada to the Saint Johns River, Florida (Holland and Yelverton 1973, Dovel and Berggen 1983, Waldman et al. 1996, Kynard and Horgan 2002, Dadswell 2006, Atlantic Sturgeon Status Review Team (ASSRT) 2007). Tracking and tagging studies have shown that sub-adult and adult Atlantic sturgeon that originate from different rivers mix within the marine environment, utilizing ocean and estuarine waters for life functions such as foraging and overwintering (Stein et al. 2004a, Dadswell 2006, ASSRT 2007, Laney et al. 2007, Dunton et al. 2010).

Fishery-dependent data as well as fishery-independent data demonstrate that Atlantic sturgeon use relatively shallow inshore areas of the continental shelf; primarily waters less than 50 m deep (Stein et al. 2004b, ASMFC TC 2007, Dunton et al. 2010). The data also suggest regional differences in Atlantic sturgeon depth distribution with sturgeon observed in waters primarily less than 20 m in the Mid-Atlantic Bight and in deeper waters in the Gulf of Maine (Stein et al. 2004b, ASMFC TC 2007, Dunton et al. 2010). Information on population sizes for each Atlantic sturgeon DPS is very limited. Based on the best available information, NMFS has concluded that bycatch, vessel strikes, water quality and water availability, dams, lack of regulatory mechanisms for protecting the fish, and dredging are the most significant threats to Atlantic sturgeon.

Since the ESA listing of Atlantic sturgeon, the NEFSC has completed new population estimates using data from the Northeast Area Monitoring and Assessment (NEAMAP) survey (Kocik et al. 2013). Atlantic sturgeon are frequently sampled during the NEAMAP survey. NEAMAP has been conducting trawl surveys from Cape Cod, Massachusetts to Cape Hatteras, North Carolina in nearshore waters at depths up to 18.3 meters (60 feet) during the fall since 2007 and depths up to 36.6 meters (120 feet) during the spring since 2008 using a spatially stratified random design with a total of 35 strata and 150 stations per survey. The information from this survey can be directly used to calculate minimum swept area population estimates during the fall, which range from 6,980 to 42,160 with coefficients of variation between 0.02 and 0.57 and during the spring, which range from 25,540 to 52,990 with coefficients of variation between 0.27 and 0.65. These are considered minimum estimates because the calculation makes the unlikely assumption that the gear will capture 100% of the sturgeon in the water column along the tow path. Efficiencies less than 100% will result in estimates greater than the minimum. The true efficiency

depends on many things including the availability of the species to the survey and the behavior of the species with respect to the gear. True efficiencies much less than 100% are common for most species. The NEFSC's analysis also calculated estimates based on an assumption of 50% efficiency, which reasonably accounts for the robust, yet not complete sampling of the Atlantic sturgeon, oceanic temporal and spatial ranges, and the documented high rates of encounter with NEAMAP survey gear and Atlantic sturgeon. For this analysis, NMFS has determined that the best available scientific information for the status of Atlantic sturgeon at this time are the population estimates derived from NEAMAP swept area biomass (Kocik et al. 2013) because the estimates are derived directly from empirical data with few assumptions. NMFS has determined that using the median value of the 50% efficiency as the best estimate of the Atlantic sturgeon ocean population is most appropriate at this time. This results in a total population size estimate of 67,776 fish, which is considerably higher than the estimates that were available at the time of listing. This estimate is the best available estimate of Atlantic sturgeon abundance at the time of this analysis. The Commission has begun work on a benchmark assessment for Atlantic sturgeon to be completed in 2014, which would be expected to provide an updated population estimate and stock status. The Commission is currently collecting public submissions of data for use in the assessment: http://www.asmfc.org/press_releases/2013/pr20AtlSturgeonStockAssmtPrep.pdf.

Atlantic sturgeon from any of the five DPSs could occur in areas where the American lobster fishery operates, however, the species has not been captured in gear targeting American lobster (Stein et al. 2004a, ASMFC 2007, NMFS 2012), thus, this species is not considered further in this EIS.

Shortnose Sturgeon

Shortnose sturgeon are benthic fish that mainly occupy the deep channel sections of large rivers. They can be found in rivers along the western Atlantic coast from St. Johns River, Florida (possibly extirpated from this system), to the Saint John River in New Brunswick, Canada. The species is anadromous in the southern portion of its range (*i.e.*, south of Chesapeake Bay), while some northern populations are amphidromous (NMFS 1998c). Since the lobster trap/pot fishery does not operate in or near the rivers where concentrations of shortnose sturgeon are most likely found, it is highly unlikely that the lobster trap/pot fishery will affect shortnose sturgeon.

Atlantic Salmon

The wild populations of Atlantic salmon whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River are listed as endangered under the ESA. Juvenile salmon in New England rivers typically migrate to sea in May after a 2 to 3 year period of development in freshwater streams, and remain at sea for 2 winter seasons before returning to their U.S. natal rivers to spawn. Results from a 2001-2003 post-smolt trawl survey in Penobscot Bay and the nearshore waters of the Gulf of Maine indicate that Atlantic salmon post-smolts are prevalent in the upper water column throughout this area in mid to late May. Therefore, commercial fisheries deploying small mesh active gear (pelagic trawls and purse seines within 10-m of the surface) in nearshore waters of the Gulf of Maine may have the potential to incidentally take smolts. However, it is highly unlikely that the lobster trap/pot fishery will affect the Gulf of Maine DPS of Atlantic salmon given that operation of the lobster trap/pot fishery does not occur in or near the rivers where concentrations of Atlantic salmon are likely to be found and lobster trap/pot gear operates in the ocean at or near the bottom rather than near the surface.

Blue Whale

Blue whales do not regularly occur in waters of the U.S. Exclusive Economic Zone (EEZ) (Waring et al. 2002). In the North Atlantic, blue whales are most frequently sighted in the St. Lawrence from April to January (Sears 2002). No blue whales were observed during the Cetacean and Turtle Assessment Program (CETAP) surveys of the mid- and north Atlantic areas of the outer continental shelf (CETAP 1982). Calving for the species occurs in low latitude waters outside of the area where the lobster trap/pot fishery operates. Blue whales feed on euphausiids (krill) (Sears 2002) which are too small to be captured in lobster fishing gear. Given that the species is unlikely to occur in areas where the lobster fishery operates, and given that the operation of the lobster fishery will not affect the availability of blue whale prey or areas where calving and nursing of young occurs, the lobster fishery is not expected to affect blue whales.

Sperm Whale

Sperm whales regularly occur in waters of the U.S. Exclusive Economic Zone (EEZ). However, the distribution of the sperm whale in the U.S. EEZ occurs on the continental shelf edge, over the continental slope, and into mid-ocean regions (Waring et al. 2007). In contrast, the American lobster fishery operates in continental shelf waters. The average depth of sperm whale sightings observed during the CETAP surveys was 1,792m (CETAP 1982). Female sperm whales and young males almost always inhabit waters deeper than 1000m and at latitudes less than 40° N (Whitehead 2002). Sperm whales feed on larger organisms that inhabit the deeper ocean regions (Whitehead 2002). Calving for the species occurs in low latitude waters outside of the area where the American lobster fishery operates. Given that sperm whales are unlikely to occur in areas (based on water depth) where the American lobster fishery operates, and given that the operation of the American lobster fishery will not affect the availability of sperm whale prey or areas where calving and nursing of young occurs, the continued operation of the American lobster fishery is not likely to affect sperm whales.

Hawksbill Sea Turtle

The hawksbill turtle is uncommon in the waters of the continental U.S. Hawksbills prefer coral reefs, such as those found in the Caribbean and Central America. Hawksbills feed primarily on a wide variety of sponges, but also consume bryozoans, coelenterates, and mollusks. The Culebra Archipelago of Puerto Rico contains especially important foraging habitat for hawksbills. Nesting areas in the western North Atlantic include Puerto Rico and the Virgin Islands. There are accounts of hawksbills in south Florida and individuals have been sighted along the east coast as far north as Massachusetts; however, east coast sightings north of Florida are rare (NMFS 2009a). Since operation of the lobster trap/pot fishery would not occur in waters that are typically used by hawksbill sea turtles, it is highly unlikely that its operations would affect this turtle species.

Kemp's Ridley Sea Turtle

The Kemp's ridley is one of the least abundant of the world's sea turtle species. In contrast to loggerhead, leatherback, and green sea turtles, which are found in multiple oceans of the world, Kemp's ridleys typically occur only in the Gulf of Mexico and the northwestern Atlantic Ocean (USFWS and NMFS 1992). Foraging areas documented along the U.S. Atlantic coast include Charleston Harbor, Pamlico Sound (Epperly et al. 1995c), Chesapeake Bay (Musick and Limpus 1997), Delaware Bay, and Long Island Sound (Morreale and Standora 1993). Adult Kemp's ridleys are found in the coastal regions of the Gulf of Mexico and southeastern U.S., but are typically rare in the northeastern U.S. waters of the Atlantic (TEWG 2000).

Like other turtle species, the severe decline in the Kemp's ridley population appears to have been heavily influenced by a combination of exploitation of eggs and impacts from fishery interactions. Currently, anthropogenic impacts to the Kemp's ridley population are similar to those discussed above for other sea turtle species. Takes of Kemp's ridley turtles have been recorded by sea sampling coverage in the Northeast otter trawl fishery, pelagic longline fishery, and southeast shrimp and summer flounder bottom trawl fisheries. There is no documentation of Kemp's ridley sea turtles being incidentally taken by the lobster trap/pot fishery, therefore it is unlikely that this operation would affect this turtle species.

Green Sea Turtle

In the western Atlantic, green sea turtles range from Massachusetts to Argentina, including the Gulf of Mexico and Caribbean (Wynne and Schwartz 1999). Green sea turtles occur seasonally in Mid-Atlantic and Northeast waters such as Chesapeake Bay and Long Island Sound (Musick and Limpus 1997; Morreale and Standora 1998; Morreale et al. 2005), which serve as foraging and developmental habitats. As with the other sea turtle species, incidental fishery mortality accounts for a large proportion of annual anthropogenic mortality outside the nesting beaches. Sea sampling coverage in the pelagic driftnet, pelagic longline, southeast shrimp trawl, and summer flounder bottom trawl fisheries has recorded takes of green sea turtles. There is no documentation of green sea turtles being incidentally taken by the lobster trap/pot fishery, therefore this species is unlikely to be affected.

Atlantic Salmon Critical Habitat

Coincident with the June 19, 2009 ESA listing, NMFS designated critical habitat for the endangered GOM DPS of Atlantic salmon (74 FR 29300; June 19, 2009) (Figure 3). Designation of critical habitat is focused on the known primary constituent elements within the occupied areas of a listed species that are deemed essential to the conservation of the species. Within the GOM DPS, the primary constituent elements for Atlantic salmon are: 1) sites for spawning and rearing, and 2) sites for migration (excluding marine migration; although successful marine migration is essential to Atlantic salmon). NMFS was not able to identify the essential features of marine migration and feeding habitat or their specific locations at the time that the critical habitat was designated. While there is potential for lobster fishing activity to occur within estuaries in the GOM DPS of Atlantic Salmon, the placement of lobster traps and trawls is expected to allow adequate passage for migrating salmon. Likewise, the associated fishing activities (i.e. hauling gear and vessel movements) are not expected to alter water chemistry or physical attributes to levels that would affect migration patterns of smolts or adult salmon.

3.6 OTHER AFFECTED SPECIES

3.6.1 Bycatch Fisheries

The term "bycatch" refers to the unintentional landing and discarding of animals not specifically targeted by fishing vessels. Animals may be discarded for a variety of reasons, both economic and regulatory. Commonly discarded animals include those that are of an undesirable size, sex, or species. In addition to discards, fishing typically involves some degree of unobserved animal mortality associated with fishing gear (i.e., animals entangled in nets, breaking free of hooks or lines, and ghost fishing).

In general, the pots used in commercial lobster fisheries are among the more selective types of fishing gear. As a result, overall *levels* of bycatch in pots are low in lobster fisheries relative to other marine fisheries. The most common types of bycatch in lobster pots are juvenile lobsters and crabs, as well as some bottom fish and other invertebrates. The discard mortality rates (the percentage of discarded animals

that die) associated with animals caught in traps is low, particularly when compared against the mortality rates linked with mobile fishing gears such as trawls and dredges.

There is little quantitative information available detailing the composition of bycatch in U.S. or Canadian lobster fisheries. Currently, no U.S. bycatch monitoring program exists for the lobster fishery in the United States or Canada (NMFS 2003; Gendron 2005). While there has been no systematic review, bycatch in lobster traps is reported to consist of a variety of animals attracted to bait and capable of entering traps. Types of fish occasionally caught in lobster traps include tautog, scup, black sea bass, cod, cusk, eels and flounder. A study monitoring bycatch in the lobster fishery off New York found that tautog (23%) and scup (30%) were the two species of finfish most commonly taken in lobster pots (ASMFC 1997). In addition to fish, a variety of invertebrates are found in and attached to lobster traps. These include rock crabs, Jonah crabs, red crabs, starfish, urchins, whelks and conchs (ASMFC 1997; Butler 2004; Miller 2005). In Canada, cod and one species of cusk are species of concern, but bycatch rates of these species are low and vary by area. At present, no efforts are underway to limit the very small bycatch of these species (Miller 2005; Pezzack 2005).

Because of the nature of trap fisheries, fish and invertebrates landed in traps are likely to be discarded with lower mortality rates than those landed with other gear types such as trawls and dredges (Davis 2002). The number of animals that die after being caught and discarded in the American lobster fishery appears small compared to actual lobster landings.[85]

Jonah Crab

Jonah crab, *Cancer borealis*, is currently an unregulated species in Federal waters. Little is known about the species' biology, distribution, and relative abundance. Also known as the Rock crab and the Bull crab, Jonah crabs are found from Florida to Nova Scotia, mainly in offshore, rocky habitats. Females obtain a carapace width of 100 mm after about 8 years, and males reach 130 mm in 6 to 7 years. Individuals larger than 190 mm have not been observed, and it is believed that a terminal molt size might exist (NMFS, 2002).

Jonah crab is a traditional by-catch of the Maine lobster fishery. Jonah crab landings have traditionally been used by lobstermen as a supplement to cover operating expenses. However, due to a recent increase in crab abundance and market demand, it has become profitable for lobstermen to target Jonah crab with lobster traps/pots during times of low lobster landings (generally in the spring). This in turn has led to interest in targeting Jonah crabs year round.

Without an FMP, fishing effort on Jonah crab by trap vessels in Federal waters is only regulated and constrained by trap limits if the vessel possesses a Federal lobster permit. As such, vessels not otherwise restricted by their lobster permit are able to set an unlimited amount of 'crab' trap gear. The industry is concerned that this situation may lead to adverse marine mammal impacts, increased gear conflicts, and a potential for illegal harvest of lobster by non-permitted vessel. NMFS has previously indicated that there is not enough scientific and fisheries information on the crab fishery at this time to justify development of a crab FMP.

Landings of Jonah crab in the Northeastern United States totaled 8.5 million pounds in 2008[86]. Inshore lobster traps/pots caught 13 percent of the total (see Table 3.12, below).

[85] The general discussion for "by-catch," above, was taken from "*Seafood Watch*," American Lobster-Northeast Region, Final Report, February 2, 2006. All sources as referenced therein (Elliott 2006).

[86] Data on Jonah crab landings may be inaccurate due to frequent misidentification at the docks as well as substantial cash transactions that are never documented.

Table 3.12 - Jonah Crab Landings by Gear Type, FY2008

Gear Type	Total Pounds Landed	% of Total Pounds Landed
Offshore Lobster Pots and Traps	53,492	0.6%
Inshore Lobster Pots and Traps	1,121,398	13%
Pots and Traps, Conch	40,970	0.4%
Pots and Traps, Other[1]	7,208,801	86%
TOTAL	8,424,661	100.00%

Note: The general Northeast gear code 18, Pots and Traps, includes, but is not limited to, trap and pot gear targeting fish, eel, conch, hagfish, and other/unclassified species. Traps and pots targeting lobster, shrimp, or crab are included in other general gear categories.

Source: Dealer data provided by NMFS, Northeast Region, Fisheries Statistics Office (http://www.st.nmfs.noaa.gov/st1/commercial/index.html).

The ex-vessel value of Jonah crab landings in the Northeast totaled $4,654,830 in 2008.

Red Crab

Deep-sea Red Crab, *Chaceon quinquedens*, are distributed along the continental shelf edge and slope of the western Atlantic from Emerald Bank, Nova Scotia to the Gulf of Mexico. They are typically found at depths of 2,000 to 1,800 meters (700-5,900 feet), and reach a maximum carapace width of 180 mm, and may live 15 years or more (Serchuk and Wigley, 1982). Scientific research suggests that red crabs are most likely opportunistic omnivores due to the limited availability of food at the depths common for this species. The red crab fishery was previously limited by the high catch-related mortality of the crabs (and rapid degradation of the meat) and a lack of economical processing. Technological advances have made fishing for this species feasible and fresh and frozen meat from the crab is now sold commercially (NEFMC, 2002).

Vessels operating in the red crab fishery typically make 28 to 35 trips per year, with each trip lasting 7 to 10 days. Trips are limited in duration primarily by the hold capacity of the vessel and the need to keep the product fresh and alive. Vessels fish 500 to 600 traps/pots using 90 to 120 traps/pots per trawl. Traps/pots are allowed to soak 18 to 36 hours, with an average soaking time of 22.5 hours. The reported average trap/pot loss is just over 10 pots/traps per trip (NEFMC, 2002).

Management of the red crab fishery under the Magnuson-Stevens Act occurred relatively recently. Following a request from the New England Fishery Management Council (NEFMC), the Secretary of Commerce issued an emergency rule effective May 18, 2001 for management of the red crab fishery in the Exclusive Economic Zone (EEZ) from 35°15.3' North Latitude (the latitude of Cape Hatteras Light, NC) northward to the U.S./Canada border. An FMP was subsequently developed by the NEFMC, approved by NMFS and implemented by regulations effective October 20, 2002 (NEFMC, 2002). The regulations include measures to limit and control effort in the fishery, including a limited-access permit system. Specifically, access to the fishery is limited to those fishermen who met specific criteria during a qualifying period; no additional entrants are allowed, but permits may be sold or otherwise transferred to a new owner. The regulations include gear restrictions and days-at-sea (DAS) allocations. Other measures include gear marking requirements, mandatory vessel trip reports, and a requirement for operator permits and dealer permits (NMFS, 2002a).

According to the January, 2010 NEFMC *Stock Assessment and Fishery Evaluation (SAFE) Report*, overfishing is not considered to be occurring on the Red Crab stock (based on FY 2008 data). To assess

whether the stock is considered to be overfished, current data on either stock status or fleet per trap CPUE are necessary. Because none of these data are currently available, stock status with respect to being in an overfished condition cannot be determined at this time.[87]

Of the 879 vessels permitted to fish for red crab in 2002 fishing year, 874 vessels had incidental bycatch permits and 5 had controlled access permits. Traps/pots are the most prevalent primary gear, followed closely by bottom trawls, then dredges.

Table 3.13 - Red Crab Landings by Gear Type, FY2008*

Gear Type	Total Pounds Landed	Percent of Total Pounds Landed
Pots and Traps	2,665,281	96.489%
Bottom Trawl	96,909	3.508%
Midwater Trawl	70	0.003%
TOTAL	2,762,260	100.00%

Source: Dealer data provided by NMFS, Northeast Region, Fisheries Statistics Office.
*1 March 2008 – 28 February 2009

The ex-vessel value of red crab landings in the Northeast totaled roughly $4 million in 2002. More recently, overall landings have decreased from over 4 million pounds in 2005 to less than 3 million pounds in 2007 and 2008. (NEFMC 2010)

3.6.2 Bait Fisheries

Bait is used in lobster pots to attract lobsters and is an important component of the lobster fishery. In the United States, Atlantic Herring is the major source of lobster bait, comprising nearly 90 percent of the bait used in Maine (Seafood Watch 2006).[88] It has been estimated that 50,000 to 60,000 tons of bait are used in the U.S. lobster fishery annually to yield approximately 35,000 tons of adult lobsters.

Atlantic Herring

According to the Maine Department of Marine Resources, the emergence of large-scale fisheries for herring in the Gulf of Maine, Georges Bank, and southern New England waters is a relatively new occurrence, promoted in large part by demand for bait from the lobster industry. Commercial landings of Atlantic herring are currently between 70,000 to 100,000 metric tons, of which roughly 60 percent (~ 50,000 metric tons) goes to the lobster baitfish market. (DMR 2004, SW 2006)

Atlantic herring are distributed along the Atlantic coast from North Carolina to the Canadian Maritime provinces in inshore and offshore waters (including in every major estuary from the northern Gulf of Maine to the Chesapeake Bay) to the edge of the continental shelf. They are most abundant north of Cape Cod and become increasingly scarce south of New Jersey (Kelly and Moring, 1986; NEFMC, DRAFT

[87] See NEFMC Stock Assessment and Fishery Management Report, January 6, 2010, http://www.nefmc.org/crab/.
[88] The remaining 10% is made up of fish such as porgies, alewives, and redfish (SW 2006).

SEIS, 2005)[89]. All life stages of Atlantic herring can be found in high abundance in the Gulf of Maine and in lower abundance in the mid-Atlantic, but only adult herring are found to be abundant south of Narragansett Bay (Reid et al., 1999; Stone et al., 1994; NEFMC, DRAFT SEIS, 2005). Adult herring are common in more northern locations throughout the year, but are more abundant in the fall and winter. Further south, from New York to Chesapeake Bay, they are absent in the summer and never abundant. Juveniles are more common in the northern areas throughout the year and in all locations except Chesapeake Bay in the spring.

Herring is an important species in the food web of the northwest Atlantic. Herring eggs are deposited on the bottom and incubate for about 10 days. They are subject to predation by a variety of demersal fish species, including winter flounder, cod, haddock and red hake. Juvenile herring, especially "brit" (age-1 juveniles) are preyed upon heavily due to their abundance and small size.

Atlantic herring is an important prey species for a large number of piscivorous (fish-eating) fish, elasmobranches (sharks and skates), marine mammals and seabirds in the northeastern United States. Unlike other pelagic (open ocean) fishes, such as Atlantic mackerel, herring are smaller and vulnerable to predation over most, if not all, of their life (Overholtz et al., 2000). The major finfish and elasmobranch species that feed heavily on Atlantic herring (or on clupeid species as a group) are Atlantic cod, silver hake, thorny skate, bluefish, goosefish, weakfish, summer flounder, white hake, and – in certain locations and times of year – Atlantic bluefin tuna. Other species that feed on herring are spiny dogfish, Atlantic halibut, red hake, striped bass, dusky shark, and black sea bass.

While the Atlantic herring resource is currently not overfished and overfishing is not occurring (ASMFC 2009b), the current level of abundance and spawning stock biomass has generated competing interests in new and expanded sectors of the herring fishery including: maintaining traditional use patterns in the fishery, increasing the bait fishery and protecting herring's role as forage in the northwest Atlantic ecosystem. Additionally, the interest in expansion of the fishery has raised concerns about potential overharvest, locally or on the entire stock complex.

Most U.S. commercial catches occur between May and October in the Gulf of Maine, consistent with the peak season for the lobster fishery. In addition, there is a relatively substantial winter fishery in southern New England, and catches from Georges Bank have increased somewhat in recent years.

Landings by the United States averaged about 62,300 metric tons during 1978 through 1994, then increased to an average of 103,000 metric tons during 1995 through 2001, and declined to an average of 95,000 metric tons during 2002 through 2005. Landings since 2005 have averaged nearly 90,000 metric tons. From 1978 through 1982, US landings were equally split between weir fisheries and purse seine fisheries. From 1983 through 1992, most US landings were taken by the purse seine fishery, but more recently, single mid-water and paired mid-water trawling have dominated landings, with purse seining accounting for about 10-15% of the US total from 2000 through 2005. Since 2005, purse seining has increased while pair and single mid-water trawling has decreased, with relative shares as follows: pair trawling, 56 percent; single mid-water trawling, 12 percent; and purse seine, 26 percent.[90]

The majority of harvest in 2007 was taken by commercial fishermen, with total landings in 2008 of nearly 73,000 metic tons. Of the 2008 total landings, Massachusetts and Maine accounted for 92 percent (at 54.6

[89] http://www.asmfc.org/speciesDocuments/herring/fmps/draftAm2forPublicComment.pdf (ASMFC 2006c)
[90] ASMFC, *2008 Review of the Fishery Management Plan for Atlantic Sea Herring*, November, 2009 (ASMFC 2009b).

percent and 38.1 percent, respectively), followed by New Jersey (3.8 percent) and Rhode Island (2.6 percent).[91]

In February, 2010, the Commission Atlantic Herring Section set new specifications for the fishery for the 2010-2012 period based on scientific analyses showing that biomass estimates for the fishery had been overestimated by an average of 40% over the last several years. As a result, optimal yield for the fishery was reduced by nearly 54,000 metric tons below the 2008-2009 amount of 145,000 metric tons. [92]

Processing of Atlantic herring is for lobster bait (salted and barreled, fresh or frozen); sardines (canned) and food export (frozen whole). The shoreside processing sector of the Atlantic herring fishery has expanded substantially in the last few years. Consequently, there is no longer an allocation for foreign at sea processing (joint venture and internal waters processing operations). New herring processing plants have come on-line in New Bedford and Gloucester, Massachusetts and Cape May, New Jersey. Though the canneries that were once a mainstay of employment in Maine have virtually disappeared, the one remaining cannery is to be renovated so that it becomes a state-of-the-art facility.

[91] Ibid.
[92] Feb 4, 2010 ASMFC Press Release, *ASMFC Atlantic Herring Section Sets Specifications for 2010-2012* (ASMFC 2010).

Chapter 4 – Environmental Impacts

ENVIRONMENTAL IMPACTS CHAPTER 4

4.0 Introduction

Consistent with Section 1502.16 of the CEQ NEPA regulations (40 CFR Part 1500), this chapter presents an analysis of the potential direct and indirect impacts of each alternative on the affected environment as described in Chapter 3. Each alternative was evaluated for its potential to produce impacts on the human environment. In this regard, because the proposed actions are regulatory in nature, the analysis includes a discussion of their effect on management and enforcement of the Federal lobster program and compares these effects across all of the alternatives chosen for review. Finally, because of their importance in relation to the proposed LAP and ITT measures, social and economic impacts are evaluated within independent sections in order to better highlight the potential impacts on affected communities. Table 4.1, below, provides the evaluation criteria used to determine the significance of the potential impacts.

Six major components are examined in detail:

- Section 4.1 provides background information on a number of important topics that are common to each of the alternatives evaluated in this chapter. These topics include: data used for the analysis; documentation needed to determine historical participation in the lobster fishery; the need for a centralized database tracking system; sources of "disconnects" across state and Federal jurisdictions; the Most Restrictive Rule; and latent effort;
- Section 4.2 analyzes the potential regulatory and biological and physical environmental impacts from the proposed changes to Federal lobster management in the *LCMA OCC*;
- Section 4.3 analyzes the potential regulatory and biological and physical environmental impacts from the proposed changes to Federal lobster management in the *LCMA 2*;
- Section 4.4 analyzes the potential regulatory and biological and physical environmental impacts from the proposed implementation of an *Inter-transferable Trap Program (ITT program) in LCMA OCC, LCMA 2 AND LCMA 3*;
- Section 4.5 describes the impact of the proposed management changes on the economic environment;
- Section 4.6 describes the impact of the proposed management changes on the social environment.

As described in Section 1.3, direct impacts are caused by the action and occur at the same time and place. Indirect impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

Impact characteristics (i.e., minor, moderate, or major), as described in Section 1.3, have several attributes including (1) duration (i.e., short-term, long-term), (2) mechanism (i.e., direct, indirect), (3) magnitude (classifications ranging from minor to major), and (4) whether an impact is adverse or beneficial. Impact analyses and the criteria upon which impact determinations are made—as presented in the following section—also consider two critical NEPA-based factors:

- Context – where an impact can be determined to be localized or more widespread (e.g., regional).
- Intensity – where an impact is determined through consideration of several factors, including whether the Proposed Action might have an adverse impact on the unique characteristics of

an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Impacts are also considered in terms of their potential for violation of Federal, state, or local environmental law; their controversial nature; the degree of uncertainty or unknown impacts, or unique or unknown risks; if there are precedent-setting impacts; and their cumulative impacts (see Chapter 5).

The following guidance provides a framework for establishing whether an impact would be minor, moderate, or major (as discussed in Section 1.3). Which category is assigned would depend in part on the intensity and context of the impact on the resource, as defined above. Although some evaluation criteria have been designated based on legal or regulatory limits or requirements, others are based on best professional judgment and best management practices. The evaluation criteria include both quantitative and qualitative analyses, as appropriate to each resource.

Table 4.1 - Evaluation Criteria

RESOURCE	EVALUATION CRITERIA
Regulatory Environment	• Compatibility with Commission-approved measures (major) • "Disconnects" between Federal & state management regimes (minor-to-major depending on degree of disconnects) • Enforcement or administrative burdens resulting from disconnects (minor-to-major depending on degree of disconnects)
Biological Resources	• Violate a legal standard for protection of a species or its critical habitat (major) • Degrade the commercial, ecological, or scientific importance of a biological resource or its critical habitat (minor to major depending on extent of degradation) • Measurable change in the population size (density) or change in the distribution of an important species in the region (minor to major depending on extent of change) • Measurable change in trap density or distribution of traps that may result in a change to biological resources (minor to major depending on extent of degradation)
Physical Environment	• Degradation of critical habitat of a biological resource (minor to major depending on extent of degradation) • Measurable change in trap density or distribution of traps that may result in a change to physical resources (minor to major depending on extent of degradation)
Protected Resources	• Violate a legal standard for protection of a species or its critical habitat (major)
Commercial Fisheries (including By-Catch and Bait Fisheries)	• Violate a legal standard for protection of a species or its critical habitat (major)
Socioeconomics	• Substantial change to the local or regional economy, population, housing, infrastructure (schools, police, and fire services), social conditions, or employment (major) • Disproportionate environmental, economic, social, or health impacts on minority or low-income populations (minor to major depending on risk and scope of impact)

For purposes of this assessment, areas that may be directly and indirectly affected by the alternatives under evaluation include LCMAs 1, 2, 3, and OCC within the American Lobster fishery, encompassing inshore and offshore coastal areas from Maine to North Carolina.

4.1 Major Topics Common to Each Alternative Evaluation

The following issues are relevant to all of the alternatives evaluated: data used for the analysis; documentation of historical participation in the lobster fishery; the need for a centralized database tracking system; sources of "disconnects" across state and Federal jurisdictions; the Most Restrictive Rule; and latent effort. Because these topics are important to a clear understanding of the impacts analysis that follows, some background on each one is provided below.

Data Used for This Analysis

The analysis within this chapter necessarily relies in part on imperfect data. The absence of systematic record keeping for the commercial lobster industry has historically made it a challenge for NMFS to apply data robust enough to develop comprehensive analyses of the commercial lobster industry (particularly over time). The need for mandatory reporting requirements for Federal license holders to address this deficiency has long been recognized and NMFS recently published a final rule that includes a requirement for mandatory electronic reporting by all Federal lobster seafood dealers, effective January 1, 2010 (see 74 FR 37530, dated July 29, 2009). In the meantime, the following analysis uses best available data, largely from Federal and state sources, which is relied upon to measure inputs such as the number of Federal lobster permit holders by area, associated trap tag allocations and purchases, and landings data (not available on an area-specific basis). Where data gaps remain, other best-available sources have been used where possible and have been appropriately cited within the text.

For purposes of the LCMA OCC and the LCMA 2 analyses, NMFS chose to use state data. NMFS believes that state data provide the most helpful depiction of potential impacts to the proposed alternatives. As explained below, Federal permit data and trap tag data are useful to give rough, ballpark estimates of potential impacts, and vessel trip reports (VTRs) can be useful on a case-by-case basis, but none of the Federal data sets can provide precise estimates. For the LCMA OCC, state data is useful because this LCMA is located astride Massachusetts and Rhode Island waters – the states with complete lobster mandatory fishing reporting requirements. Additionally, the states have already reviewed their data and have reached preliminary decisions on the qualifications of all potential LCMA OCC applicants residing in their states – including those with Federal permits – based upon the criteria set forth in Addenda IV and VII. That said, the states' preliminary decisions are in no way binding on NMFS – if the agency ultimately chooses to limit LCMA OCC access as recommended by the Commission, the agency will make its decisions on Federal permits independently.

Acknowledging, therefore, that the state data is not an exact predictor of potential Federal decisions, NMFS believes that the results of the states' LCMA limited access programs likely present the most useful approximation of what would happen in a compatible Federal program. State data also provides good insight into the impacts on dual permit holders, for which, as stated in Chapters 2 and 3, consistency is a particular Federal concern. Tables 4.2 and 4.3, below, largely present state limited access program data.[93]

Documenting Historical Participation in the Lobster Fishery

The Commission's LCMA limited access programs have required any individual wanting access into the fishery to document his or her past historical participation in the LCMA. Various types of documents have been accepted for this purpose and it is anticipated that the same approach will be applied to future LAPs, as follows.

[93] See Appendix 14 for information on Commonwealth of Massachusetts Effort Control Programs for LCMA 2 and LCMA OCC.

- Federal Documents

  - *Federal Permit Data* - Federal lobster permit data can be used to roughly establish the total amount of effort potentially fishing in an LCMA in any given year. At present, there are approximately 3,200 Federal permits, each of which must be renewed annually or relinquished. When a permit is renewed, individuals can designate (i.e., choose) any one or multiple LCMAs on that permit for the coming year. As described in Section 3.3.1, however, this process sets up a sort of "dual reality," in that many individuals designate LCMAs on their permits despite having little intention of actually fishing there. Accordingly, Federal permit data is useful to provide a rough estimate of the upper boundaries of fishing effort in an LCMA, but more limited in its ability to document precise fishing effort in an LCMA. Table 3.6 in Section 3.3.1 is an example of information taken from Federal permit data.

  - *Trap Tag Data* – Trap tag data is an accounting of how many trap tags each permit holder ordered each year and for which LCMA. Technically, the data is not Federal insofar as the information originates from a private vendor that handles all transactions. This data would likely provide a more precise accounting of fishing effort in an LCMA – e.g., presumably, an individual would be less likely to purchase trap tags for an LCMA in which he or she had no intention of fishing.[94] However, the cost per trap tag is the same, regardless of the number of LCMAs that are selected. Further, as discussed in greater detail in Sections 2.1.1 and 2.1.2 permit holders may purchase trap tags and not actively fish for reasons such as speculation and holding ground. As explained in Section 3.3.1, trap tag data is limited in its ability to provide a more precise estimate of fishing effort in an LCMA and, like Federal permit data, is best used to approximate the upper boundary of fishing effort.

  - *Vessel Trip Report Data* — Federal VTR data has the potential to provide the most accurate estimation of fishing effort in an LCMA, but is limited because it is not a reporting requirement of Federal lobster permits. In general, any fishing vessel with a Federal finfish and/or shellfish permit must report the catch, location of catch and method of catch on a form.[95] Approximately 61 percent (2008 permit holders) of Federal Lobster Permit holders had to report their catch on Federal VTRs by virtue of holding another Federal finfish and/or shellfish permit. Because the VTR form was designed to capture the fishing history of other federally regulated species by many gear types, the clarity in which the lobster catch is recorded on the VTR form can be unreliable. In NMFS's experience, some fishers present lobster fishing information completely and clearly on some VTRs; others, far less so.[96] Accordingly, VTR data can be an excellent source of fishing history on a case-by-case basis, but is of limited value for analysis on a programmatic level.

- Non-Federal Documents

  - *State data* — State data would involve any fishing history reported to a state as part of the state's lobster program. In some ways, state data could represent the best data on an individual's fishing history because, like VTRs, fishing history is recorded, but unlike

[94] Although this monetary disincentive is limited : In 2008, a trap tag cost only 16 cents to purchase.
[95] Federal fishing vessel permits with mandatory VTR requirements are specified at 50 CFR 648.
[96] Federal VTRs were a component of NMFS' limited access program qualification process in LCMAs 3, 4, and 5. See Federal Register 68 FR 14902 3-27-03.

VTRs, the reporting is mandatory for some state lobster fishers. There are, however, limitations to the usefulness of state data in a Federal limited entry program. The different states have different reporting requirements– some, like Massachusetts and Rhode Island, have extensive reporting requirements; others, like Maine, have much less extensive data reporting requirements. The Commission's Lobster Plan recommends that applicants use state data in their LCMA 2 and OCC limited access application. The logic in doing so is straightforward: if an applicant has reported fishing history to a state during the qualification period in question, then that same data should be used for the corresponding federal decision. Not only will doing so help ensure consistency in state and federal decision-making, but equity and fair-play suggest that applicants not be allowed to ignore fishing history that they reported as being accurate when made.

- *Other data* — This category of data would involve fishing history information that comes from a permit holder, such as Captain's logs, catch receipts, tax returns, etc. Such information can sometimes provide an accurate picture of a permit holder's fishing history in an LCMA where Federal VTR and/or state reporting information are absent. Although such documentation might be an acceptable form for proof in a Federal limited access program – such as where a state did not require reporting - the information is, by definition, not within the custody or control of the Federal government and, as a result, is not relied upon in the foregoing analysis.[97]

- *State Qualification and Allocation Decisions* - NMFS intends to allow applicants to use their state LCMA 2 and/or OCC qualification and allocation as evidence in establishing the Federal qualification and allocation decision. There is good reason for doing so. As a preliminary matter, the states and NMFS are basing their qualification and allocation decisions off of identical Commission recommendations in the Commission's Lobster Plan. NMFS review of state regulations and discussions with the states confirms that state and federal regulations are indeed substantially identical. Further, allowing applicants to do so will greatly decrease administrative workload for the agency, greatly increase the agency's ability to more speedily process and render a decision on the application, and also assist in maintaining regulatory consistency in state and federal decision-making on single businesses with dual permits, which this FEIS has repeatedly indicated to be crucial in the implementation of this program. Finally, the state decision is merely *prima facie* evidence; it can be discounted and dismissed if NMFS finds reason to doubt the applicant's underlying qualifications or the grounds upon which the state decision was based.

Database Issues

As outlined in Table 2.1, from 1999-2013 the Commission approved and subsequently modified limited access and transferable trap programs in three lobster management areas. As jurisdictions began to draft regulations to codify the various elements of each plan, a variety of issues were identified, including the need to centrally track state and Federal lobster permit holders and trap allocations across multiple jurisdictions. Based on issues raised by NMFS and the affected states, the Commission established a subcommittee to evaluate the three ITT programs and their effects across all LCMAs, and provide recommendations to the Board. The Subcommittee met on several occasions over an 18-month period, which concluded with the subcommittee's recommendations in a

[97] NMFS allowed Captain's logs and other permit holder information to be used as proof when qualifying individuals for access to LCMA 3, 4 and 5. NMFS, however, raised significant concerns in so doing. See Final Environmental Impact Statement (FEIS), October 30, 2002, page 32 (NMFS 2002a). Specifically, NMFS was concerned that some applicants might submit fraudulently created documents. Ultimately, NMFS was more concerned that many legitimate applicants would be left with no other recourse because few states had mandatory reporting during the application time period (1991 – 1999). Accordingly, NMFS allowed Captain's logs and other documents to be used, but required an Affidavit to accompany the submission. See Final Rule 68 FR 14902 3-27-03.

"White Paper"[98] to the American Lobster Board. The "White Paper" noted the following issues as being problematic with regard to the ITT programs in place: the lack of a multi-agency procedure to track ITT programs, different annual application periods between agencies for transfers, and no communication system between agencies for ITT transfers. It further noted that this inability to track transfers increased administrative burdens within jurisdictions and resulted in inaccurate trap allocations. Finally, it recommended that a multi-agency tracking system be established and funded.

Under an ITT program, the need to track fishing history will create logistical issues as allocations are split amongst permits and transferred within and/or across jurisdictions. There is presently no uniform mechanism to identify and track permit fishing history across all affected state and Federal jurisdictions nor is there any uniform measure to identify and track traps as they become transferred within and among state jurisdictions. These logistical issues will become compounded and more problematic as transfers proliferate and are re-transferred in successive years. Given this, NMFS believes there is a compelling need to establish and fund an expandable, web-based, tracking process for all multi-jurisdictional historic trap allocations and trap transfers. This tracking system would be managed by one entity, but all agencies should supply supporting data.

By creating a single set of regulatory guidelines that are consistent across participating state and federal jurisdictions, a central database would mitigate the potential problems created by individual and unique state/state and state/federal tracking systems. Specifically, a central tracking system would reduce administrative burdens across agencies trying to administer ITT programs, enable managers to measure the success of ITT programs, and increase the understanding of how many traps have the potential to be fished in each LCMA. In so doing, it lessens the potential for chaos and prevents further expansion of the problems created by potential individual and unique state/state and state/federal tracking systems. If a central database tracking program were not funded, then transfers across jurisdictions (e.g. state to state, or any transfer involving a dual permit holder) would not be possible, resulting in a smaller pool of within-jurisdiction-only transfers in state waters. Further, a smaller number of transfers result in less conservation value (fewer trap reductions through the conservation tax)."

As a follow up to the "White Paper" recommendations, the Board moved forward with draft Addendum XII, reaffirming the need to establish consistency in the qualification and allocation of fishing privileges across affected state and Federal jurisdictions, and included a recommendation on the critical need for a central database. Lack of a central database was also one key concern in NMFS comments provided to the Commission during the initial round of public comments on draft Addendum XII. It would also reduce the administrative burden on all agencies working to coordinate ITT programs. (See Appendix 11 – NMFS Comments on Draft Addendum XII, dated April 11, 2008). In fact, Addendum XII clearly states that development of a central database is a "fundamental requirement to the effective administration of this [the ITT] program." (See Appendix 3 – Addendum XII, dated February 2009). Since then, NMFS has also received public comments on its DEIS and Proposed Rule stating the importance of a centralized database (Refer to Appendix XX).

Latent Effort

"Latent effort" is an important concept that is discussed in greater detail throughout this chapter, but particularly in the analysis of potential ITT programs. The term might initially seem something of an oxymoron: i.e., describing "effort," the act of doing something, as "latent," something that is inactive or dormant. For purposes of this analysis, however, latent effort should be considered potential effort – effort that is not actually occurring at present, but that could potentially be activated in the future.

[98] The Commission's White Paper is attached to this FEIS as Appendix 6.

In the lobster trap fishery, latent effort (as well as active effort), is generally measured in terms of lobster traps. For example, a Federal lobster permit holder in LCMA 2 can fish up to 800 lobster traps. That permit holder, however, might only decide to fish with 500 traps. In such a scenario, the lobster fishing effort on paper is 800 traps, but only 500 are actually in the water being fished; the remaining 300 traps are "dormant" and would be described as latent effort.

From a lobster management point of view, the difficulty with latent effort is that it is hard to quantify with any degree of precision. There is no uniform reporting system to document how many traps are actively fished in a given year versus how many traps stay on shore. Further, even if latent effort could be quantified, the number would only represent a snapshot of effort existing at a given time, i.e., latent effort goes up and down seasonally as lobster fishers increase and decrease the number of traps they set in the water depending on conditions and circumstances. Unfortunately, when scientists assess the lobster stock, the scientific conclusions are based upon what is actually occurring on-the-water – latent effort, because it exists only on paper or on-the-shore, does not enter the scientific equation and as such looms as an unaccounted-for variable.

What managers do know is that latent effort exists. Clearly, many, perhaps even most, lobster fishers fish less than the maximum number of traps allowable. Simple economic theory suggests that lobster fishers who are not using their traps would attempt to maximize income by selling these latent traps to somebody who could use them. In this way, latent effort would be activated and on-the-water effort could be increased. Accordingly managers must take a hard look at programs that have the potential to activate latent effort to ensure that the program does not compromise the overall conservation goals of the Lobster Plan. Chapter 4's analysis, particularly the section on ITT, does just that.

"Disconnects" across State and Federal Jurisdictions

The phrase "regulatory disconnects" has been used repeatedly throughout this FEIS and generally refers to situations where states and/or NMFS create independent lobster regulations that are incongruent or at odds with one another. The roots of the regulatory disconnect issue lie in the area-specific nature of lobster management. In 1997, when the Commission originally adopted LCMA-specific management under Amendment 3 to the Lobster ISFMP, the potential for regulatory disconnects was low. Then, management measures were largely limited to trap and gauge size limits that were relatively uniform across the LCMAs. But as the Lobster Plan evolved (the Commission is currently on Addendum XXII to Amendment 3 of the Lobster ISFMP), the management strategies in the LCMAs have become increasingly divergent and distinct.

Divergent LCMA strategies might be less of a problem but for one inescapable biological truth: lobster move. And as they do, those who fish for lobster move with them. Accordingly, a single lobster fisher might fish in multiple management areas and be subject to differing regulations from numerous state and federal jurisdictions. With each added LCMA and each added regulation, the risk of disconnects increases and creates a situation that is potentially unwieldy for fishers and managers alike.

This chapter will continue this discussion of potential disconnects, focusing on how they occur in each of the analyzed alternatives. Some disconnects will be obvious, others less so. For example, Chapter 4's No Action Alternatives (Sections 4.2, 4.3, and 4.4) represent a conscious, easily identifiable decision to part ways with the Commission's Lobster Plan. That is, the No Action Alternatives would continue to allow all Federal lobster permit holders to elect to fish with traps in the Federal waters of the Outer Cape Cod Management Area (OCC LCMA) and LCMA 2, despite the states limiting access to those LCMAs in accordance with the Commission's Lobster Plan. In short, individuals with state permits would be bound to one management regime, those with federal

permits would be bound to another, and those with both permits (the so-called dual permit holders) would be left trying to figure out which management regime controlled what circumstances.

Not all disconnects are as obvious as those identified in the No Action Alternatives. The potential for disconnects can occur even where both NMFS and the states attempt to follow the same Commission Plan. For example, the Commission Alternatives (Sections 4.2, 4.3, and 4.4) represent NMFS's attempt at rote adherence to the Commission's Lobster Plan (and by extension, the states' plans). Nevertheless, detailed though the Commission Plan may be, aspects of it are open to interpretation and the states may apply parts of the Plan differently (e.g., Rhode Island's appeal standards are different than Massachusetts' standards). Further, even where states use identical criteria, the states may review the limited access applications with differing levels of circumspection. Finally, simple statistical analysis suggests it is unlikely that NMFS will be able to duplicate each of the various states' decisions at each of the three decision points (i.e., step 1: qualification; step 2: allocation; and step 3: transfer) on every one of the hundreds of dual permit holders likely to apply.

Ultimately, the Chapter 4 analysis will likely present NMFS with the following range of disconnects: larger scale, but known, disconnects at a programmatic level (No Action Alternatives); less obvious, but still occurring disconnects on a smaller case-by-case scale (Commission Alternatives); or alternatives that seek to mitigate against the programmatic or case-by-case disconnects existing at the respective extremes.

Most-Restrictive Rule

The "most-restrictive rule," requires that the fishing and/or sale of traps be limited to a permit holder's lowest, history-based, LCMA trap allocation[99]. While the most-restrictive rule has broad applications in lobster management, for purposes of this EIS, its importance relates to two concerns regarding effort control:

- Permit holders who designate multiple LCMAs on their permits could, when combining LCMA allocations, double or triple count the number of traps they have historically fished and in this way proliferate the number of traps in the lobster fishery either through their own fishing practices or through the sale of those allocations to other permit holders;
- Dual permit holders (those possessing both state and Federal permits) can similarly double count their allocations by, for example, selling their Federal permit (and the trap allocation that accompanies it) to another fisherman, then electing to fish in an LCMA without historic participation requirements.

The most restrictive rule was passed by the Commission under Amendment 3 in 1997 and in Addendum XII in February 2009. This was followed by Federal Rulemaking (64 FR 68228, December 6, 1999) implementing similar requirements. The most-restrictive rule has broad applications in lobster management and was established originally in recognition of the problems that can arise when permit holders become subject to multiple management regimes, be it state/Federal or multi-LCMA regimes. Fundamentally, its purpose is to act as a sort of "compass" by which a permit holder can navigate through seemingly competing management regimes. It does this by requiring that, when a permit holder is governed by multiple management regimes (either dual state/Federal permits or multiple LCMAs), the more restrictive management measure prevails. This rule applies across the spectrum of lobster management requirements, including min/max gauge sizes, vent restrictions, or trap allocations.

[99] See Chapter 4.1 of this FEIS and Addendum XII (Appendix 3), Section 4.2 for a detailed description of the Most Restrictive Rule.

Appeals

The Commission, in follow up to the White Paper LAP/ITT discussions, addressed the transfer of allocated traps and the impact of trap transfers on the buyer and seller. Readers are urged to review Addendum XII, attached to this FEIS as Appendix 3. Its significance, for purposes of this EIS, lies in how the rule applies to fishing allocated traps. In this context, the most-restrictive rule targets two situations for the permit holder: 1) the permit holder who designates multiple LCMAs on his or her permit, and 2) the dual permit holder, i.e., someone who possesses both a state and Federal lobster permit. In both situations, it is possible for multiple allocations to be combined, or "stacked," resulting in a total number of traps allocated that could exceed the maximum number of traps that the permit holder ever fished historically in any one LCMA. As such, the result may be an increase in effort because 1) a permit holder can potentially fish well beyond their historic level in any one LCMA by combining permit LCMA allocations and, 2) under an ITT program , a permit holder could "transfer" (i.e., sell) some or all of their allocation in one LCMA, and continue to fish their full allocation in another LCMA. The most-restrictive rule addresses this issue by eliminating the potential for stacking and by limiting the number of traps that can be fished or sold (i.e., transferred) under an ITT-type program.

NMFS proposes to allow LCMA 2 and OCC applicants to appeal negative determinations to their LCMA 2 and/or OCC LCMA applications. Specifically, NMFS proposes three types of appeals: Clerical Appeals, Hardship Appeals, and Director's Appeals. All three appeal types were described in detail in Chapter 2. NMFS would offer all three appeals to LCMA 2 applicants and two of the three appeals (Clerical Appeals and Director's Appeals) to OCC LCMA applicants. NMFS would not offer Hardship Appeals to OCC applicants because Massachusetts, where the FEIS predicts most, if not all qualifiers reside, did not offer a hardship appeal in its state process. NMFS was concerned that discordant state and federal appeals processes could undermine the state/federal regulatory alignment that is essential to the program.

Appeals, by definition, allow more effort to qualify and enter the fishery than would otherwise occur. NMFS, however, does not believe that this potential additional effort will negatively impact the fishery. First, the number of appeals is expected to be small. Clerical Appeals allow for the correction of administrative and clerical errors and as such, successful appellants would likely be individuals who should have qualified under the existing criteria in the original instance. Hardship Appeals would be limited to LCMA 2, and the largest LCMA 2 state, Rhode Island, has indicated that few permit holders sought such an appeal. Finally, Director's Appeals are capped insofar as it is only available to individuals who have already qualified under their state permit. These individuals, therefore, are already exerting fishing pressure on the lobster stock, albeit limited to state waters. Second, FEIS analysis suggests good correlation between state qualifiers and potential Federal qualifiers. In other words, although disconnects will likely occur, the FEIS predicts that the number will be relatively low. Finally, even if NMFS encounters greater-than-predicted appeals, NMFS nevertheless believes synchronicity so crucial as to be the overriding factor in proposing the appeal. To the extent that the extra qualified effort becomes a problem, which given the scale of the fishery seems extraordinarily unlikely, this effort can be further reduced in future Commission addenda rule recommendations.

Addendum XVIII Implementation Timing

As stated in FEIS Chapter 2, the concept of trap transferability was adopted by the Commission at the urging of the lobster industry, primarily as a measure to promote economic flexibility for lobster fishers by allowing them to scale their businesses to an optimal level, and as a self-funded industry buy-out, whereby a lobster fisher could sell his or her allocation and retire from the fishery. However, since the development of the ITT Program, the SNE stock was declared to be in a state of recruitment failure due to a combination of environmental factors and continued fishing mortality. The Commission's reaction to the SNE lobster recruitment failure has spurred the industry's need for

transferability. Specifically, the Commission enacted Addendum XVIII to foster stock re-building by implementing, among other measures, a series of trap cuts in LCMAs 2 and 3. These trap cuts are to be phased in incrementally over a number of years (50 percent cut over 6 years for LCMA 2 and 25 percent cut over 5 years for LCMA 3). The cuts have the potential to be impactful, especially in LCMA 2 which will undergo a 25 percent reduction in the first year of the cuts with an additional 25 percent cut over the following 5 years. In LCMA 3, all allocations will be cut 5 percent per year for 5 years resulting in a 25 percent overall cut for all LCMA 3 allocations.

NMFS is considering these trap cuts as part of a separate rulemaking action and will fully analyze the impacts of the cuts in a separate environmental assessment (see ANPR 78 FR 51131, August 20, 2013). The states, however, have already adopted these traps cuts. As a result, Federal dual permit holders have the potential to have their trap allocation cut by virtue of their state permit and operation of the Most Restrictive Rule (discussed in Chapter 4 immediately above). The Commission's Plan mandates that the states implement these cuts during the same year that NMFS implements the ITT Program and Federal trap cuts (see Addendum XVIII, Appendix 6). The lobster industry made it clear in public comments to the Proposed Rule and at Commission Lobster Board meetings that it was critical for transferability to be in place contemporaneously with the trap cuts so that affected lobster fishers can buy and sell traps to mitigate the impacts of the trap cuts.

Accordingly, NMFS is aware that the Commission's trap cuts has increased the importance of NMFS' proposed ITT Program. For example, if traps are transferred before traps are cut, then buyers will never be able to fish at their maximum allocation, which for some businesses might be the allocation necessary for profitability. Conversely, if traps cannot be transferred until long after trap cuts, fishers would be forced to fish at restricted, potentially unprofitable levels, until the ITT transfers were effective. And if NMFS did not approve an ITT Program, all LCMA 2 and 3 fishers would be forced to fish at greatly reduced levels. (see Chapter 3.2 – Economic Environment for a discussion of the relationship of business profitability and trap allocation). Simply put, Addendum XVIII upped the ante and greatly complicated the implementation schedule of the ITT Program. Chapter 4 examines the impacts of the ITT alternatives including the timing impacts on the ITT from the newly enacted Addendum XVIII.

Single vs. Multi-LCMA Trap History

When the Commission finalized the foundational elements of the ITT Program in Addendum XII, it included a provision that would restrict permit holders who purchase traps with fishing history in multiple LCMAs to declaring only one LCMA within which those traps could be fished. Further, the Addendum required that the permit holder forfeit the history for the non-declared LCMAs associated with the traps. The intent of this measure was to avoid the complications that could occur when tracking the multi-LCMA history of a trap as it is bought and sold, and avoid the activation of latent effort if a trap was to be fished in an LCMA it was qualified for, but had not recently been fished in by the previous permit holder. To be consistent with the Commission's transferability provisions, NMFS proposed to implement the single-LCMA limitation when the Federal ITT Program was proposed in June 2013 (see Proposed Rule, 78 FR 35217, June 12, 2013).

Recently, however, the Board realized that the trap transfer database would be able to fully track and maintain records associated with traps having a multi-LCMA history. Consequently, the Commission's Lobster Board reversed its opinion on this issue in Addendum XXI, and modified its trap transfer program to allow the buyer to fish the trap in all the LCMAs for which it was qualified. Given this change in the Commission's Plan, NMFS will consider modifying the Preferred Alternative for ITT by allowing the declaration of multiple LCMAs in such cases. The main benefit is maintaining consistency with the Commission's Plan; however, allowing a trap to be fished in all LCMAs for which it qualified would provide greater business flexibility to lobster fishers by allowing them the option to fish in more than one LCMA.

LCMA 3 Trap Cap

Currently, the maximum number of traps that any Federal lobster permit with an LCMA 3 allocation may have is 1,945. The Commission's Plan, in Addendum XIV, modified the trap cap in LCMA 3 to 2,000 traps per permit. In June 2013, NMFS's Proposed Rule maintained the 1,945 trap cap because the Commission was in the process of deliberating upon the LCMA 3 trap cap and NMFS was unsure what trap cap changes, if any, the Commission would suggest. Ultimately, in October 2013, the Commission affirmed the 2,000 trap cap in LCMA 3 in Addendum XXII for the first year of transferability. Addendum XXII included this trap cap as part of the annual aggregate ownership cap and corresponding active trap caps for each year of the trap reduction schedule adopted in Addendum XVIII. Since the LCMA 3 trap cap is linked to these other addenda that have not been analyzed in this FEIS, NMFS will maintain the 1,945 maximum trap limit in place in the Federal lobster regulations as part of this action and will analyze the 2,000 active trap cap in a separate action within the context of the trap reductions.

4.2 LCMA OCC Alternatives

Table 4.2 - LCMA OCC - Comparison of # of Permits, Traps and Trap Tags by Alternative

		Alternative 1 No Action (Status Quo) 2012		Alternative 2 Commission Alternative 2012		Alternative 3 Qualify Only 2012	
Vessel/Permit #s		Elected	Purchased	Qualified	Purchased	Qualified	Purchased
	MA	85	21[100]	24	21	24	21
	RI	15	1	0	0	0	0
	CT	3	0	0	0	0	0
	NY	1	1	0	0	0	0
	NJ	8	0	0	0	0	0
	Total	112	23	24	21	24	21
Allocation/# of Traps		Allocated	Fished	Allocated	Fished	Allocated	Fished
	MA	68,000	11,732	10,254	11,732	19,200	16,800
	RI	12,000	772	0	0	0	0
	CT	2,400	0	0	0	0	0
	NY	800	800	0	0	0	0
	NJ	6,400	0	0	0	0	0
	Total	89,600	13,304[1]	10,254	11,732[1]	19,200	16,800[1]

1 Includes 10% replacement tags.

Table 4.2, above, shows 1) the projected number of permit holders (either elected or qualified, depending on the alternative) versus the number of permit holders purchasing trap tags (as a proxy for those actually fishing) and 2) total traps allocated versus traps fished under the three alternative scenarios analyzed for the LCMA OCC. Information analyzed in the DEIS was based on data from 2007, which has been updated in this FEIS to include recent data made available by the states in 2013.

For Alternative 1–No Action (Status Quo), it is assumed that current conditions for the LCMA OCC will continue, more or less, and that the most recent data (2012) provides the best projection for the number of permit holders that will *elect* to fish within this LCMA under this scenario. Trap tag data showing the number of permit holders buying trap tags (2012) is used as a proxy for the number of permit holders

[100] There are currently 21 active (purchased trap tags in 2012) LCMA OCC permit holders, all of which have been qualified under Massachusetts's state limited entry program.

actually fishing (since, as stated previously, the fact that a permit holder has "elected" an LCMA does not mean they actually fished there). Under this alternative, the number of traps *allocated* was derived by multiplying the number of traps allowed under a Federal permit/open-access program—800—by the number of those "electing" to fish. The number *"fished"* was provided by the respective states and is based on state trap tag data.

For both Alternative 2–Commission Alternative and Alternative 3–Qualify Only, state-derived data using the Commission-approved criteria spelled out under Addenda XII and XIII was used to project the number of fishers that would *qualify* for an allocation of traps within this LCMA. Under Alternative 2-Commission Alternative, *allocated* trap numbers were also state-derived, again, in accordance with Commission-approved criteria spelled out under Addenda XII and XIII. For Alternative 3-Qualify Only, the number of traps *allocated* was derived by multiplying the number of traps allowed under current regulations (800 traps) by the number of those qualified to fish. However, based on the geographic location of the OCC LCMA and more effective enforcement of the Most Restrictive Rule under a single jurisdiction (the Commonwealth of Massachusetts), the number of traps that would be actively fished under Alternative 3 is likely to be lower than indicated in Table 4.2. Updates made since the DEIS include 2013 data, which reflects changes that occurred since 2007 including a decrease in the number of permit holders electing to fish in the OCC LCMA, because Massachusetts has already implemented its limited access program for dual and state-only permit holders.

Based on the findings in Table 4.2, above, the following observations can be made:

- In shifting from the status quo in the LCMA OCC (where any Federal permit holder can elect to fish the LCMA) to a limited-access program, "accounting" of what is taking place within the fishery becomes more accurate in two important ways. First, the number of permit holders actually fishing within the LCMA OCC becomes more accurate. Unlike the status quo, where a wide gap exists between those permit holders "electing" to fish and those actually purchasing trap tags, under a limited-access program, the number of "qualified" permit holders and those purchasing trap tags (those who "really" fished) would generally be equal. Second, the number of traps being fished (i.e., effort) also becomes more accurate, as the gap between the number of traps initially allocated to qualified fishers and those actually fished would become far more narrow than the gap between traps allocated to those "electing" to fish and traps actually fished under the No Action Alternative 1.

- The number of traps allocated shrinks significantly when shifting from the status quo to a LCMA OCC LCMA-specific limited-access fishery (by 90% under Alt 2-Commission Alternative and 85% under Alt 3-Qualify Only);

- Massachusetts emerges as the dominant player within the LCMA OCC under a limited-access program; no permit holders within the other contiguous states would qualify for an initial allocation of traps, based on the qualifying criteria passed by the Commission. This may be due to the geographical characteristics of the LCMA OCC (predominantly a Massachusetts fishery) and the expense and time required for boats to transit long distances if they were located in an adjacent state. Further, the practical reality of changing fishing locations in a highly territorial fishery limits to some unquantifiable degree the extent to which vessels switch from one LCMA to another.

Keeping these basic findings in mind, the following discussion analyzes the potential regulatory, biological, economic, and social impacts of the three proposed alternatives for the LCMA OCC.

4.2.1 Alternative 1- No Action

Regulatory Impacts

This section addresses potential regulatory impacts associated with the LCMA OCC No Action alternative. Potential regulatory impacts would be from the degree to which the proposed measures are compatible with the Commission-passed measures under Addendum XII, currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE-TO-MAJOR, ADVERSE, LONG-TERM, DIRECT REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under this alternative, no Federal LCMA-specific limited access program would be enacted in the LCMA OCC. As such, Federal lobster management in the LCMA OCC would remain as is and the following actions would continue:

1. Owners of any fishing vessel with a Federal limited access lobster permit could designate and fish in the federal portion of the LCMA OCC[101] under Federal regulations; and

2. Owners of any fishing vessel designating the LCMA OCC on their Federal limited access lobster permit could fish up to 800 traps under Federal regulations.

Compatibility with Commission-Approved Measures

Alternative 1-No Action would deviate from measures outlined in the Commission's ISFMP and associated state regulations in two significant ways.

1. States would follow the Commission-approved plan to cap effort in state waters based on fishing history while, in the Federal fishery, the option for the universe of 3,200+ Federal permit holders to elect the OCC on an annual basis, regardless of their fishing history, (each with an 800 trap allocation) would continue.

   By definition, Alternative 1 rejects the implementation of compatible regulations and, in so doing, rejects efforts by the Commission to cap effort.[102] Further, Alternative 1-No Action could be viewed by Commission states as a refutation of the cooperative principles upon which lobster management is based. While nothing in the Atlantic Coastal Act or ISFMP Charter obligates the Federal government to rote adherence to every aspect of the Commission's Lobster Plan (and there have been past occasions where NMFS rejected a Plan recommendation or added a measure that was not recommended),[103] never has NMFS refused a core element of a Commission LCMA

[101] Federal permit holders renew their Federal permits annually. When they do so, they can designate (i.e., choose) any or multiple LCMAs on that permit for the coming year (in those LCMAs with Federal limited entry programs – i.e., LCMA 3, 4 and 5 – the permit holder must have previously qualified for entry in order to choose such an LCMA). In other words, Federal permit holders start each fishing season with a blank slate for a Federal permit on which they can pick and choose the LCMA or LCMAs in which they are going to fish. Once they choose, however, they are bound by that designation for the remainder of the fishing year.

[102] Addendum III, Section 2.1.7.2, February 20, 2002. As discussed in Chapter 2 (Sec 2.1), under Addendum III of Amendment 3 of the ISFMP, the Commission created the LCMA OCC limited entry program "…to control expansion of fishing effort" and, following this, specifically recommended that both the states and Federal governments implement compatible regulations. This recommendation was further supported in the approval of Addendum XIII in May 2008.

[103] For example, NMFS didn't implement the recommended vessel upgrade restrictions of Amendment 3 and added OCC max size and v-notch restrictions despite those restrictions not being part of the Commission's OCC plan.

plan or failed to implement an entire addendum. Alternative 1-No Action thus would likely frustrate Commission states that consider a Federal OCC limited access plan as being a necessary component to the effectiveness of their state OCC plan.

2. Under Alternative 1-No Action an ITT program in Federal waters would not occur because the necessary preceding steps—qualify and allocate—would not take place.[104]

3. Under Alternative 1-No Action a seasonal trap haul-out in the Federal waters of the OCC LCMA would not be adopted. Dual permit holders with a Massachusetts authorization to fish with traps in the state waters of the OCC LCMA would be bound to the Massachusetts closure regulations under the most restrictive rule. Federal-only permit holders electing to fish in the OCC LCMA would be able to fish with lobster traps in the Federal waters of the OCC LCMA during the state trap haul-out period.

As a result of these differences between Federal and state programs, management, administrative and enforcement objectives would become more difficult to achieve, as described below:

Management Impacts

Under Alternative 1- No Action, the difficulties in managing a shared, but unaligned, state-Federal program for the American Lobster fishery will continue (see Section 3.1 for a discussion of these difficulties). While analytic tools to quantitatively predict the impacts from this inability to align the programs are unavailable, NMFS believes that the potential impacts to management of the American Lobster fishery can be qualitatively described, as follows:

- Because under No Action, participation in the Federal fishery remains broadly defined to a universe of 3,200+ permit holders, it is difficult to measure, and thus manage, fishing effort with this fishery. Under Alternative 1, anywhere from 184 permits (2007 data), to 225 permits (2004 data) to over 3,000 permits (based on total Federal permits) could be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 147,000 traps (184 permits x 800 traps) to 2,400,000 traps (3,200 permits x 800 traps) could be fished in any given year. While it is unlikely that all 3,200+ permit holders would designate the OCC on their Federal permit, managers face the difficult challenge under No Action of understanding the level of real participation in the fishery and this makes it difficult to respond with any precision to problems facing the resource.
- Because under Alternative 1-No Action, any Federal permit holder could fish up to 800 traps in Federal waters of the OCC, effort control within the fishery will largely depend, by default, on the effective state enforcement of the Most Restrictive Rule. It is unclear whether and how affected states would enforce the Most Restrictive Rule, especially in situations where an individual receives a zero allocation on the state permit, or has been altogether disqualified under a state's OCC limited access program.
- Because under Alternative 1-no Action, Federal permit holders without a Massachusetts OCC LCMA lobster license may fish in the Federal waters of the OCC LCMA during the annual trap haul-out period, it could compromise the effectiveness of the trap haul-out as a means of enforcing trap limits in the area.

[104] It is possible that an ITT program at the state level could proceed in the absence of a complementary Federal program. This is discussed in more detail in Section 4.4.

Administrative Impacts

Under Alternative 1-No Action, the administrative and enforcement burden to affected state and Federal jurisdictions would potentially increase as circumstances surrounding the disconnects between state/Federal management of the dual permit holder continue unaddressed.

A dual permit holder is a fisher who possesses both a state and Federal lobster permit. Because geographically the LCMA OCC is predominately a Massachusetts fishery, state requirements by Massachusetts are determinative of whether one can effectively fish for lobster in this LCMA. Specifically, Massachusetts requires a state landing permit in order to land lobster within its jurisdiction.

At the same time, administratively, NMFS and Massachusetts operate under a joint State-Federal Trap Tag Memorandum of Understanding (MOU), whereby Massachusetts is authorized to issue trap tags to all dual permit holders residing in Massachusetts. Under Alternative 1, No Action, it would be possible for a dual permit holder to not be qualified by the state, but still request that the LCMA OCC be included on the state-issued, coastal/EEZ trap tag because under the current Federal program anyone can elect and receive an allocation of up to 800 traps. Under these circumstances, Massachusetts currently refuses to issue trap tags with an OCC designation.[105]

The dual permit holder thus could be legally prohibited by Massachusetts from fishing in the LCMA OCC under state law and at the same time legally request his Federal trap tags from NMFS directly. Under Alternative 1, if the affected Federal permit holder requests his or her allotment of trap tags directly from NMFS, those tags would continue to authorize fishing in the LCMA OCC, even though the fisher may be excluded from effectively fishing those traps because of state landing requirements.[106]

The same situation is possible for some unknown number of dual permit holders from states other than Massachusetts. Given the geographic location of the LCMA OCC, it is likely that any non-Massachusetts dual permit holders would be from the adjacent states of New Hampshire or Rhode Island. Similar to Massachusetts, these states have Trap Tag MOUs with NMFS, and both states issue coastal/EEZ trap tags to Federal permit holders. But while Massachusetts has aggressively enforced its OCC limited-access regulations, it is less clear whether other adjacent states will as aggressively administer and enforce those restrictions. With different state-Federal management measures in effect under Alternative 1, combined with the complex logistics of issuing trap tags for up to seven LCMAs, it may be possible for non-Massachusetts vessels to elect the LCMA OCC and acquire trap tags authorizing access to fish there with traps. This situation could also result in some dual permit holders and Federal-only permit holders fishing in the Federal waters of the OCC LCMA during the state-waters closure period.

[105] The ISFMP, in Section 4.5 of Addendum XII, clearly supports this position and includes, as a compliance requirement, that "States will enact rules making it unlawful for any permit holder to order, possess or fish with trap tags designated for an LCMA not specifically authorized by a state in compliance with Plan amendments or addenda."

[106] As a policy matter, when a dual permit holder is denied trap tags by a state and NMFS subsequently authorizes the issuance of EEZ trap tags, NMFS notifies the appropriate state regulatory agency of the Federal action. NMFS also informs the tag recipient that: "*Regardless of the amount of trap tags purchased, Federal lobster regulations require Federal permit holders to abide by more the restrictive of either state or Federal trap limits. The mere issuance of a Federal trap tag does not necessarily override any enforceable state law that may be applicable to a Federal lobster permit holder with a state lobster license. Therefore, it is recommended that you contact [your state Fisheries agency] for further clarification on state lobster regulations and trap limits*." In situations where NMFS authorizes OCC trap tags for Massachusetts residents that did not qualify under the Massachusetts state program, it has been the Commonwealth's policy to notify the dual state and Federal permit holder not to purchase the tags; if tags are purchased, Massachusetts requires that they be forfeited or else the permit holder will lose their Massachusetts resident coastal lobster license or landing permit. It is possible that some unknown number of MA residents would chose to forfeit their Massachusetts state coastal lobster license or landing permit and attempt to land lobsters harvested in the Federal waters of the OCC in an adjacent state. In a case where an adjacent state does authorize landing permits, then increased on-the-water enforcement may be necessary to ensure traps were not set in Massachusetts state waters.

Enforcement Impacts

The circumstance described above, where a lobster permit holder can receive Federal authorization and be issued trap tags to fish in the LCMA OCC contrary to existing state law (and Addendum XII) and then be forced to forfeit those tags, is both confusing and frustrating for the affected dual permit holders and can add burden on law enforcement and the state and Federal administrative agencies that must implement the trap tag program.

Under Alternative 1, administration and enforcement of the LCMA OCC lobster fishery would likely become more onerous for state marine fisheries and law enforcement and Federal management and law enforcement. Dockside and on-the water enforcement may need to increase to confirm that traps in the water conform to the most restrictive measures in place. At the state level, Massachusetts enforcement officers, working dockside and on the water, would likely be most familiar with the OCC plan and thus would be most likely to effectively enforce the more restrictive Massachusetts OCC limited-access measures. In contrast, at the Federal level, NMFS Office of Law Enforcement (OLE) officers, working primarily dockside, would likely be most familiar with the Federal lobster regulations and less familiar with Massachusetts lobster regulations that may differ from Federal regulations. The U.S. Coast Guard (USCG) would be the agency responsible for at-sea enforcement of Federal lobster regulations in the EEZ. With enforcement and oversight responsibilities over broad geographic areas, the USCG would likely be most familiar with the Federal OCC lobster regulations and may not be as familiar with the more restrictive Massachusetts OCC lobster regulations. In either situation, the ability to easily and effectively enforce uniform lobster regulations on the OCC would become more complicated, and likely require some unknown level of increased coordination and additional time required for verification of the permit/trap tag status of affected OCC lobstermen. Additionally, complicated and potentially conflicting regulations may allow for an increase in fisheries violations and additional fishing effort on the resource.

Trap Haul-Out Period: The ISFMP and Massachusetts state regulations specify that there be a lobster trap haul-out period for the LCMA OCC: "Fishermen shall be required to remove all lobster traps from waters of the OCC LCMA during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure." (see Appendix 4, Addendum XIII, Section 4.1.6 Trap Haul-out Period). The ISFMP-specified trap haul-out provision is primarily intended to facilitate monitoring and enforcement of the LCMA OCC limited access program and verify that individual lobstermen are in compliance with their assigned trap allocations. As LCMA OCC lobster fishers return their traps to shore, each trap can be easily checked for a valid trap tag, and the LCMA OCC lobster permits can also be verified. Under Alternative 1, Federal regulations would not implement a trap haul-out period as specified in the ISFMP, resulting in additional enforcement impacts.

As discussed earlier in this section, Federal permit holders are bound by the more restrictive of either state or Federal regulations. It is likely that enforcement of the trap haul-out period for dual permit holders residing in Massachusetts would be strictly enforced by the Commonwealth for all state residents in Massachusetts state waters. The USCG's ability to easily and effectively enforce the ISFMP trap haul-out provision on the OCC would likely require some unknown level of increased coordination and additional time for verification of the permit/trap tag status of affected OCC lobstermen. Additionally, complicated and confusing regulations may allow for an increase in fisheries violations under Alternative 1.

Biological and Physical Impacts

The following section discusses the potential indirect biological and physical impacts to lobster, protected species, by-catch fish and bait fish from the LCMA OCC No Action alternative. Potential impacts would occur from the degree to which management measures under the status quo might lead to a change the number of traps in the water or their geographic location, including their concentration in any one LCMA,

which could affect the amount of effort (harvesting) within the fishery. Potential physical impacts relate primarily to the impacts that the placement of lobster traps on the ocean bottom could have on habitat.

Under No Action, all 3,200+ Federal permit holders could elect the LCMA OCC and would be authorized to fish up to 800 traps each in Federal waters. Nonetheless, little change in terms of actual traps fished under this alternative is anticipated. In fact, as indicated in Table 4.2, above, though up to 89,600 traps could be authorized under the status quo, approximately 13,304 were actually fished in 2012. NMFS does not anticipate a significant change in the amount of effort under No Action from what was identified for 2012. Further, there are other factors that NMFS believes limits the increase in the number of traps fished within this LCMA: geographically the LCMA OCC is predominantly a Massachusetts-based fishery; Massachusetts is the single dominant regulatory agency administering the ISFMP and strongly enforces the most-restrictive rule; and, as stated before, the LCMA OCC is a highly territorial lobster trap fishery. Based on these factors, NMFS believes that the potential biological and physical impacts on lobster, protected species, by-catch fish and bait fish, discussed more fully below, will be negligible or minor.

Lobster

Biological Impacts

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under Alternative 1, NMFS believes that the amount of lobster trap gear that may be set in the Federal waters of OCC may increase to some small unquantifiable degree, in part due to inconsistencies in trap tag administration, and that negligible-to-minor adverse impacts to the lobster fishery may occur as a result. Any increase in effort within the American Lobster fishery will add population pressure to lobster stocks within associated LCMAs. The biological stock area where this would be of most concern is Southern New England (SNE), which falls to varying degrees within all LCMAs, with the exception of LCMA 1. The SNE stock is experiencing a state of recruitment failure, is identified as overfished, and additional fishing effort within the LCMA OCC would likely have a small but unquantifiable adverse effect on the ISFMP's SNE rebuilding objectives (for more information on stock status, see Section 1.1.1).

Physical Impacts

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges.

Impacts on the sea floor vary based on the composition of the substrate that the traps come to rest on. Under current practice, inshore lobster traps are hauled, re-baited, and then reset on the ocean bottom frequently, normally from one to three times a week. Frequent hauling in areas of dense vegetation, such as kelp beds and eelgrass, are more likely to result in some damage through rope entanglement or as traps are hauled up. Damage is most likely to occur through leaf shearing (cutting of leaves) and once sheared, the plant generally cannot regrow the lost portion of the leaf, although the plant can produce a new leaf from undamaged meristems. Rope entanglement may also result in seed or flower shearing, which may affect the next years' growth, and uprooting of the entire plant (ASMFC 2000b). However, even in areas

of dense vegetation, the impacts are likely to be minor and of short duration. Since the substrate composition for the OCC is predominantly a sand-based or sand and gravel substrate, trap gear impacts are likely to be minimal, especially when compared to vegetated substrates.

The scientific evaluation of lobster and traps on attached epibenthic megafauna (sponges, soft corals, tube worms) in a European study showed no negative effect on the abundance of attached megafauna (Eno et al., 2001). The pressure wave created by pots as they sank was sufficient to bend sponges and soft coral away from the trap just before contact. Sponges and soft coral, after being covered by traps, took from 4 to 6 days to fully recover an upright position. Soft corals (Gorgonians) were frequently seen to bend under the weight of the traps, but then spring back once the traps were removed. When traps were dragged over the bottom they left tracks, but commercial trap gear appeared to have no negative effect on the abundance of attached benthic epifauna. In fact, uprooted sea pens frequently reinserted themselves in the sediment, and many sponges significantly increased in abundance when compared to a test area where no fishing was allowed. Although individually trap impacts are minor, under current practice, traps are hauled, re-baited, and then reset on the ocean bottom frequently, normally from one to three times a week, therefore over time and increase in trap gear may result in negligible adverse direct impacts on lobster habitat under Alternative 1.

Another way to mitigate the adverse habitat impacts of trap gear, other than trap reductions, is to restrict gear size (ASMFC 2000b). The footprint or maximum size of a commercial lobster trap is regulated under state and Federal regulations. For Federal permit holders, beginning May 1, 2003, all American lobster traps deployed or possessed in any nearshore management area (LCMA 1, Outer Cape, LCMA 2, LCMA 4, LCMA 5, or LCMA 6) cannot exceed 22,950 cubic inches (376,081 cubic centimeters) in volume as measured on the outside portion of the trap, exclusive of the runners (see also Section 3.4).

Protected Species

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

Several endangered species are susceptible to entanglement in fishing gear. Johnson et al. (2005), noted that any part of the trap gear (the buoy line, ground line, float line, and surface system line) creates a risk of entanglement. Many protected species exhibit feeding behavior that increase their susceptibility to entanglements. For instance, right whales spend a substantial amount of time feeding below the surface, or feeding by swimming continuously with their mouths open. They also roll and lift their flippers about the water's surface, behaviors that may add to entanglement risk, especially from vertical buoy lines and surface system lines. Humpback whales commonly use their mouths, flippers, and tails to aid in feeding. Thus, while foraging, all body parts are at risk of entanglement. Leatherback sea turtles seem to be the most vulnerable turtle to entanglement in fishing gear. This susceptibility may be a result of their body type (larger size, long pectoral flippers, and the lack of a hard shell), and their attraction to the gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface.

As noted previously, over 95 percent of lobsters are harvested from lobster traps. Lobster traps may be set singly, each having its own surface line and buoy, or traps may be fished in trawls, normally of two-to-six traps per trawl in inshore areas, where multiple traps are linked together by ground lines, with surface lines and buoys or high flyers usually at the first and last traps of the trap trawl (Sainsbury, 1971). In general, larger off-shore vessels fish 20-40 strings of multiple traps; fishing practices by in-shore vessels can vary by state, but in general they tend to fish traps in smaller increments compared to the off-shore vessels. Implementation of Regulations mandating sinking ground line on all lobster trap gear, effective April 1, 2009, is intended to mitigate entanglements as animals forage along the bottom and

come in contact with trap gear[107]. However, vertical lines that link the bottom-tending trap to the surface line(s) and buoy(s) are still pending regulation[108] and continue to pose an entanglement risk to protected species.

The risk of entanglement of endangered species does increase if there is some small but unquantifiable increase in the level of trap fishing effort in the LCMA OCC under Alternative 1. In fact, due to the strategic geographic location of the LCMA OCC as a major transit area for the endangered right whales on their way to and from spring foraging grounds in Cape Cod Bay and in the Gulf of Maine and southern Canada, trap gear set in this management area is likely to pose a greater risk of entanglement than if the same quantity of gear was set in almost any other lobster fishing area. Therefore, under draft Alternative 1, while any increase in trap fishing effort is likely to be very limited[109], any additional trap gear set in the LCMA OCC does increase the risk of entanglement.

Further, the ISFMP-specified Trap Haul-Out provision[110], primarily intended to facilitate monitoring and enforcement of the LCMA OCC limited entry program and verify that individual lobstermen are in compliance with their assigned trap allocation, would not be implemented under Alternative 1-No Action. Since right whales and other marine mammals are most frequently sighted further offshore in Federal waters as they transit the LCMA OCC, the lack of a complementary trap haul-out period in Federal waters under this alternative may result in a small but unquantifiable increased risk of entanglement.

It is likely that enforcement of the trap haul-out period for dual permit holders residing in Massachusetts would be strictly enforced by the Commonwealth for all state residents in Massachusetts state waters. Because state and Federal management programs would not be well-aligned in such circumstances, at-sea enforcement would likely be difficult logistically. As noted in Section 4.2, the U.S. Coast Guard would be the primary agency responsible for at-sea enforcement of lobster regulations in Federal waters of the LCMA OCC. With enforcement and oversight responsibilities over broad geographic areas, the ability to easily and effectively enforce the ISFMP trap haul-out provision on the OCC would become more complicated. Additionally, complicated and confusing regulations may allow for an increase in fisheries violations and increase the potential for entanglement.

By-Catch Fish

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT, BIOLOGICAL IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

The term “by-catch” refers to the unintentional landing and discarding of animals not specifically targeted by fishing vessels. As discussed earlier under management impacts, under Alternative 1-No Action, trap effort in the LCMA OCC may increase by some small but unquantifiable amount, in part due to the differential trap allocations and the potential that non-compatible administrative and enforcement processes may result in additional gear authorized in the LCMA OCC. However, the impact of what would be expected to be a small increase in the amount of trap gear fished in the OCC is likely to have negligible-to-minor, short-term impacts on by-catch species.

[107] Interested and affected parties can find these regulations at 50 CFR 229.32 or at the whale plan website www.nero.noaa.gov/whaletrp/.
[108] NMFS published a proposed rule (78 FR 42654, July 15, 2013) with a preferred alternative for minimizing risk to large whales due to vertical lines in the water. A final rule is scheduled for the fall of 2014.
[109] Though speculative, this potential increase could occur given that, generically speaking, larger vessels fishing 20-40 strings tend to fish the off shore, while in-shore, the number of strings fished is more variable.
[110] See Appendix 4 - Addendum XIII - Section 4.1.6 Trap Haul-out Period.

In general, the traps used in commercial lobster fisheries are among the more selective types of fishing gear. As a result, overall *levels* of by-catch in traps are low in lobster fisheries relative to other marine fisheries, and fish and invertebrates landed in traps are likely to be discarded with lower mortality rates than those landed with other gear types such as trawls and dredges (Davis 2002). The most common types of by-catch in lobster traps are juvenile lobsters and crabs. Types of fish occasionally caught in lobster traps include tautog, scup, black sea bass, cod, cusk, eels and flounder. A variety of invertebrates are found in and attached to lobster traps, including Jonah and rock crabs, red crabs, starfish, urchins, whelks and conchs (ASMFC 1997; Butler 2004; Miller 2005).

The discard mortality rates (the percentage of discarded animals that die) associated with animals caught in traps is low, particularly when compared against the mortality rates linked with mobile fishing gears such as trawls and dredges. In addition, if traps are lost, Federal lobster regulations mandate a biodegradable ghost panel, a rectangular opening not less than 3 3/4 inches (9.53cm) by 3 3/4 inches (9.53 cm) in the outer parlor of the trap, to allow lobsters and forage species to escape ghost gear (see §697.21(d)(1)). The number of animals that die after being caught and discarded in the American lobster fishery appears small compared to actual lobster landings.

Bait Fish

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

Bait is used in lobster traps to attract lobsters into the trap and is an important component of the lobster fishery. It has been estimated that 50-60,000 tons of bait are used in the U.S. lobster fishery annually. The species used as bait in lobster traps varies by geographic location, and price is a major factor when selecting lobster bait. Often, lobstermen have specific preferences for their preferred bait, but Atlantic herring is the major species used by volume. In Maine, herring comprises nearly 90% of the bait used, with fish such as menhaden, alewives, and redfish making up the remaining 10%.

In addition to herring, species such as skates are frequently used in lobster traps as bait, especially south of Cape Cod and in the offshore lobster fishery. Landings of skate, for human consumption and bait needs, have remained relatively steady in recent years, averaging approximately 15,000 tons a year since 2001. Lobstermen also make use of fish frames, the body and skeleton that remain after the edible portion of meat is removed. The type of fish frames used as bait varies considerably by season and geographic location, but generally includes redfish, flatfish, and other groundfish species. Generally, fresh fish is the preferred bait over frozen fish, but when supplies of fresh bait are low, frozen fish, mainly frozen herring, is a frequent substitute for fresh bait.

As stated above, under Alternative 1-No Action the number of traps fished in the LCMA OCC may increase by some small but unquantifiable amount and some level of trap fishing would continue year round in the Federal waters of the OCC LCMA without Federal adoption of the two-month trap haul-out period. If trap fishing effort increases, there would be a proportionate increase in the use of lobster bait, and the demand for bait would extend to a limited extent throughout the year in the absence of the two-month trap haul-out period. In the LCMA OCC, a variety of bait is used, including herring, skates, and fish frames. Given the total volume of bait fish used in the U.S. American lobster trap fishery, however, any adverse impacts associated with increased bait demand would be minor.

4.2.2 Alternative 2 – Commission Alternative (Preferred Alternative)

Under this alternative, four significant impacts to the LCMA OCC Federal American Lobster fishery would occur:

1. The number of Federal permit holders would be capped in accordance with qualification criteria approved by the Commission under Addenda XII and XIII. To fish within LCMA OCC, permit holders would have to first qualify for an allocation, eliminating the practice of simply "electing," or "checking off" the LCMA on their annual permit applications;

2. The total number of traps allocated would be capped at a level based on the historical fishing practices of those fishers who are determined to qualify for the LCMA OCC. This trap cap will establish a new limit for fishing effort within this LCMA.

3. Fisheries management information in the LCMA OCC becomes more accurate. More accurate information on the number of participants and trap fishing effort will result from accurately accounting for who is fishing in the LCMA OCC (through step 1, "qualification") and how many traps are being used (through step 2, "allocation").

4. The development of a joint state-Federal Individual Transferable Trap (ITT) Program in the LCMA OCC becomes possible. Completion of the qualification and trap allocation steps, and the resultant ability to accurately identify participants and their individual trap allocations, creates a baseline of information, without which an ITT program cannot occur.

5. NMFS would implement a complementary trap haul-out period consistent with the January 15 through March 15 annual closure mandated under the Massachusetts regulations. Activating the complementary closure in the Federal waters of the OCC LCMA would assist in the effective enforcement of the trap limits and trap tagging requirements in the LCMA.

Regulatory Impacts

MAJOR, BENEFICIAL, LONG-TERM, DIRECT, REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Compatibility with Commission-Approved Measures

Alternative 2 would implement management measures for the American Lobster fishery that are compatible with already-approved Commission measures. Inconsistencies between state-Federal lobster management (see Section 3.1), while not entirely eliminated, would become more manageable due, in part, to the more accurate accounting of fishing effort within the LCMA under Alternative 2. These issues are discussed in more detail below.

Management Impacts

In terms of management of the American Lobster fishery, a number of beneficial, long-term, direct impacts are expected to occur under Alternative 2. Under this alternative, the ambiguity between what is true "on paper" versus what is actually occurring (the "dual reality" discussed in Section 3.3) is substantially reduced. Because only those permit holders who have a demonstrated history of actually fishing within the LCMA OCC will initially qualify for an allocation of traps, the "inflated" numbers found under an open access program will disappear. As a result, resource managers will have a better

understanding of who is fishing and how many traps are being used and this will allow them to better manage the overall level of effort in the fishery along with the overall protection of the resource.

Further, the potential disconnects between the state and Federal management of dual permit holders will likewise be substantially reduced. Because state and Federal identification of qualified fishers and allocated traps would "match up," the potential for a dual permit holder to be legally prohibited from fishing in the LCMA OCC under state law while technically still being legally authorized to fish in Federal waters of the LCMA OCC will be minimized. Further, use of Clerical and Director's appeals will allow NMFS to better align its qualification and allocation decisions with state decisions, thus further reducing the potential for incongruent permit results for dual permit holders. NMFS specifically asked in its DEIS for commentary on use of appeals and the response from the public was uniformly supportive (see response to Comment No. 18 and 19 - Appendix 7). NMFS's decision to not offer hardship appeals to OCC applicants makes sense. Hardship appeals potentially increase regulatory loopholes and, because Massachusetts denied use of such an appeal in its state criteria, the appeal would create inconsistency given that one entity (NMFS) based decisions on criteria not recognized by another (Massachusetts).

Similar to the effect on the number of qualified permit holders, Alternative 2 will also substantially reduce the "inflated" numbers of allocated pots that occurs under the current management program. For example, a Federal limited access program in the LCMA OCC would result in approximately 24 qualifiers fishing approximately 10,254 traps maximum (Table 4.2). In contrast, under the No Action alternative, anywhere from 112 permits (based upon 2012 data) to over 3,000 permits (based upon total Federal permits) could be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 89,600 traps (112 permits x 800 traps) to 2,400,000 traps (3,000 permits x 800 traps) could be fished in any given year. As stated before, because an individual designates the LCMA OCC on their permit and purchases trap tags does not necessarily mean that the individual is fishing in the LCMA or fishing with all possible traps, and further, NMFS has no expectation that all 3,200+ permit holders would designate the OCC on their Federal permit. Nonetheless, under an area-specific limited access program, fishery resource managers can better calculate the level of effort within the fishery (measured by traps fished) when compared to the current management program and it is believed that this information will allow managers to more easily and precisely respond to future threats to the resource.

Administrative Impacts

Effective coordination and consistent measures across state and Federal jurisdictions would prevent the issuance of trap tags to Federal lobster vessels that did not qualify under a Federal qualification/allocation process based on the criteria specified in the ISFMP. As specified in the MOU, "Federal management regulations for American lobster under 50 CFR Part 697.4(d)(2) authorize the Regional Administrator, by Agreement with state agencies, to allow trap tags issued by those agencies to be used and recognized as valid Federal lobster tags in compliance with Federal lobster management regulations." Issuance of OCC Federal trap tags to Federally non-qualified OCC permit holders would not be in accordance with the Federal management regulations under draft Alternative 2, and would not then be in accordance with any existing trap tag MOU.

Trap Haul-Out Provisions: The coordinated implementation of the ISFMP would also allow for more effective implementation of the ISFMP-specified LCMA OCC Trap Haul-Out Provision. This provision requires all qualified Federal permit holders electing the LCMA OCC to remove their fixed gear as follows: "Fishermen shall be required to remove all lobster traps from waters of the LCMA OCC during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the LCMA OCC during this seasonal closure." (see Appendix 4, Addendum XIII, Section 4.1.6 Trap Haul-out Period) Under Alternative 2, 3 out of the 24 permit holders qualified selected one or

more LCMAs in addition to the LCMA OCC (Table 4.2). Since NMFS is aware of no state other than Massachusetts that has qualified its permit holders under a state OCC program based upon the ISFMP criteria, and Massachusetts dual permit holders are already bound to abide by the Trap Haul-out Period, NMFS believes there will be no additional adverse impacts on those Federal permit holders selecting one or more LCMAs, in addition to LCMA OCC, on their federal permit, when they are prohibited from fishing with traps in any LCMA during the OCC-specified trap haul-out period.

Enforcement Impacts

Alternative 2 is expected to have beneficial impacts in terms of program enforcement, due simply to the fact that the absence of those disconnects discussed above and in 3.1, will be reduced. In particular, because the state-Federal management of dual permit holders and their allocations will no longer be poorly aligned, the need for more on-the-water enforcement to confirm the number of traps being placed there would be reduced.

Further, NMFS is aware that a small but unquantifiable number of dual permit holders may be affected by differential state and Federal trap allocations. When differences in allocations occur, the ISFMP specifies that the more restrictive trap allocation shall apply. In the case of the LCMA OCC, due to the geographic location, single state agency administering the tags, cooperative administration and enforcement will more likely be enhanced.

Biological and Physical Impacts

The following section discusses the potential indirect biological and physical impacts to lobster, protected species, by-catch fish and bait fish from the LCMA OCC Alternative 2-Commission Alternative. Potential impacts would occur from the degree to which management measures under this alternative might lead to a change the number of traps in the water or their geographic location, including their concentration in any one area, which could affect the amount of effort (harvesting) within the fishery. Potential physical impacts relate primarily to the impacts that the placement of lobster traps on the ocean bottom could have on habitat.

Under Alternative 2, little change in the amount of effort (i.e., traps in the water) is anticipated because participants would be qualified and traps would be allocated based on historical fishing practices. Also significant is that the shift from the status quo to a limited access program under this alternative would substantially reduce the amount of potential latent effort within this fishery. This is evident in the difference between the number of traps allocated compared with the number of traps fished seen in Table 4.2 under each option: for Alternative 1-No Action, the difference exceeds 75,000 traps; for Alternative 2-Commission Alternative, the difference is minor (less than 1,500). As a result, NMFS believes in general that the indirect biological and physical impacts from the management measures proposed under this option, discussed more fully below, on lobster, protected species, by-catch fish and bait fish will negligible or minor.

Lobster

Biological Impacts

MINOR, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Under Alternative 2, minor beneficial biological impacts on lobster are expected because a joint state-Federal program would more effectively cap and enforce both the number of lobster vessels fishing in the

LCMA OCC, as well as the number of lobster traps authorized to fish there when compared to the status quo. Furthermore, because Alternative 2 would allow only qualified permit holders to elect the LCMA OCC on both their state and Federal licenses and those qualifiers would be allowed to purchase trap tags only up to their historic participation level, latent effort would be substantially reduced relative to the status quo. Under Alternative 2, there would be little or no difference in the correct number of OCC trap tags to issue, since both state and Federal trap allocations would be compatible for the majority, if not all, dual permit holders.

Physical Impacts

MINOR, BENEFICIAL, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

While there have been few studies (Eno et al, 2001) on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long-term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Frequent hauling in areas of dense vegetation are more likely to result in some damage through rope entanglement, however, even in areas of dense vegetation, the impacts are likely to be minor and of short duration. Since the substrate composition for the OCC is predominantly a sand based or sand and gravel substrate, trap gear impacts on kelp and eelgrass vegetation is likely to be minimal. Furthermore, since this alternative would cap effort at historical levels, and possibly reduce effort in the future through the elimination of potential traps, benefits to the benthic environment may result by limiting the potential number of traps that could be fished.

Another way to mitigate the adverse habitat impacts of trap gear, other than trap reductions, is to restrict gear size (ASMFC 2000b). The footprint or maximum size of a commercial lobster trap is regulated under state and Federal regulations (see also Section 3.4).

Protected Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Under Alternative 2, a number of factors will reduce the potential for additional traps in the water, producing minor beneficial impacts on protected species as a result. First, while all of the LCMA OCC alternatives could trigger latent effort, under Alternative 2 the amount of potential latent effort is the smallest and thus the threat from additional vertical lines in the water is reduced relative to the status quo. Second, through enhanced administrative and regulatory coordination, the Federal issuance of trap tags will be better-aligned with the smaller number of state trap tags issued under this alternative (see Table 4.2). All jurisdictions would be bound under the state-Federal Trap Tag MOU to restrict trap fishing access only to dual permit holders that are qualified to fish in the OCC. Third, coordinated state-federal enforcement would be consistent in application, both dockside and at-sea, and draft Alternative 2 would reduce the admittedly limited likelihood of increased trap fishing effort that might occur under the status quo (Alternative 1).

Finally, the coordinated implementation of the ISFMP-recommended Trap Haul-Out Provision, as referenced above, may provide minor positive benefits to protected species by requiring all lobstermen that elect the LCMA OCC on their Federal lobster permit to remove their fixed gear during certain periods of the year, thereby reducing the threat of entanglement for protected species. Since Massachusetts dual permit holders are already bound to abide by the Trap Haul-out Period, there are

expected to be no additional adverse impacts on Federal permit holders selecting one or more LCMAs in addition to the OCC on their federal permit because the closure would only be effective in the OCC LCMA.

By-Catch Species

NEGLIGIBLE–TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Under Alternative 2, a number of factors will reduce the potential for additional traps in the water, producing minor beneficial impacts on by-catch species as a result. First, while all of the LCMA OCC alternatives could trigger latent effort, under Alternative 2 the amount of potential latent effort is the smallest and thus the potential increase in the amount of by-catch relative to the status quo is reduced. Second, through enhanced administrative and regulatory coordination, the Federal issuance of trap tags will be better-aligned with the smaller number of state trap tags issued under this alternative (see Table 4.2), again reducing the potential number of traps in the water relative to the status quo. All jurisdictions would be bound under the state-Federal Trap Tag MOU to restrict trap fishing access only to dual permit holders who are qualified to fish in the OCC. Third, coordinated state-federal enforcement would be consistent in application, both dockside and at-sea, and draft Alternative 2 would reduce the admittedly limited likelihood of increased trap fishing effort that might occur under the status quo (Alternative 1).

Finally, the coordinated implementation of the ISFMP recommended Trap Haul-Out Provision, as referenced above, may provide minor positive benefits to by-catch species by requiring all lobstermen that elect the LCMA OCC on their Federal lobster permit to remove their fixed gear, resulting in a proportionate reduction in by-catch for this fishery.

Bait Fish Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE 2.

Under Alternative 2, a number of factors will reduce the potential for additional traps in the water, producing minor beneficial impacts in terms of reduced demand for bait fish species as a result. First, while all of the LCMA OCC alternatives could trigger latent effort, under Alternative 2 the amount of potential latent effort is the smallest and thus the potential increase in the demand for bait fish relative to the status quo is reduced. Second, through enhanced administrative and regulatory coordination, the Federal issuance of trap tags will be better-aligned with the smaller number of state trap tags issued under this alternative (see Table 4.2), again reducing the number of traps in the water relative to the status quo. All jurisdictions would be bound under the state-Federal Trap Tag MOU to restrict trap fishing access only to dual permit holders that are qualified to fish in the OCC. Third, coordinated state-federal enforcement would be consistent in application, both dockside and at-sea, and draft Alternative 2 would reduce the admittedly limited likelihood of increased trap fishing effort that might occur under the status quo (Alternative 1), thereby potentially decreasing the demand for bait fish. While any reduction in traps would result in a beneficial reduction in the demand for bait-fish species, NMFS believes such reductions under this alternative would be negligible when compared to total demand for bait in the U.S. lobster trap fishery.

4.2.3 Alternative 3 – Qualify Only Alternative

Similar to Alternative 2, the following significant impacts to the Federal American Lobster fishery in the LCMA OCC would occur under Alternative 3-Qualify Only:

1) The number of Federal permit holders would be capped in accordance with qualification criteria approved by the Commission under Addenda XII and XIII. To fish within LCMA OCC, permit holders would have to first qualify for an allocation, eliminating the practice of simply "electing," or "checking off" the LCMA on their annual permit applications;

2) Fisheries Management Information in OCC becomes more accurate. More accurate information on the number of participants will result from accurately accounting for who is fishing in the LCMA OCC (through step 1, "qualification").

In general, this alternative reflects a compromise between absolute consistency with the Commission-approved Limited Access Program and the realization that consistency on all aspects of the program and between all state/Federal jurisdictions involved may not be possible. In terms of qualifying permit holders to fish in the LCMA OCC, for example, the process provided under Alternative 3 is identical to Alternative 2. In terms of the number of traps allocated to qualified fishers, however, Alternative 3 would maintain the status quo: all Federal permit holders qualifying for an allocation will be allowed to fish up to 800 traps. As discussed earlier, because states may have interpreted the ISFMP criteria for allocating traps to qualified fishers differently than NMFS, NMFS is considering the benefits of maintaining the uniform Federal allocation of 800 traps currently in place.

Regulatory Impacts

ALTERNATIVE 3 — QUALIFY-ONLY HAS BOTH MINOR, BENEFICIAL, LONG-TERM, DIRECT REGULATORY IMPACTS AS WELL AS MODERATE, ADVERSE, LONG-TERM DIRECT REGULATORY IMPACTS.

Compatibility with Commission-Approved Measures

In terms of qualifying fishers for an allocation within the LCMA OCC, Alternative 3 would implement management measures for the American Lobster fishery that are identical to those already passed by the Commission and, as such, would be compatible with Commission-approved measures. Because under this alternative permit holders must first qualify into the fishery (the same as they must under Alternative 2), some benefits in terms of defining total effort in an LCMA are realized that will be helpful to resource managers by allowing them to more easily and precisely respond to future threats to the resource.

At the same time, however, differences between state and Federal trap allocations, most notably amongst dual permit holders, will likely continue. These differences will allow the disconnects between state and Federal lobster management described under Alternative 1 (status quo) to also continue and effective management of the lobster fishery thus will be similarly difficult to achieve. For example, under Alternative 3, 24 Federal permit holders could fish up to 800 traps in the Federal waters of the OCC; under the state program, some if not most of those same qualifiers received a different allocation, resulting in a 9,000+ trap allocation difference between these programs (Table 4.2). Effective state administration of tag issuance under the Most Restrictive Rule is likely to mitigate inconsistencies and help guide permit holders. However, in the unlikely event lobstermen do qualify from other states, it is unclear if there would be the same level of effective enforcement of the Most Restrictive Rule.

Further, as with Alternative 1-No Action, an ITT program in Federal waters would not occur under Alternative 3 because the necessary preceding step—allocating traps using Commission-approved criteria—would not take place. Because Massachusetts allows ITT in state waters, disconnects between state and federal allocations would likely exacerbate over time.

Administrative Impacts

The administrative impacts of Alternative 3 are similar to Alternative 1 (status quo). As with Alternative 1, trap tag purchases would be somewhat more complicated to administer in situations where a dual permit holder with a more restrictive state trap allocation is held to the lower state imposed trap limit in state waters. Under this scenario, it is possible that dual permit holders may subsequently request authority from NMFS to purchase trap tags in excess of their state trap allocation up to the Federal Alternative 3 trap cap of 800 traps. That said, NMFS believes that these impacts would be minimal, should they occur, given that Massachusetts is the single primary state trap allocation authority in the LCMA OCC and effective state enforcement of a lower state trap allocation is more likely on the Outer Cape due to its geographic isolation.

Trap Haul-Out Provisions: Under Alternative 3, a limit on the number of qualified Federal participants would allow for more effective implementation of the ISFMP-specified LCMA OCC Trap Haul-Out Provision requiring all qualified Federal permit holders electing the LCMA OCC to remove their fixed gear as specified: "Fishermen shall be required to remove all lobster traps from waters of the LCMA OCC during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure" (see Appendix 4, Addendum XIII, Section 4.1.6 Trap Haul-out Period). Since Massachusetts dual permit holders are already bound to abide by the trap haul-out period, there are expected to be no additional adverse impacts on Federal permit holders selecting one or more LCMAs, in addition to LCMA OCC, on their federal permit, because the closure would only apply to fishing in the Federal waters of the OCC LCMA.

Enforcement Impacts

The enforcement impacts of Alternative 3 are largely identical to Alternative 1-No Action. While the number of vessels authorized under both state and Federal authority would be compatible, differences in trap allocations would require additional enforcement coordination by all affected jurisdictions to ensure that vessels did not exceed the more restrictive trap limit authorized under the state program. Additionally, if vessels with a lower state trap allocation subsequently petition NMFS for their full complement of 800 trap tags and in excess of their state allocation, increased enforcement would be necessary to ensure vessels are not exceeding the most restrictive trap limit authorized.

Although a limit on the number of qualified Federal participants would allow for more effective implementation of the ISFMP-specified LCMA OCC Trap Haul-Out Provision, enforcement coordination would be likely need to increase to ensure compliance by federal vessels.

Biological and Physical Impacts

The following section discusses the potential indirect biological and physical impacts to lobster, protected species, by-catch fish and bait fish from the LCMA OCC Alternative 3-Qualify Only Alternative. Potential impacts would occur from the degree to which management measures under this alternative might lead to a change the number of traps in the water or their geographic location, including their concentration in any one area, which could affect the amount of effort (harvesting) within the fishery. Potential physical impacts relate primarily to the impacts that the placement of lobster traps on the ocean bottom could have on habitat.

Under this alternative, little change in the amount of effort (i.e., traps in the water) is anticipated. The number of participants qualified would be allocated based on historical fishing practices and it is assumed that the number of traps fished would be approximately the same as shown for 2012 (Table 4.2). This alternative would also substantially reduce the amount of potential latent effort within the OCC fishery. This is evident in the difference between the number of traps allocated compared with the number of traps fished seen in Table 4.2 under each option: for Alternative 1-No Action, the difference exceeds 75,000 traps; for Alternative 3-Qualify Only, the difference is minor. As a result, NMFS believes in general that the indirect biological and physical impacts from the management measures proposed under this option, discussed more fully below, on lobster, protected species, by-catch fish and bait fish will negligible or minor.

Lobster

MINOR, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL AND PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

Relative to the status quo, Alternative 3-Qualify Only provides some but not all of the benefits of Alternative 2 in terms of defining total effort in an LCMA. Because permit holders must first qualify into the fishery, the number of participants is capped at historical levels and latent effort is thereby substantially reduced. Trap allocations are not similarly capped, however, (i.e., based on historical fishing effort), and hence the same reductions in fishing effort are not realized relative to Alternative 2. Under Alternative 3, it is more likely dual qualifiers would have different state and Federal trap allocations within the LCMA OCC.

Biological Impacts

Overall, the potential impacts on American Lobster resources are marginally more beneficial under this option to those described under Alternative 1-No Action. Under Alternative 3, Federal measures would limit the total number of vessels that may fish up to the Federal trap cap (800 traps) while Alternative 1 would not. Further, the number of traps fished under Alternative 3 may be lower than Alternative 1, since Alternative 1 continues to allow all Federal permit holders to fish up to 800 traps and allows all Federal permit holders open access to elect to fish in the OCC LCMA.

Physical Impacts

Similarly, the potential impacts on habitat and benthic fauna are marginally more beneficial under this option compared to Alternative 1–No Action, given the potential for a small decrease in the number of traps fished (described above). While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Frequent hauling in areas of dense vegetation, such as kelp beds and eelgrass, are more likely to result in some damage through rope entanglement or as traps are hauled up. However, even in areas of dense vegetation, the impacts are likely to be minor and of short duration. Since the substrate composition for the LCMA OCC is predominantly a sand-based or sand and gravel substrate, trap gear impacts on kelp and eelgrass vegetation are likely to be minimal.

Protected Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY-ONLY.

Potential impacts on protected resources are marginally more beneficial under this option compared to Alternative 1–No Action, given the possibility for a small decrease in the number of traps fished (described above), which would in turn reduce the number of vertical lines in the water that present a threat of entanglement for protected species. The number of vessels fishing and traps fished in the LCMA OCC under Alternative 3 may be lower than Alternative 1, since Alternative 1 continues to allow all Federal permit holders to fish up to 800 traps and allows all Federal permit holders open access to elect to fish in the LCMA OCC. Under Alternative 3, Federal measures would limit the total number of vessels that may fish up to the Federal trap cap (800 traps) while Alternative 1 would not.

The ISFMP-recommended Trap Haul-Out Provision may also provide minor positive benefits to protected species by requiring all lobster fishers who elect the LCMA OCC on their Federal lobster permit to remove their fixed gear, thereby reducing the threat of entanglement for protected species: "Fishermen shall be required to remove all lobster traps from waters of the OCC LCMA during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure" (See Appendix 4 - Addendum XIII — Section 4.1.6 Trap Haul-out Period).

By-Catch Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3 – QUALIFY- ONLY.

Overall, the potential impacts on by-catch species are likely to be marginally more beneficial under this alternative compared to Alternative 1 – the No Action Alternative, since the number of vessels fishing and traps fished in the LCMA OCC may be lower. Any reduction in traps fished would provide a proportionate and beneficial reduction in by-catch for the fishery, though this benefit would likely be small.

Bait Fish Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3 — QUALIFY-ONLY.

As with by-catch species, the potential impacts on bait fish species under Alternative 3 are likely to be marginally more beneficial when compared to Alternative 1–No Action because the number of vessels fishing and the number of traps fished in the LCMA OCC may be lower. Any reduction in traps fished would provide a proportionate and beneficial reduction in demand for bait fish for the fishery, though this benefit would likely be small relative to the total demand for bait fish in the U.S. lobster trap fishery.

4.3 LCMA 2 Alternatives

In broad terms, the overall effects of the limited access program alternatives in LCMA2 are similar to those described for the LCMA OCC above: better accounting of who is actually fishing within the management area and a trap allocation that will cap future fishing effort, both of which will set the stage for an ITT program (to be evaluated in Section 4.4, below).

In other ways, however, there are important differences that would occur under a limited access program in LCMA 2 compared with the LCMA OCC. First, among the most significant difference is the geographic representation by the fishers: whereas the LCMA OCC is predominantly (and, under its Alternatives 2 & 3, likely exclusively) a Massachusetts-based fishery (See Table 4.2), LCMA2 is truly multi-state, with Massachusetts and Rhode Island sharing strong positions in its geographic make-up. The regulatory complications that surround efforts to manage the lobster fishery in this multi-state setting thus become even more pronounced relative to what was seen in LCMA OCC. These complications are discussed more fully below.

Second, in addition to being geographically more diverse, LCMA 2 also has a much larger fishery, both in terms of numbers of participants and the number of traps fished, than the LCMA OCC. Its larger size means that proportionate changes to characteristics such as number of traps allocated under a limited access program will also be more pronounced than in the LCMA OCC; in other words, a 3% difference in traps allocated between the LCMA 2 alternatives (an already large fishery) may have greater impacts on, for example, biological resources, than a 3% difference in traps allocated between the LCMA OCC alternatives (already a relatively small fishery to begin with).

Keeping these characteristics in mind, the potential impacts of the limited access alternatives for LCMA 2 are evaluated below.

Table 4.3 - LCMA 2 - Comparison of # of Permits & Traps by Alternative

		Alternative 1 No Action (Status Quo) 2012		Alternative 2 Commission Alternative 2012		Alternative 3 Qualify Only 2012	
Vessel/Permit #s		**Elected**	**Purchased**	**Qualified**	**Purchased**	**Qualified**	**Purchased**
	MA	115	46[111]	62	42	62	42
	RI	136	91[112]	122	87	122	87
	CT	15	2	5	4[113]	5	4
	NY	26	8[114]	3	2	3	2
	NJ	23	1[115]	0	0	0	0
	Total	315	148	192	135	192	135
Allocation/# of Traps		**Allocated**	**Fished**	**Allocated**	**Fished**	**Allocated**	**Fished**
	MA	92,000	22,667	27,898	23,184	49,600	33,600
	RI	108,800	67,351	86,139	63,911	97,600	69,600
	CT	12,000	1,700	4,000	3,440	4,000	3,200
	NY	20,800	5,388	3,013	1,760	2,400	1,600
	NJ	18,100	800	0	0	0	0
	Total	251,700	97,906	121,050	92,295	153,600	108,000

[111] 42 of these 46 are the same qualifiers who purchased trap tags in MA in 2012. Of the remaining 4, 3 purchased EEZ only tags (and likely are not qualifiers) and 1 might not match up due to administrative differences due to permit transfers.
[112] 87 of the 91 are the same qualifiers who purchased tags from RI in 2012. Of the remaining 4, 2 purchased tags from RI, but moved to CT and are thus counted as part of the 4 number in the CT column. The other 2 were EEZ only (and have some history and might qualify).
[113] 2 of these 4 originally purchased tags from RI, but moved to CT (see above footnote), i.e., they were accounted for in different states in the state column but not in the Federal column.
[114] 2 of the 8 match up, the remainder are EEZ only.
[115] Not active during qualifying year. Not an LCMA 2 adjacent state, EEZ tags only.

Table 4.3 shows 1) the projected number of permit holders (either elected or qualified, depending on the alternative) versus the number of permit holders purchasing trap tags (as a proxy for those actually fishing) and 2) traps allocated versus traps fished under the three alternative scenarios analyzed for the LCMA 2. Table 4.3 includes 2012 trap tag and permit data and includes information provided by the states in 2013.

For Alternative 1–No Action (status quo), it is assumed that current conditions under the LCMA2 will continue, more or less, and that the most recent data (2012) provides the best projection for the number of permit holders that will *elect* to fish within this LCMA under this scenario. Trap tag data showing the number of permit holders buying trap tags (2012) is used as a proxy for the number of permit holders *actually fishing* (since, as stated previously, the fact that a permit holder has "elected" an LCMA does not mean they actually fished there). Under this alternative, the number of traps *allocated* was derived by multiplying the number of traps allowed under a Federal permit – 800 traps – by the number of those "electing" to fish. The number *"fished"* is based on trap tag data.

For both Alternative 2–Commission Alternative and Alternative 3–Qualify Only, the Commission-approved criteria was used to project the number of Federal permit holders that would *qualify* for an allocation of traps within this LCMA.[116] Under Alternative 2-Commission Alternative, *allocated* trap numbers were derived in accordance with Commission-approved criteria spelled out under Addenda VII and XII.

For Alternative 3-Qualify Only, the number of traps *allocated* was derived by multiplying the number of traps allowed under a Federal permit–800 traps–by the number of those Federal permit holders projected to qualify to fish in LCMA 2.

Based on the findings in Table 4.3, above, the following observations can be made:

- In shifting from the status quo (where any permit holder can elect to fish the LCMA) to an LCMA-specific limited access fishery within Federal waters of LCMA 2, "accounting" of what is taking place within the fishery becomes more accurate in two important ways: *first*, the number of permit holders actually fishing within LCMA 2 becomes more accurate (as evidenced by the smaller gap between "qualified" permit holders and those purchasing trap tags when compared to the gap between those permit holders "electing" to fish (but not necessarily fishing) and those purchasing trap tags under current Federal regulations); *second*, the number of traps actually being fished (i.e., effort) would also become more accurate, as the gap between the number of traps initially allocated to qualified fishers and those actually fished would become far more narrow than the gap between traps allocated to those "electing" to fish and traps actually fished under current regulations and Alternative 1 (Table 4.3).

- The number of traps allocated within Federal waters of the LCMA 2 shrinks significantly when shifting from the status quo to an LCMA-specific limited access program: by 52% and 39% for Alternatives 2 and 3, respectively.

- In addition to a reduction in allocated traps, the data indicate that the number of Federal vessels that would qualify under a limited access program also shrinks substantially—from 315 under Alternative 1 (status quo) to 192 under Alternatives 2 and 3. Unlike the LCMA OCC, where geographical characteristics and the expense and time required to transit to the LCMA tend to

[116] See Section 4.1-Data and Documentation, for a discussion of data sources used in this analysis.

limit participation, LCMA 2 has multiple state jurisdictions involved and nearly eight times the number of estimated qualifiers as the OCC LCMA.

- Under a limited access program, Massachusetts and Rhode Island will more clearly be the dominant players within LCMA 2. Though the data indicate that 23 Federal permit holders from New Jersey currently elect LCMA 2 on their Federal lobster permit (Table 4.3), a preliminary review of the landings history for these permit holders indicate that none of them landed lobster in a state adjacent to LCMA 2 (MA/RI/CT/NY), as specified in the ISFMP (see Appendix 2, Addendum VII, Section 4.2.1.1). As a result, these vessels would not likely qualify in LCMA 2 under a limited access program based on the Commission-approved criteria.

Keeping these basic findings in mind, the following discussion analyzes the potential regulatory, biological, economic, and social impacts of the three proposed alternatives for the LCMA 2.

4.3.1 Alternative 1-No Action

Regulatory Impacts

This section addresses potential regulatory impacts associated with Alternative 1-No Action for the LCMA 2. Potential regulatory impacts would be from the degree to which the proposed measures are compatible with the Commission-passed measures under Addendum XII, currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE-TO-MAJOR, ADVERSE, LONG-TERM, DIRECT REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under this alternative, no Federal limited access program would be enacted in LCMA 2. As such, Federal lobster management in this LCMA would remain as is and the following actions would continue:

1. Owners of any fishing vessel with a federal permit could designate and fish in the federal portion of the LCMA 2[117] under Federal regulations; and

2. Owners of any fishing vessel designating the LCMA 2 on their Federal permit could fish up to 800 traps under Federal regulations.

Compatibility with Commission-Approved Measures

Alternative 1-No Action would deviate from measures outlined in the Commission's ISFMP and associated state regulations in two significant ways.

1. States would follow the Commission-approved plan to cap effort in state waters based on fishing history while, in the Federal fishery, the option for the universe of 3,000+ Federal permit holders to elect the LCMA 2 on an annual basis, regardless of their fishing history, (each with an 800 trap allocation) would continue.

[117] Federal permit holders renew their Federal permits annually. When they do so, they can designate (i.e., choose) any or multiple LCMAs on that permit for the coming year (in those LCMAs with Federal limited entry programs – i.e., LCMA 3, 4 and 5 – the permit holder must have previously qualified for entry in order to choose such an LCMA). In other words, Federal permit holders start each fishing season with a blank slate for a Federal permit on which they can pick and choose the LCMA or LCMAs in which they are going to fish. Once they choose, however, they are bound by that designation for the remainder of the fishing year.

2. Under Alternative 1-No Action an ITT program in Federal waters would not occur because the necessary preceding steps—qualify and allocate—would not take place. As a result, the economic, biological, and social benefits of a unified Federal-state ITT program, describe in Section 4.4 below, would not occur.[118]

By definition, Alternative 1 rejects the implementation of compatible regulations and, in so doing, rejects efforts by the Commission to cap effort. Further, Alternative 1-No Action could be viewed by Commission states as a refutation of the cooperative principles upon which lobster management is based. While nothing in the Atlantic Coastal Act or ISFMP Charter obligates the Federal government to rote adherence to every aspect of the Commission's Lobster Plan (and there have been past occasions where NMFS rejected a Plan recommendation or added a measure that was not recommended), never has NMFS refused a core element of a Commission LCMA plan or failed to implement a whole addendum.[119] Alternative 1-No Action thus would likely frustrate Commission states that consider a Federal LCMA 2 limited access plan as being a necessary component to the effective implementation of their state LCMA 2 plan, including the Commission's response to the SNE stock recruitment failure in Addendum XVIII.

As a result of these differences between Federal and state programs, management, administrative and enforcement objectives would become more difficult to achieve, as described below:

Management Impacts

Under Alternative 1- No Action, the difficulties in managing a shared, but unaligned, state-Federal program for the American Lobster fishery will continue (see Section 3.1 for a discussion of these difficulties). These difficulties result in management impacts for the LCMA 2 fishery that are similar in nature to those described under the LMCA OCC No Action alternative, however, because this fishery has eight times as many potential qualifiers, hailing from at least four states, management issues become even more complicated under No Action.

For example, because it is a relatively large and geographically diverse fishery, participation in the LCMA 2 is very sensitive to changing regulatory conditions within the American Lobster fishery at large. For example, Federal permit data shows that the number of lobster fishers electing to fish in the LCMA 2 declined by 37% over the 12-year period from 2000-2012 (Table 3.6). While there could be many reasons for this overall decline, the most likely explanation is that as management measures in the various LCMAs evolved and diverged, declaring into multiple LCMAs became increasingly limiting because of the Most Restrictive Rule. For example, in 2000-2001, many fishers designated multiple, even all LCMAs on their permit because the LCMAs had almost identical management measures and thus, the Most Restrictive Rule was not limiting. But over time, as LCMA management diverged, many fishers found it increasingly difficult to fish under the most restrictive measures that may be different in each LCMA.[120] As such, many fishers who in the past declared multiple LCMAs on their permit for speculative or flexibility purposes, now only declare the LCMA in which they intend to fish. Under Alternative 1-No Action, because all 3,000+ Federal permit holders for American Lobster would continue to have the regulatory freedom to elect LCMA 2 on their Federal permit applications, this greater sensitivity to changing regulatory conditions within the American Lobster fishery overall will continue.

[118] It is possible that an ITT program at the state level could proceed in the absence of a complementary Federal program. This is discussed in more detail in Section 4.4.

[119] For example, NMFS didn't implement the recommended vessel upgrade restrictions of Amendment 3 and added OCC max size and v-notch restrictions despite those restrictions not being part of the Commission's OCC plan.

[120] For example, by the mid-2,000's LCMA 1 had a maximum gauge size, but the smallest (most liberal) minimum gauge size. LCMA 3 had a more restrictive minimum gauge size, but no maximum gauge size. Accordingly, a person declaring into both LCMA 1 and 3 would have to abide by LCMA 3's more restrictive minimum and LCMA's more restrictive maximum.

Analytic tools to quantitatively predict the impacts from this inability to align the state and Federal programs are unavailable; however, based on "best professional judgment," we believe that the potential impacts to management of the American Lobster fishery can be qualitatively described, as follows:

- Because under No Action, participation in the Federal fishery remains broadly defined to a universe of 3,000+ permit holders, it will remain difficult to measure, and thus manage, fishing effort with this fishery. Under Alternative 1, anywhere from 315 (2012 data) to over 3,000 Federal permits (based on total Federal permits) could be fishing up to 800 traps per permit –meaning that managers would have to assume that anywhere from 252,000 traps (315 permits x 800 traps) to 2,400,000 traps (3,000 permits x 800 traps) could be fished in any given year. While it is unlikely that all 3,000+ permit holders would designate the LCMA 2 on their Federal permit, managers face the difficult challenge under No Action of understanding the level of real participation in the fishery and this makes it difficult to respond with any precision to problems facing the resource.

- Because under Alternative 1-No Action, any Federal permit holder could fish up to 800 traps in Federal waters of the OCC, effort control within the fishery will largely depend, by default, on the effective state enforcement of the Most Restrictive Rule. It is unclear whether and how affected states would enforce the Most Restrictive Rule, especially in situations where an individual receives a zero allocation on the state permit, or has been altogether disqualified under a state's OCC limited access program.

Administrative Impacts

Similar to the impacts for the Outer Cape LCMA described in Section 4.2, under Alternative 1-No Action, the administrative and enforcement burden to affected state and Federal jurisdictions would potentially increase as circumstances surrounding the disconnects between state/Federal management of the dual permit holder continue unaddressed.

A dual permit holder is a fisher who possesses both a state and Federal lobster permit. Administratively, NMFS and the states of Massachusetts, Rhode Island, and Connecticut currently operate under a joint State-Federal Trap Tag Memorandum of Understanding (MOU), whereby these states are authorized, under normal circumstances, to issue trap tags to all dual permit holders residing in those states. Under Alternative 1, No Action, it would be possible for a dual permit holder to not be qualified by one of these states, but still request that the LCMA 2 be included on the state-issued coastal/EEZ trap tag because under the current Federal program anyone can elect and receive an allocation of up to 800 traps. It is also possible that the states involved may refuse to issue trap tags with the LCMA 2 designation.[121]

The dual permit holder thus could be legally prohibited by Massachusetts, Rhode Island, or Connecticut from fishing in the LCMA 2 under state law and at the same time legally request his Federal trap tags from NMFS directly. If NMFS does authorize the issuance of EEZ trap tags as described in this scenario, as a policy matter, NMFS has notified the appropriate LCMA 2 state regulatory agency of the Federal action. In situations like this, some states have regulatory authority to notify the Federal permit holder not to acquire or fish with the NMFS authorized tags, subject to loss of state fishing and/or landing privileges. It is unclear, however, whether the potentially affected state jurisdictions have evaluated their state regulations to determine if the legal authority exists to be able to effectively administer and monitor tag issuance to completely prevent non-qualified vessels to set traps in LCMA 2.

[121] The ISFMP, in Section 4.5 of Addendum XII, clearly supports this position and includes, as a compliance requirement, that "States will enact rules making it unlawful for any permit holder to order, possess or fish with trap tags designated for an LCMA not specifically authorized by a state in compliance with Plan amendments or addenda."

Enforcement Impacts

Based on a potential need to address the receipt of federally authorized LCMA 2 EEZ tags by a state resident contrary to existing state law and Addendum XII, administration and enforcement of the LCMA 2 lobster fishery would likely become more onerous for state marine fisheries and law enforcement and Federal management and law enforcement staff under Alternative 1-No Action. The greater the level of disconnect between Federal and state management programs for the American Lobster fishery, the greater the burden on Federal and state enforcement programs, since the need for dockside and on-the-water confirmations of where and how many traps have been set by whom will proportionately increase. Clearly, the establishment of a central trap database, as discussed in greater detail in Section 4.2-Administrative Impacts, would be critical to mitigate confusion and ensure all regulatory agencies have up-to-date and accurate information on state and Federal participants authorized and/or electing to fish in LCMA 2.

Biological and Physical Impacts

The following section discusses the potential indirect biological and physical impacts to lobster, protected species, by-catch fish and bait fish from the LCMA 2-No Action alternative. Potential impacts would occur from the degree to which management measures under the status quo might lead to a change the number of traps in the water or their geographic location, including their concentration in any one area, which could affect the amount of effort (harvesting) within the fishery. Potential physical impacts relate primarily to the impacts that the placement of lobster traps on the ocean bottom could have on habitat.

Under No Action, all 3,000+ Federal permit holders could elect the LCMA 2 and would be authorized to fish up to 800 traps each in Federal waters. Nonetheless, little change in terms of actual traps fished under this alternative is anticipated. In fact, as indicated in Table 4.3, above, though nearly 252,000 traps could be authorized under the status quo, approximately 98,000 were actually fished in 2012. NMFS does not anticipate a significant change in the amount of effort under No Action from what was identified for 2012. Given this, NMFS believes that the potential biological and physical impacts on lobster, protected species, by-catch fish and bait fish, discussed more fully below, will be negligible or minor.

Lobster

Biological Impacts

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

As stated above, the LCMA 2 is a large fishery with multi-state jurisdictions. The potential inconsistencies in trap tag administration (discussed under *Administrative Impacts)* have the potential to increase the number of traps set in Federal waters of the LCMA 2 to some small, but unquantifiable degree.

Any increase in effort within the American Lobster fishery will add population pressure to lobster stocks. The biological stock area where this would be of most concern is Southern New England (SNE), given the stock's poor condition (see Section 1.1 Status of the American Lobster Stocks and APPENDIX 16 Recruitment Failure in the SNE Lobster Fishery). Since the LCMA 2 is entirely within the SNE stock complex, any potential for increased effort is a concern. Under Alternative 1-No Action, anywhere from 315 (based upon 2012 data) to over 3,000 Federal permit holders (based upon total Federal permits) could be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 252,000 to 2,400,000 traps could be fished in any given year.

Physical Impacts

MINOR, ADVERSE, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long-term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Impacts on the sea floor vary based on the composition of the substrate that the traps come to rest on. Frequent hauling in areas of dense vegetation are more likely to result in some damage, however, the impacts are likely to be minor and of short duration. The scientific evaluation of lobster and traps on attached epibenthic megafauna (sponges, soft corals, tube worms) showed no negative effect on the abundance of attached megafauna (Eno et al., 2001). When traps were dragged over the bottom they left tracks, but commercial trap gear appeared to have no negative effect on the abundance of attached benthic epifauna.

Protected Species

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

As discussed in Section 3.5, several endangered species are susceptible to entanglement in lobster fishing gear. Many protected species exhibit feeding behavior that increases their susceptibility to entanglements. The potential inconsistencies in trap tag administration (discussed above) have the potential to increase the number of traps set in Federal waters of the LCMA 2 to some small, but unquantifiable degree and this could, in turn, increase the exposure of protected species to additional vertical lines in the water.

As noted previously, over 95 percent of lobsters are harvested from lobster traps. Lobster traps may be set singly, each having its own surface line and buoy, or traps may be fished in trawls, normally of two to six traps per trawl in inshore areas, where multiple traps are linked together by groundlines, with surface lines and buoys or high flyers usually at the first and last traps of the trap trawl (Sainsbury, 1971).

Though nearly 252,000 traps could be authorized under the status quo, approximately 98,000 were actually fished in 2012. While the difference between the number of traps authorized and the number of traps actually fished does represent the amount of latent effort within the fishery—effort that, were it activated, would represent additional vertical lines in the water—NMFS does not anticipate that the level of effort under No Action will increase substantially beyond current practice. Though it is acknowledged that any additional trap gear set in the LCMA 2 does increase the risk of entanglement for protected species, NMFS believes that any increase in effort is likely to be small and associated impacts on this resource would be minor-to-negligible.

By-Catch Fish

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1-NO ACTION.

The term “bycatch” refers to the unintentional landing and discarding of animals not specifically targeted by fishing vessels. While, in general, the traps used in commercial lobster fisheries are among the more

selective types of fishing gear, the most common types of by-catch in lobster traps are juvenile lobsters and crabs. Even though lobster by-catch landed in traps are likely to be discarded with lower mortality rates than those landed with other gear types such as trawls and dredges (Davis 2002), the SNE lobster stock is a stock of concern based on the recently released 2009 American lobster stock assessment (reference). Even if discard mortality rates (the percentage of discarded animals that die) associated with animals caught in traps are low, there is likely to be a small be unquantifiable increase in by-catch mortality of lobsters if fishing effort does increase in the Federal waters of LCMA 2. Nonetheless, because the potential increase in the amount of trap gear fished in LCMA 2 is small, NMFS believes that the indirect impact of such an increase on by-catch species will be minor.

Bait Fish

MINOR, ADVERSE, LONG-TERM, INDIRECT, IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED AS A RESULT OF THE SMALL (UNQUANTIFIABLE) INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 1- NO-ACTION.

Bait is used in lobster traps to attract lobsters into the trap, and is an important component of the lobster fishery. It has been estimated that 50-60,000 tons of bait are used in the U.S. lobster fishery annually. The species used as bait in lobster traps varies by geographic location, and price is a major factor when selecting lobster bait. Often, lobstermen have specific preferences for their preferred bait, but Atlantic herring is the major species used by volume. In Maine, herring comprises nearly 90% of the bait used, with fish such as menhaden, alewives, and redfish making up the remaining 10%.

In addition to herring, species such as skates are frequently used in lobster traps as bait, especially south of Cape Cod in LCMA 2, and in the offshore lobster fishery. Landings of skate, for human consumption and bait needs, have remained relatively steady in recent years, averaging approximately 15,000 tons a year since 2001. Lobstermen also make use of fish frames, the body and skeleton that remain after the edible portion of meat is removed. The type of fish frames used as bait varies considerably by season and geographic location, but generally includes redfish, flatfish, and other groundfish species. Generally, fresh fish is the preferred bait over frozen fish, but when supplies of fresh bait are low, frozen fish, mainly frozen herring, is a frequent substitute for fresh bait.

As noted previously, it is possible under Alternative 1-No Action that the number of traps fished in LCMA 2 may increase by some small but unquantifiable amount. Under this option, anywhere from 315 (based upon 2012 data) to over 3,000 Federal permit holders (based upon total Federal permits) could be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 252,000 to 2,400,000 traps could be fished in any given year.

If trap fishing effort does increase, there would be a proportionate increase in the use of lobster bait. In LCMA 2 a variety of bait is used, including herring, skates, and fish frames. However, it is NMFS opinion that, given the size of the U.S. lobster bait market (estimated at 50-60,000 tons), any potential adverse impacts associated with increased bait demand under Alternative 1 would be minor and of short duration.

4.3.2 Alternative 2 – Commission Alternative (Preferred Alternative)

Under this alternative, four significant impacts to the Federal American Lobster fishery would occur:

1. The number of Federal permit holders would be capped in accordance with qualification criteria approved by the Commission under Addenda VII and XII. To fish within LCMA 2,

permit holders would have to first qualify for an allocation, eliminating the practice of simply "electing," or "checking off" the LCMA on their annual permit applications;

2. The total number of traps allocated would be capped at a level based on the historical fishing practices of those fishers who are determined to qualify for the LCMA 2. This trap cap will establish a new limit for fishing effort within this LCMA.
3. Fisheries management information in the LCMA 2 would become more accurate. More accurate information on the number of participants and trap fishing effort will result from accurately accounting for who is fishing in the LCMA OCC (through step 1, "qualification") and how many traps are being used (through step 2, "allocation").
4. The development of a joint state-Federal Individual Transferable Trap (ITT) Program in the LCMA 2 becomes possible. Completion of the qualification and trap allocation steps, and the resultant ability to accurately identify participants and their individual trap allocations, creates a baseline of information, without which an ITT program cannot occur.

Regulatory Impacts

This section addresses potential regulatory impacts associated with Alternative 2-Commission Alternative. Potential regulatory impacts would be from the degree to which the proposed measures are compatible with the Commission-passed measures under Addendum XII, currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MAJOR, BENEFICIAL, LONG-TERM, DIRECT, REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Compatibility with Commission-Approved Measures

On balance, NMFS believes Alternative 2 would implement management measures for the American Lobster fishery that are substantially identical to those already passed by the Commission and, as such, would be compatible with Commission-approved measures.[122] As a result, inconsistencies between state-Federal lobster management (see Section 3.1), while perhaps not entirely eliminated, would become more manageable due, in part, to the more accurate accounting of fishing effort within the LCMA under Alternative 2.

Management Impacts

In terms of management of the American Lobster fishery, major, long-term, beneficial, direct impacts are expected under Alternative 2. Under this alternative, the ambiguity between what is true "on paper" versus what is actually occurring (the "dual reality" discussed in Section 3.3.1) is substantially reduced. As a result, managers will have a better understanding of who is fishing and how many traps are being used and this will allow them to better manage the overall level of effort in the fishery along with the overall protection of the resource.

[122] Some inconsistencies may continue to occur that could potentially cause disconnects on a limited permit holder level – e.g., such as where states and/or NMFS have interpreted a provision of Addendum VII similarly, but not identically – but NMFS believes that a Coordinating Committee as referenced in the ISFMP, as well as applicable procedures specified in Addendum XII will likely keep these disconnects at an acceptable and manageable level for the majority of Federal permit holders.

Further, the potential disconnects between the state and Federal management of dual permit holders will likewise be substantially reduced. Because state and Federal identification of qualified fishers and allocated traps will "match up," the potential for a dual permit holder to be legally prohibited from fishing in LCMA2 under state law while technically still being legally authorized to fish in Federal waters of LCMA2 will be minimized. Further, use of Clerical, Hardship and Director's appeals will allow NMFS to better align its qualification and allocation decisions with state decisions, thus further reducing the potential for incongruent permit results for dual permit holders. NMFS specifically asked in its DEIS for commentary on use of appeals and the response from the public was uniformly supportive (see response to Comment No. 18 and 19–Appendix 7). Effective coordination and consistent measures would prevent the issuance of trap tags to Federal lobster vessels that did not qualify under a Federal qualification/allocation process based on the criteria specified in the ISFMP.

Similarly, Alternative 2 will also substantially reduce the "inflated" numbers of allocated pots that occurs under Alternative 1-No Action. As shown in Table 4.3, Under Alternative 1, anywhere from 252,000 traps (315 permits x 800 traps) to 2,400,000 traps (3,000 permits x 800 traps) could be fished in any given year. Under Alternative 2, that number drops to approximately 121,000 traps. NMFS believes that the ability to more accurately account for fishing effort in the LCMA 2 is of particular concern, given its location within the SNE biological stock unit are, where concern over the status lobster resource is high (see Sections 1.1, 3.4). More accurate information might allow managers to more easily and precisely respond to threats to the resource in the SNE area.

Enforcement Impacts

Alternative 2 is expected to have beneficial impacts in terms of program enforcement, due simply to the fact that most of the regulatory disconnects discussed above in 4.1 will be significantly reduced or largely eliminated for the majority of Federal permit holders. In particular, because the state-Federal management of dual permit holders and their allocations will no longer be poorly aligned, the need for more state and Federal on-the-water enforcement to confirm the number of traps being placed in LCMA 2 would be reduced under Alternative 2 compared to Alternative 1. Under Alternative 2, Table 4.3 indicates 192 Federal permit holders would qualify in LCMA 2, compared with from 315 up to 3,000+ vessels that would be authorized to select LCMA 2 on an annual basis under Alternative 1. In addition to a more manageable number of qualified participants, NMFS's assumption that a central multi-jurisdictional trap database would also be available, would further ensure that state and Federal managers, and law enforcement agents, would be able to easily verify qualification and trap allocation information, further reducing the administrative aspects of enforcement coordination in this geographically more diverse LCMA.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom.

Fishing effort under Alternative 2-Commission Alternative is expected to decrease to a small degree, largely as a result reductions in latent effort, and this will result in minor biological benefits to lobster, protected species, bait fish and by-catch species, discussed below.

Lobster

Biological Impacts

MINOR, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

For lobsters, the number of traps fished under this option would be capped at historical levels and the amount of latent effort would be reduced relative to the status quo. As a result, some beneficial biological impacts for the SNE lobster stock would be expected—important given that the most recent lobster stock assessment for this area showed decreased abundance and recruitment as well as continued high fishing mortality (See Section 1.1.1).

Relative to the status quo, Alternative 2 would result in a significant decrease in both the number of permit holders qualifying for an allocation and the number of total traps allocated (39% and 52%, respectively) for the LCMA 2 lobster fishery (Table 4.3). Although the number of traps *actually* fished has varied little over the recent time period, the 123 permit holders that would not qualify under Alternative 2's limited access program represents the amount of latent effort that exists under current regulatory practice. It is acknowledged that if these permit holders fished for lobsters, the states in theory would apply the Most Restrictive Rule and some of this potential for increased effort would be avoided. Nonetheless, NMFS believes that a coordinated state-Federal program under Alternative 2 would align the accounting of "true" fishing effort across state-Federal jurisdictions and allow Federal resource managers to more effectively reduce or even eliminate this potential for increased effort.

Physical Impacts

MINOR, BENEFICIAL, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

Under Alternative 2, the total number of authorized traps would decrease from 252,000 to 121,050 traps. Based on this, minor, long-term, beneficial, indirect impacts to lobster habitat would be expected.

While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long-term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges.

Impacts on the sea floor vary based on the composition of the substrate that the traps come to rest on. Frequent hauling in areas of dense vegetation are more likely to result in some damage, however, the impacts are likely to be minor and of short duration. The scientific evaluation of lobster and traps on attached epibenthic megafauna (sponges, soft corals, tube worms) showed no negative effect on the abundance of attached megafauna (Eno et al., 2001). When traps were dragged over the bottom they left tracks, but commercial trap gear appeared to have no negative effect on the abundance of attached benthic epifauna.

Protected Species

MINOR, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED ALTERNATIVE 2-COMMISSION ALTERNATIVE.

As stated above, because the number of traps fished under Alternative 2 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to protected species will occur as a result of the potential for fewer vertical lines in the water from lobster trap gear.

Further, improved management and enforcement under a more coordinated Federal-state program for lobster will also contribute to stronger protection for protected species. Because inconsistencies in program administration (described above) will be reduced under Alternative 2, Federal resource managers will be able to more effectively restrict trap fishing access to those vessels qualified to fish in the LCMA 2 and better coordinate the multi-jurisdictional enforcement requirements that are needed, both dockside and at-sea, to administer the lobster fishery management program.

As noted previously, over 95% of lobsters are harvested from lobster traps. Lobster traps may be set singly, each having its own surface line and buoy, or traps may be fished in trawls, normally of two to six traps per trawl in inshore areas, where multiple traps are linked together by groundlines, with surface lines and buoys or high flyers usually at the first and last traps of the trap trawl (Sainsbury, 1971). Several endangered species are susceptible to entanglement in fishing gear. Many protected species exhibit feeding behavior that increases their susceptibility to entanglements. While foraging, all body parts are at risk of entanglement. (see Section 3.5-Protected Resources for further details).

As shown in Table 4.3, under Alternative 2, the number of potential traps fished shrinks from 252,000 under the status quo to 121,000. In fact, since current Federal regulations allow any of the 3,000+ permit holders to elect the LCMA 2 and receive an 800 trap allocation, the amount of trap reduction under this alternative is potentially far greater (121,000 versus 2.4 million traps). While NMFS acknowledges that even under Alternative 1 the likelihood of an increase in trap effort in LCMA 2 would be minor, NMFS believes a coordinated set of state-Federal measures would facilitate more effective administrative and enforcement oversight than under Alternative 1.

It is NMFS opinion that trap fishing effort will be constrained and the risk of entanglement of endangered species is likely to be reduced under draft Alternative 2 by some small but unquantifiable degree due to implementation of a cooperative state-Federal LCMA 2-specific limited access program. Therefore, minor, long-term, beneficial, indirect biological impacts to protected species would be expected Alternative 2-Commission Alternative.

By-Catch Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

As stated above, because the number of traps fished under Alternative 2 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to by-catch species will occur as result of minor potential reductions in effort (see Protected Resources discussion, above).

As noted previously, lobster and crabs are the primary by-catch species in lobster trap gear. While by-catch mortality in trap gear is acknowledged to be low, especially in comparison with mobile gear fisheries, if trap effort is constrained there is likely to be some minor, but unquantifiable level of benefit to the SNE lobster resource. On balance, therefore, NMFS believes that complementary state-Federal regulations would more effectively cap and prevent any potential increase in trap fishing effort and this would result in minor, long-term, beneficial, indirect impacts to by-catch species.

Bait Fish Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

As stated above, because the number of traps fished under Alternative 2 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to bait fish species will occur as result of minor potential reductions in effort (see Protected Resources discussion, above).

Further, improved management and enforcement under a more coordinated Federal-state program for lobster will also contribute to capping demand for bait fish as a result. Because inconsistencies in program administration (described above) will be reduced under Alternative 2, Federal resource managers will be able to more effectively restrict trap fishing access to those vessels qualified to fish in the LCMA 2 and better coordinate the multi-jurisdictional enforcement requirements that are needed, both dockside and at-sea, to administer the lobster fishery management program.

4.3.3 Alternative 3 – Qualify Only

Under Alternative 3-Qualify Only, the following significant impacts to the Federal American Lobster fishery in LCMA2 would occur:

1. The number of Federal permit holders would be capped in accordance with qualification criteria approved by the Commission under Addendum XII. To fish within LCMA 2, permit holders would have to first qualify for an allocation, eliminating the practice of simply "electing," or "checking off" the LCMA on their annual permit applications;
2. Accounting for who is fishing in LCMA 2 would become more accurate as a result of the qualification process (i.e., step 1). A more accurate accounting of the number of traps being fished in LCMA 2 will not occur under this option, however, because the allocation criteria approved by the Commission under Addendum XII will not be applied and since qualifying vessels will not be capped at their historical trap levels, the potential for increased effort due to activation of latent traps is possible.

Regulatory Impacts

This section addresses potential regulatory impacts associated with Alternative 3-Qualify Only. Potential regulatory impacts would be from the degree to which the proposed measures are compatible with the Commission-passed measures under Addendum XII, currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

ALTERNATIVE 3–QUALIFY-ONLY HAS BOTH MINOR, BENEFICIAL, LONG-TERM, DIRECT AND MODERATE, ADVERSE, LONG-TERM DIRECT REGULATORY IMPACTS.

Alternative 3 is meant to address the potential dilemma faced by NMFS of how to effectively implement measures that will complement state actions establishing a limited access program in LCMA 2, when those states apply the ISFMP criteria that determine trap allocations to qualified fishers inconsistently. To address this, Alternative 3 considers the benefits of maintaining the current Federal uniform allocation of 800 traps in LCMA 2. As such, this option offers a compromise between absolute consistency with the

Commission-approved limited access program and the realization that consistency in all its aspects may not be possible.

Compatibility with Commission-Approved Measures

In terms of qualifying fishers for an allocation within LCMA2, Alternative 3 would implement qualification measures for the American Lobster fishery that that are substantially identical to those already passed by the Commission and, as such, would be compatible with Commission-approved measures. While some inconsistencies may continue that could potentially cause disconnects on a limited permit holder level–e.g., such where states and/or NMFS have interpreted a provision of Addendum VII, that defined the LCMA 2 limited entry program, similarly, but not identically – NMFS believes that Addendum VII's Coordinating Committee[123], as well as the advent of Addendum XII will likely keep these disconnects at an acceptable and manageable level. Further, because this alternative seeks only to align state/Federal qualification decisions (unlike the Commission alternative above that seeks to align both the qualification and allocation decisions), the potential for disparate state/Federal decisions is lessened.

With regard to trap allocations, however, major differences exist between the potential number of traps fished under the Qualify-Only alternative versus the potential number of traps under Commission-approved measures that would be implemented under state lobster fishery management programs—153,600 versus 121,050, respectively (Table 4.3). This difference in the allocation of traps will allow some of the potential disconnects described under No Action to remain (though to a lesser extent), particularly with regard to dual permit holders who may receive a trap allocation for their state LCMA 2 permit that is lower than what would be authorized for under the Federal permit. Again, NMFS believes that effective state administration of tag issuance under the Most Restrictive Rule will help mitigate the adverse effects of these inconsistencies and help guide permit holders. It is not known, however, how effectively the states involved would enforce the more restrictive trap limits.

Management Impacts

Similar to the No Action alternative, because Alternative 3 does not align with the states allocation process, this program approach may be viewed as complicating future lobster fishery management. When trap allocations between state and Federal programs do not line up with each other, it is both difficult for resource managers to track and coordinate fishing effort and confusing for the permit holders who are being handed one set of requirements by the states and a different set of requirements by NMFS. For the LCMA 2, within which lies the SNE lobster stock area, the 32,550 trap difference between allocations under Alternative 3 and No Action is a concern: the states would manage this area under Commission-approved measures that would allocated approximately 121,000 traps for the LCMA 2, while the NMFS would manage this area under a separate program for trap allocation that would allow up to 153,600 traps. Application by the states of the Most Restrictive Rule may help mitigate the adverse effects of these inconsistencies and help guide permit holders, but it is unknown how effectively the states involved will enforce the more restrictive trap limits.

Administrative Impacts

The administrative impacts of Alternative 3 are similar to Alternative 1. The trap tag allocation differences between this option and what would be authorized under state programs would result in the

[123] The role of the Coordinating Committee is to "…facilitate communication and coordination, which is expected to result in more consistent decisions amongst the decision making entities." Section 4.1.1.1, Addendum VII (November 2005).

need for greater coordination among the regulatory agencies to verify compliance across jurisdictions and as well as with any lower trap limits required under the Most Restrictive Rule.

It is NMFS's opinion that the establishment of a central trap database, as discussed in greater detail in Section 4.1-Database Issues, would be critical to mitigate confusion and ensure all regulatory agencies have up to date and accurate information on state and Federal participants authorized and/or electing to fish in LCMA 2.

Enforcement Impacts

Under Alternative 3, the enforcement burdens of an unaligned state-Federal management program for American lobster in the LCMA 2 will be substantially reduced, but not eliminated. Since trap allocations will remain unaligned, as discussed above, the need for more state and Federal on-the-water enforcement to confirm the number of traps being placed in LCMA 2 would remain under this option. More specifically, under this option, 192 Federal permit holders would each qualify for an 800 trap allocation in the LCMA 2, while under Alternative 1-No Action, anywhere from 315 to 3,000+ could fish up to 800 traps each. This 32,550 trap allocation difference between the 315 status quo permit holders and the 192 Alternative 3 permit holders would require additional enforcement coordination by all affected jurisdictions in order to ensure that vessels did not exceed the more restrictive trap limit authorized under the state program. Additionally, if vessels with a lower state trap allocation subsequently petition NMFS for their full complement of 800 trap tags, increased enforcement efforts would be necessary to ensure vessels are not exceeding the more restrictive trap limit required under the Most Restrictive Rule.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom.

Compared to Alternative 1, No Action, fishing effort under Alternative 3-Qualify Only is expected to decrease to a small degree, largely as a result reductions in latent effort, and this will result in minor biological benefits to lobster, protected species, bait fish and by-catch species, discussed below.

As previously stated, when evaluating the potential impacts of the proposed management changes to the Federal American Lobster fishery on biological and physical resources, the focus of the analysis is fundamentally on the change in the number of traps being fished (though ultimately changes in the number of participants can also cause impacts, discussed further below). In shifting from the status quo (where any permit holder can elect to fish the area) to an LCMA 2-specific limited-access trap fishery under Alternative 3-Qualify Only, a significant decrease in the number of permit holders qualifying for an allocation and the number of total traps allocated would occur (39% for both). Since the participants are qualified and traps are allocated based on historical effort, little real change is expected under this option in terms of additional traps being fished relative to the status quo. Nonetheless, it is important to recognize that under Alternative 3 there will be up to a 32,550-trap difference (approximate) between the number of traps allocated and the number of traps fished (Table 4.3) and this difference would represent potential latent effort within the fishery. Because this amount of latent effort is substantially less than what exists under the status quo, NMFS believes that Alternative 3 would result in minor benefits to the resources discussed below.

Lobster

Biological Impacts

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT *AND* MINOR ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

Overall, the potential impacts on American Lobster resources are marginally more beneficial under this option relative to Alternative 1-No Action. The number of traps fished under Alternative 3 would be lower than Alternative 1, since Alternative 1 continues to allow all Federal permit holders to fish up to 800 traps and allows all Federal permit holders open access to elect to fish in the OCC LCMA. Under Alternative 3, Federal measures would limit the total number of vessels that may fish up to the Federal trap cap (800 traps) while Alternative 1 would not.

While NMFS does not believe that there is the same possibility under this option for increased fishing effort as there is under Alternative 1 (albeit small there, as well), there is the trap difference (Table 4.3) between the number of traps allocated versus the number fished (based on trap tags purchased) noted earlier in this section, and this represents potential latent effort that could potentially be activated within the fishery should this option be chosen. As has been noted previously, any potential increase in mortality on the SNE stock is a concern, given that the most recent lobster stock assessment for this area showed decreased abundance and recruitment as well as continued high fishing mortality (see Section 1.1.1).

Physical Impacts

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT *AND* MINOR ADVERSE, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

As with biological impacts discussed above, potential impacts on habitat and benthic fauna are expected to be marginally more beneficial under this option compared to Alternative 1–No Action due to the reduction in latent effort relative to the No Action alternative. The number of traps fished under Alternative 3 would be lower than Alternative 1, since Alternative 1 continues to allow all Federal permit holders to fish up to 800 traps and allows all Federal permit holders open access to elect to fish in the OCC LCMA. Under Alternative 3, Federal measures would limit the total number of vessels that may fish up to the Federal trap cap (800 traps) while Alternative 1 would not. Nonetheless, it is important to note that under Alternative 3 there would be up to a 32,550-trap difference (approximate) between the number of traps allocated and the number of traps fished and that this difference would represent potential latent effort within the fishery. Should that latent effort be activated, the additional traps would have minor adverse effects on habitat resources.

While the likelihood is thus considered small, NMFS acknowledges the possibility of some small but unquantifiable increase in trap fishing effort under Alternative 3. Available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long-term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Frequent hauling in areas of dense vegetation, such as kelp beds and eelgrass, are more likely to result in some damage through rope entanglement or as traps are hauled up. However, even in areas of dense vegetation, the impacts are likely to be minor and of short duration.

Protected Species

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

As stated above, because the number of permit holders under Alternative 3 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to protected species will occur as a result of the potential for fewer vertical lines in the water from lobster trap gear.

As noted previously, over 95% of lobsters are harvested from lobster traps. Lobster traps may be set singly, each having its own surface line and buoy, or traps may be fished in trawls, normally of two to six traps per trawl in inshore areas, where multiple traps are linked together by groundlines, with surface lines and buoys or high flyers usually at the first and last traps of the trap trawl (Sainsbury, 1971). Several endangered species are susceptible to entanglement in fishing gear. Many protected species exhibit feeding behavior that increases their susceptibility to entanglements. While foraging, all body parts are at risk of entanglement. (see Section 3.5-Protected Resources for further details).

As shown in Table 4.3, under Alternative 3, the number of potential traps fished shrinks from 252,000 under the status quo to about 154,000. In fact, since current Federal regulations allow any of the 3,000+ permit holders to elect the LCMA 2 and receive an 800 trap allocation, the amount of trap reduction under this alternative is potentially far greater (154,000 versus 2.4 million traps). By capping the number of participants and reducing latent effort in this way, NMFS believes that this alternative would have minor, long-term, beneficial, indirect biological impacts on protected species.

By-Catch Species

NEGLIGIBLE–TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

As stated above, because the number of traps fished under Alternative 3 would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that some beneficial biological impacts to by-catch species will occur as result of minor potential reductions in effort. Nonetheless, it is important to note that under Alternative 3 there would be up to a 46,000-trap difference (approximate) between the number of traps allocated and the number of traps fished and that this difference would represent potential latent effort within the fishery. Should that latent effort be activated, the additional traps would result in a minor adverse effect on by-catch fish.

Also, as noted previously, lobster and crabs are the primary by-catch species in lobster trap gear. While by-catch mortality in trap gear is acknowledged to be low, especially in comparison with mobile gear fisheries, if trap effort is constrained there is likely to be some minor, but unquantifiable level of benefit to the SNE lobster resource.

Bait Fish Species

NEGLIGIBLE-TO-MINOR, BENEFICAL, LONG-TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

Impacts on bait fish species under Alternative 3 are largely analogous to those identified for by-catch species above. Because the number of traps fished under this would be capped at historical levels and the amount of latent effort within the fishery would be reduced relative to the status quo, NMFS believes that

some beneficial biological impacts to bait fish species will occur as result of minor potential reductions in effort. Nonetheless, it is important to note that under Alternative 3 there would be up to a 46,000-trap difference (approximate) between the number of traps allocated and the number of traps fished and that this difference would represent potential latent effort within the fishery. In the unlikely event trap fishing effort does increase in the LCMA 2 under this alternative, a minor increase in the demand for bait fish species would be expected. Based on the total demand for bait fish in the U.S. lobster trap fishery, NMFS believes that any impact on bait demand under Alternative 3 would be negligible.

4.4 Inter-Transferable Trap Alternatives

The establishment of an Individual Transferable Trap (ITT) program is the last step in a three-step process that necessarily begins with qualifying permit holders into an LCMA (step 1), followed by allocating the number of traps that a qualified permit holder can fish within that LCMA (step 2). Once these two steps have been completed, an ITT program would allow lobster fishers to sell, or "transfer," partial trap allocations to one another. Under the current Federal program, lobster fishers who want to sell trap fishing rights assigned to a lobster permit must sell their permit along with its entire trap allocation (and thus get out of the fishery completely). By allowing participants to buy and sell partial trap allocations separate from the Federal lobster permit, an ITT program would establish fishing privileges for U.S. lobster fishers heretofore unseen in Federal lobster management.

To date, a number of ITT programs have been approved through the Commission process within certain LCMAs, beginning with the LCMA OCC in 2002, followed with the LCMA 3 in 2003 and, finally, with the LCMA 2 in 2005 (see also Section 2.0). For any ITT program, a central objective is to provide permit holders with opportunities to enhance their own business efficiency or respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery altogether. Because the total number of traps that can be fished within an LCMA will have already been determined (through steps 1 and 2, above), ITT programs are not about effort control or about affecting the number of lobsters in the water (although measures to reduce effort are incorporated into the ITT program to a limited degree, discussed below). Rather, ITT programs are about affecting the behavior of the people who fish for lobster; in particular, they are about giving the people who fish for lobster economic options (through opportunities to buy and sell partial trap allocations) that are not available to them under existing Federal lobster management. Ultimately, therefore, the primary purpose of an ITT program is to improve the overall economic efficiency of the lobster industry[124] (ASMFC 2002b).

The following discussion analyzes the potential impacts from several ITT program alternatives. Except for *Alternative 3-LCMA 3 Only*, each of the ITT program alternatives presented would apply to LCMAs 2, 3 and the OCC for the American Lobster fishery. Further, common to each of the alternatives (except No Action) are management provisions that would: 1) mitigate against the potential activation of "latent effort", 2) require a database tracking system to manage the inter-jurisdictional complexities of trap transfers; and 3) allow ITT to be implemented according to a timing that maximizes the program's utility and complements state management efforts. These three issues—latent effort under ITT, the need for a database tracking system, and the timing of ITT—are discussed in turn, below.

[124] To date, a number of state-level trap transfer programs have been implemented within certain LCMAs, beginning with the OCC LCMA in 2002, and LCMA 2 in 2005.The OCC LCMA program was proposed in Addendum III in February 2002, followed by LCMA 3 program in Addendum IV in December 2003 and finally the LCMA 2 in Addendum VII in November 2005. Transferability taxes are proposed in Addendum III (for the OCC LCMA), Addenda IV and V (for LCMA 3), Addendum IX (for LCMA 2), and Addendum XII. Addendum VII does not establish a transferability program so much as it suggests that the states establish such a program at some point in the future (see Addendum VII, Section 4.2.1.3, November 2005).

Latent effort under ITT: Latent effort is potential effort. In the lobster fishery, it would represent the number of traps that could be fished, but that are not actually being fished. For example, if a fisher with an 800 trap allocation decides to fish only 500 traps, the remaining 300 traps represent latent effort. Concern about the potential activation of latent effort increases under an ITT program because the more latent effort that exists, the more potential that a spike in fishing effort will occur when those traps not being fished can be transferred (i.e., sold) once ITT is "turned on." Under these circumstances, lobster fishers could maximize their income by transferring "latent" traps to other fishers who would use these traps more actively, thereby increasing the overall level of fishing effort. Though steps 1 and 2 (whereby fishers are qualified to fish within an LCMA and receive trap allocations based on fishing history) attempt to "cap" latent effort, some amount likely remains because many lobster fishers fish less than their maximum allocation.

ITT should not result in greater trap fishing effort. At present, there are 3,152 federal permit holders, any and all of whom can fish up to 800 traps in LCMA 2 and OCC. In other words, it is presently possible for 2,521,600 traps to be fished in LCMA 2 or the OCC if all of these 3,152 federal permit holders fished their full allocation in the LCMAs. ITT in LCMA 2 and OCC, however, is predicated upon limited entry programs being implemented in those LCMAs. This FEIS calculates the LCMA 2 limited access program to restrict effort in LCMA 2 to approximately 192 participants fishing 121,050 traps and the LCMA OCC limited access program to restrict effort in LCMA OCC to 24 participants fishing 10,254 traps. See Chapter 4 – Section 4.2, 4.3. Accordingly, any ITT program in LCMA 2 and OCC would start with a massively reduced pool of potential effort – i.e., approximately 121,050 and 10,254 traps fished in LCMA 2 and OCC respectively, compared to effort of over 2.5 million traps as potentially exists today.

Even though the proposed LCMA 2 and OCC limited access are based upon a participant's actual fishing history, that qualification history is from the early 2000's and may not precisely reflect effort as it exists today. Some qualifiers would receive an allocation greater than they now fish, others smaller than they now fish. When parties transfer traps back and forth in ITT to get back to their present day business models, some of latent allocation would likely be sent to permit holders who would fish the traps more actively. But these activated latent traps would be doing nothing more than replacing currently active traps that were not allocated during the allocation process – at most a zero-sum gain. Again, because the access into LCMA 2 and OCC is presently unfettered and restricted only by an 800 trap cap, any federal permit holder wishing to fish in either LCMA with up to 800 traps may already do so. ITT, therefore, would restrict effort as compared to that present baseline. That is, permit holders wishing to fish in LCMA 2 or OCC could not simply do so by unilateral permit designation into the LCMA (as is the case now), but instead would have participate in the ITT program, find a willing seller and purchase allocation from that LCMA.

Latency issues in LCMA 3 are similar, but further along than in LCMA 2 and OCC. Specifically, NMFS has already restricted access into LCMA 3 based upon historical fishing practices. See Final Rule (68 FR 14902, March 27, 2003). Years later, in 2007, NMFS reduced LCMA 3 trap allocations by an additional 15%. See Final Rule (72 FR 56935, October 5, 2007). The LCMA 3 limited access program and 15% trap reductions have allowed industry observers to posit that the LCMA 3 fishery is lean with minimal latent effort.[125]

Nevertheless, unfettered trap transferability does have the theoretical potential to slightly increase actual trap effort as unused, latent traps in one business are sold to a different business that would fish them more actively. Recognizing this potential, the Commission added a number of measures to its ITT program to balance against the theoretical activation of latent effort, as follows.

[125] Letter from Bonnie Hyler, Atlantic Offshore Lobstermen's Association dated July 10, 2013.

- *"Conservation tax."* A conservation tax debits each trap transfer by some percentage of traps. The effect is a reduction of total allocated traps (which would include latent trap effort), that in the long term would reduce the number of traps actually being placed in the water. All of the ITT program alternatives suggest a conservation tax of 10 percent.

- *Trap caps.* Trap caps are another universal Commission check against the activation of latent effort. Each Commission ITT program establishes a maximum trap number above which no vessel may fish regardless of its willingness and/or ability to purchase latent traps. All transferability programs place a maximum trap limit on vessels in their respective LCMAs.

- *Debit of seller's trap allocation following a sale.* Another measure to balance against effort increase is the Commission's decision to debit the seller's trap allocation in all lobster management areas after a sale. As stated in Addendum VII and Addendum XII (Appendices 2 and 3, respectively), a single lobster vessel operating as a single business shall be considered to have a single indivisible history regardless of the number of LCMAs fished or different LCMA trap allocations received. In other words, because of the differing criteria used in the various LCMA Limited Access Programs, a single fishing business might be allocated exponentially more traps than the vessel ever fished if that vessel were allowed to treat LCMA allocations as being independent and separately divisible. If that vessel were allowed to transfer traps in one LCMA without it affecting the trap allocations in another LCMA, new effort would be spawned.[126] Accordingly, the Commission mandated that all seller trap allocations be reduced upon the sale in one LCMA. Further, the Commission specifically addressed the need to avoid unwanted shifts of effort into the LCMA 1 fishery, which under the proposed ITT measures could be the only LCMA remaining without a limited access program.[127] In accordance with Commission language approved under Addendum XII, therefore, Alternatives 2 and 4 would require that any Federal permit holder who sells a partial trap allocation will no longer be authorized to elect to fish traps in LCMA 1; transfers of a "full lobster business" would not make the seller ineligible to fish with traps in LCMA 1.

- *Prohibition against monopolies.* Prohibit the development of monopolies by limiting the number of traps that can be transferred to a concentrated group of individuals.

- *Prohibition against leasing.* The Commission sought to prevent leasing of traps because trap leasing could activate latent effort in the same way that unchecked transferability could activate latent effort. Specifically, an individual could lease the remainder of his or her unused traps for a fee, thus activating that lobster fisher's latent effort. In fact, leasing could create a transferability loop hole insofar as leasing would allow traps to be, in essence, transferred without having to pay a conservation tax.

- *LCMA 1 ITT Sale Prohibitions.* As described above, it is a central tenet to the Commission's ITT Plan that whenever a seller transfers an allocation, the seller's allocation in all areas must be debited by the amount of the sale (see Addendum XII, Section 4.3.3.2). LCMA 1 qualifiers, however, do not receive a trap allocation. That is, unlike the Commission's

[126] This situation is similar to the paradigm that is commonly referred to as the "Pregnant Boat Syndrome." The "Pregnant Boat Syndrome" is where a single dually permitted fishing business sells off either its federal or state permit to someone else. Under such a scenario, the new permit holder fishes the maximum traps allowed under the transferred permit (e.g., 800 traps) and the original permit holder fishes the maximum number of traps under the retained permit (e.g., 800 traps). Accordingly, a single dually permitted vessel fishing 800 traps maximum has now spawned double the effort (800 traps under each permit). The Pregnant Boat Syndrome is analogous to the trap scenario here in that more traps would be transferred and activated than were ever originally fished.

[127] See Addendum XII, Section 4.4.

limited access plans in the other lobster management areas, the Commission's LCMA 1 plan does give LCMA 1 qualifiers a specific trap allocation, but instead allows all qualifiers fish up to 800 traps in federal waters. Accordingly, were LCMA 1 qualifiers allowed to transfer allocation – e.g., if they had also LCMA 3 allocation – there would be no way to debit the traps fished in LCMA 1. As a result, overall effort on the lobster stock would increase because the LCMA 1 fisher would be transferring allocation to another fisher (who would presumably actively fish that transferred allocation), but still be able to fish the full, pre-transfer trap amount in LCMA 1. Rescinding LCMA 1 participation for transferring permit holders is a way to prevent this type of trap proliferation. An alternative and simpler way to prevent this type of trap proliferation would be to convert the LCMA 1 trap cap into a trap allocation. With an LCMA 1 allocation, LCMA 1 qualifiers would buy and sell without restriction because their LCMA 1 allocation could be debited. NMFS solicited comments on this type of alternative in its Proposed Rule, however, neither the Commission nor any LCMA 1 state responded positively. Consequently, any federal conversion of a trap cap would be unilateral and only in federal waters and would create significant state-federal disconnects.

Database Tracking System: NMFS believes that the establishment of a non-Federally managed database system is a pre-requisite to the approval of any Federal ITT program for the American Lobster fishery. This database would be necessary to allow resource managers to track trap transfers across jurisdictions (e.g., state-to-state, or any transfer involving a dual permit holder); without it, the management of LCMA-wide ITT programs would become overly burdensome and potentially chaotic.

The following conditions would apply as a pre-requisite to any Federal approval of an ITT program for the American Lobster fishery:

- All jurisdictions would have access to this database, in accommodation with state confidentiality requirements;
- Continual funding must be guaranteed (i.e., long-term funding must be allocated to ensure ongoing operational support);
- Dedicated staff is on call to answer questions regarding the database. NMFS, therefore, proposes in Alternatives 2, 3, and 4 that the agency would not begin its ITT program until it has first reviewed the database tracking system and received assurances from the Commission that the database was functioning as designed. NMFS would thereafter notify federal permit holders by Federal Register notice of the ITT start date.

ITT Timing

The timing of any ITT program is critical to its success. As discussed in Chapter 2.1.3 and Chapter 4. 1, the concept of trap transferability was adopted by the Commission at the urging of the lobster industry, primarily as a measure to promote economic flexibility for lobster fishers by allowing them to scale their businesses to an optimal level, and as a self-funded industry buy-out, whereby a lobster fisher could sell his or her allocation and retire from the fishery. However, since the development of the ITT Program, the SNE stock was declared to be in a state of recruitment failure due to a combination of environmental factors and continued fishing mortality. The Commission's reaction to the SNE lobster recruitment failure has spurred the industry's need for transferability. Specifically, the Commission enacted Addendum XVIII to foster stock re-building by implementing, among other measures, a series of trap cuts in LCMAs 2 and 3. These trap cuts are to be phased in incrementally over a number of years (50 percent cut over 6 years for LCMA 2 and 25 percent cut over 5 years for LCMA 3). The cuts have the potential to be impactful, especially in LCMA 2 which

will undergo a 25 percent reduction in the first year of the cuts with an additional 25 percent cut over the following 5 years[128]. In LCMA 3, all allocations will be cut 5 percent per year for 5 years resulting in a 25 percent overall cut for all LCMA 3 allocations.

NMFS is considering these trap cuts as part of a separate rulemaking action and will fully analyze the impacts of the cuts in a separate environmental assessment (see ANPR 78 FR 51131, August 20, 2013). The states, however, have already adopted these traps cuts. As a result, Federal dual permit holders have the potential to have their trap allocation cut by virtue of their state permit and operation of the Most Restrictive Rule (see discussion in Chapter 4.1). The Commission's Plan mandates that the states implement these cuts during the same year that NMFS implements the ITT Program and Federal trap cuts (see Addendum XVIII, Appendix 6). The lobster industry made it clear in public comments to the Proposed Rule and at Commission Lobster Board meetings that it was critical for transferability to be in place contemporaneously with the trap cuts so that affected lobster fishers can buy and sell traps to mitigate the impacts of the trap cuts.

Accordingly, NMFS is aware that the Commission's trap cuts have increased the importance of NMFS' proposed ITT Program. For example, if traps are transferred before traps are cut, then buyers will never be able to fish at their maximum allocation, which for some businesses might be the allocation necessary for profitability. Conversely, if traps cannot be transferred until long after trap cuts, fishers would be forced to fish at restricted, potentially unprofitable levels, until the ITT transfers were effective. And if NMFS did not approve an ITT Program, all LCMA 2 and 3 fishers would be forced to fish at greatly reduced levels (see Chapter 3.2 – Economic Environment for a discussion of the relationship of business profitability and trap allocation). Simply put, Addendum XVIII upped the ante and greatly complicated the implementation schedule of the ITT Program. Chapter 4 examines the impacts of the ITT alternatives including the timing impacts on the ITT from the newly enacted Addendum XVIII.

The potential regulatory, biological, economic, and social impacts of the proposed alternatives for a Federal ITT program for American Lobster are discussed more fully below.

[128] As discussed early in Section 3, however, number of traps fished are but one variable in business profitability and it does not necessarily follow that cuts in allocation will result in reductions in business profits.

4.4.1 ITT Alternative 1 – No Action

Table 4.4 - Comparison of ITT-No Action in Combination with Different LAP Alternatives

		ITT No Action w/LAP Alternative 1- No Action	ITT No Action w/LAP Alternative 2 - Commission Alternative	ITT No Action w/LAP Alternative 3 – Qualify Only
Qualified Permit Holders	Federal Program	Up to 3,000 A3 – N/A	24 – OCC 192 – A2 137 – A3	24 – OCC 192 – A2 137 – A3
	State Program	170 – OCC* 431 – A2* N/A – A3	24 – OCC 192 – A2 N/A – A3	24 – OCC 192 – A2 N/A – A3
Allocated Traps	Federal Program	Up to 2.5 million N/A – A3	Initially: 10,254 – OCC 121,050 – A2 208,458 – A3 Unknown thereafter	Initially: 19,200 – OCC 153,600 – A2 208,458 – A3 Unknown thereafter
	State Program	13,600 – OCC 344,800 – A2 N/A – A3	Initially: 10,254 – OCC 121,050 – A2 N/A – A3 Unknown thereafter	Initially: 19,200 – OCC 153,600 – A2 N/A – A3 Unknown thereafter

*Based on 2012 Federal data.

Regulatory Impacts

Potential regulatory impacts would be from the degree to which the management measures are compatible with the Commission-passed measures under the ISFMP, components of which are currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE-TO-MAJOR, ADVERSE, LONG-TERM, DIRECT REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under this alternative, no Federal ITT program would be implemented. State-level ITT programs, currently in LCMA 3 and OCC, would continue. At the Federal level, up to 3,000+ Federal permit holders (depending on whether a Federal LAP program is in place) would maintain their existing allocation of up to 800 traps each. Under this scenario (which represents the status quo), only the transfer of a fisher's lobster permit and its associated entire Federal trap allocation would be allowed; partial Federal trap allocation transfers would remain prohibited.

Regulatory and Biological Impacts
ITT

Key to understanding the potential regulatory impacts under the No Action ITT alternative is that ITT programs could or would occur at the state level, regardless of their absence at the Federal level. Various states would thus manage their lobster fishery subject to their own history-based determinations of who qualifies for how many traps (in accordance with the Commission-approved measures), while at the Federal level, up to 3,000+ Federal permit holders could "transfer" a fishing vessel with a Federal lobster permit (or a valid Federal lobster permit that is currently in CPH[129]), its associated fishing history and all traps associated with the Federal lobster permit. As a result, under this alternative, significant differences (or "disconnects") between the administering of state and Federal lobster industry management programs are expected. Though under any combination of ITT and limited access programs, NMFS believes that some amount of disconnect will exist between the number of traps the states allocate to the fishery overall versus what will be allocated under a Federal program—because of the disparity in how the states administer their individual programs (discussed above)—under ITT No Action, this disconnect is potentially the greatest, as Table 4.4 illustrates.

A further impact would involve the extent to which the states implement the Addendum XVIII trap cuts that are currently scheduled for the 2014 fishing year. The Commission indicated during its Addendum XVIII process that the proposed trap cuts were predicated upon a complimentary federal ITT program that would allow permit holders to mitigate the impacts of cuts by purchasing additional allocation. Permit holders also commented that the Addendum XVIII cuts could be impactful and urged that ITT be implemented before the cuts were implemented. This No Action Alternative would prevent the mitigation that the Commission and industry were expecting when passing Addendum XVIII.

Compatibility with Commission-Approved Measures

Alternative 1-No Action would deviate substantially from measures outlined in the Commission's ISFMP and associated state regulations establishing ITT programs; as such, by definition, Alternative 1-No Action rejects the proposed measures to implement compatible regulations. As with the No Action-LAP alternatives, No Action-ITT would facilitate a growing divergence between Federal-state management of the American Lobster fishery. The regulatory impacts of this on management, administration, and enforcement are in many ways parallel to those described under the LAP alternatives analysis: Federal and state management objectives would differ substantially and coordination and unified management of a shared but unaligned program would become increasingly difficult. In the case of No Action under ITT, however, the severity of these impacts are more pronounced as a result of the compounding effects that multiple transfers within state waters might have in the absence of a compatible Federal ITT program. With each state transfer of a partial trap allocation under a state ITT program, the disconnect between what the Federal program has authorized for an individual trap allocation and what the state has authorized will expand; this disparity will become even greater as the states apply the 10 percent conservation tax per transfer, as approved under the Commission measures.

The No Action Alternative would also deviate from the Commission Plan insofar as the Commission anticipated and relied upon ITT as providing lobster businesses with mitigation to the trap cuts proposed in Addendum XVIII.

As a result of these differences between Federal and state management programs, management, administrative and enforcement objectives would become more difficult to achieve, as described below:

[129] Confirmation of Permit History. A confirmation of permit history is required when a vessel that has been issued a limited access permit has sunk, been destroyed, or been sold to another person without its permit history and a new vessel has not been purchased. Possession of a confirmation of permit history will allow the applicant to maintain permit eligibility without owning a vessel. An application for a confirmation of permit history must be received by the Regional Administrator no later than 30 days prior to the end of the first full fishing year in which a vessel's permit cannot be issued.

Management Impacts

Under Alternative 1-No Action, the difficulties in managing a shared, but unaligned, state-Federal program for the American Lobster fishery will become more pronounced for the reasons described above. Analytic tools to quantitatively predict the impacts from this inability to align the programs are unavailable; however, based on "best professional judgment," we believe that the potential impacts to management of the American Lobster fishery can be qualitatively described, as follows:

- The American Lobster fishery is a joint state-Federal resource and the need for cooperative and coordinated management is reflected in the Atlantic Coastal Act and the Commission's ISFMP Charter. Because it rejects proposed measures to implement regulations that are compatible with the Commission states, Alternative 1-No Action could be viewed as a refutation of the cooperative principles upon which lobster management is based. On the other hand, it should be noted that nothing in the Atlantic Coastal Act or ISFMP Charter obligates the Federal government to rote adherence to every aspect of the Commission's Lobster Plan, and there have been past occasions where NMFS rejected a Plan recommendation or added a measure that was not recommended.

- Where state and Federal programs grow increasingly out-of-sync with each other in terms of management objectives and basic accounting of who is qualified to fish how many traps, NMFS believes that joint management of the American Lobster resource under Alternative 1 would become unwieldy. Further, NMFS has commented in the past that "disconnects" such as those described above could lead to jurisdictional chaos in the LCMAs.[130]

- Because it would not allow the transfer of partial allocations of traps within Federal waters of any LCMAs, Commission states may believe that Alternative 1-No Action would frustrate the effectiveness of such programs at the state level.

- Addendum XVIII trap cuts are potentially impactful to industry and the No Action Alternative would not allow Trap Transferability mitigate for the trap cut impacts. Although the number of traps fished are but one variable impacting the profitability of a lobster business, trap reductions of 25% to 50% have the theoretical potential to negatively impact dually permitted lobster businesses, particularly those currently fishing at maximum effort, i.e., those fishing businesses who would not be able to compensate for trap reductions by fishing existing traps harder because they are already expending maximum effort. This FEIS discusses lobster business economics in greater detail in Chapter 3. As such, the No Action Alternative would force the Commission states to either implement the Addendum XVIII trap cuts without a Federal Trap Transferability Program—which could result in unanticipated negative impacts to dually permitted lobster permit holders—or force the Commission to rescind the Addendum XVIII trap cuts, which would eviscerate the Commission's response to the SNE lobster recruitment failure.

Administrative Impacts

Because of the potential for both the number of qualified fishers and traps allocated to be substantially out-of-sync between Federal and state management programs under ITT Alternative 1, the administrative burden on affected state and Federal jurisdictions is expected to increase under this option. Under the various LAP alternatives described in Section 4.2-OCC and Section 4.3-LCMA 2, there will be disconnects between what state and Federal programs have authorized in terms of who qualifies to fish

[130] Letter from Patricia A. Kurkul, Northeast Regional Administrator, NMFS to John V. O'Shea, Executive Director, ASMFC. April 23, 2007. Attached as Appendix 12 (NMFS 2007b).

Regulatory and Biological Impacts
ITT

how many traps. There may or may not be, for example, a cap on the potential number of Federal permit holders, ranging from a low of 24 in the OCC LCMA under LAP Alternative 2-Commission and LAP Alternative 3-Qualify Only, to no cap or a high of 3,000+ Federal permit holders under LAP Alternative 1-No Action (Table 4.2) who would still be authorized by NMFS to elect to fish with traps in the OCC on their Federal permit. A similar situation would occur in LCMA 2, where access would vary depending on the LAP alternative, ranging from a high of 3,000+ Federal permit holders under LAP Alternative 1-No Action, to a low of 192 Federal permit holders under LAP Alternative 2-Commission and LAP Alternative 3-Qualify Only, who would continue to be authorized by NMFS to fish with traps in LCMA 2 (Table 4.3).

In addition to the disconnects over the cap on participants, there would be a state-Federal disconnect on the number of traps "authorized." For both LCMA 2 and OCC, Federal permit holders would still be authorized to fish up to 800 traps under LAP Alternative 1 and 3-Qualify Only, in conflict with the ISFMP and state regulations. Even under LAP Alternative 2, where state and Federal measures would be compatible with the ISFMP, consistency would only continue as long as affected states freeze state-assigned trap allocations. If states implement the Commission's recommended conservation tax on transfers, for either whole businesses or partial trap transfers, or attempt to implement a state-only ITT program, inconsistent state-Federal trap allocations would result.

Due to the potential qualification and allocation conflicts noted above and in Sections 4.1 and 4.2, the administrative burden would increase for the Federal government and for all states with a joint State-Federal Trap Tag Memorandum of Understanding (MOU) under ITT Alternative 1-No Action. As noted above, the status quo Federal measures proposed in ITT Alternative 1-No Action would not recognize partial trap transfers or conservation tax reductions that may occur under a state-only ITT program.

States may refuse to issue tags to state 'non-qualified" Federal lobstermen or a dual permit holder that has a lower state trap allocation. As discussed in more detail in Section 2.1-Administrative Impacts, the affected dual permit holder, who is legally prohibited by his state from fishing in the LCMA OCC or LCMA 2 under state law, may subsequently be authorized to fish the Federal waters of the relevant LCMA by NMFS if the state/Federal trap allocations are not compatible.

Enforcement Impacts

Similar to the administrative impacts described above, enforcement of the lobster trap fisheries in the LCMAs would likely become more onerous for state marine fisheries and law enforcement and Federal management and law enforcement staff as the number of qualified fishers and traps allocated become substantially out-of-sync across jurisdictions under ITT Alternative 1. As a result, some unknown level of increased coordination and additional time required to verify permit/trap tag status for individual fishers will likely be necessary. In addition, inter-jurisdictional regulations that are increasingly complicated and confusing for the regulated industry, such as would likely would result under Alternative 1-No Action, may facilitate an increase in fisheries violations and additional fishing effort on the resource.

More specifically, dockside and on-the-water enforcement may need to increase to confirm traps in the water conform to the most restrictive measures in place. State enforcement officers, working dockside and on the water, would likely be most familiar with the state and Commission ISFMP, and would be most likely to effectively enforce the state regulations. In contrast, NMFS OLE officers, working primarily dockside, would likely be most familiar with the Federal lobster regulations and may not be as familiar with the state regulations or the ISFMP that may differ from Federal regulations. The USCG would be the agency responsible for at-sea enforcement of lobster regulations in the EEZ. With enforcement and oversight responsibilities over broad geographic areas, the USCG would likely be most

familiar with the Federal lobster regulations and may not be as familiar with the more restrictive state lobster regulations.

Finally, a state jurisdiction may or may not be able to effectively enforce a lower state trap limit. If one state is more effective at enforcement, it is possible some unknown number of Federal permit holders may forfeit their state coastal license and relocate to a state that may not aggressively administer and enforce the limited access and trap allocation restrictions. Given the different set of measures that would be in effect under state and Federal regulations, and the complex logistics of issuing trap tags for up to seven areas, it may be possible for vessels to elect and to acquire trap tags authorizing access to fish with traps in the LAP LCMAs unless there is aggressive administrative oversight by all affected regulatory agencies.

Biological and Physical Impacts

Potential impacts on biological and physical resources would occur from the degree to which management measures might alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom. Indirect impacts relate to the potential effect on other species (by-catch or bait fish) from changes in level of effort, as well as the potential impacts that lobster gear (such as buoy lines) have on other species, such as marine mammals.

Because of the potential for both the number of qualified fishers and traps allocated to be substantially out-of-sync between Federal and state management programs, the potential activation of latent effort becomes an important issue under Alternative 1-No Action, particularly where the dual permit holder (someone with both a Federal and state permit) is concerned. Any scenario that results in differences between the numbers of traps a state allocates to fishers versus the number of traps allocated under the Federal program expands potential latent effort. Because, under this option, there is a greater potential for the activation of latent effort, minor biological impacts across the spectrum of lobster-related resources under Alternative 1-No Action for ITT are possible, discussed in more detail below.

Lobster

Biological Impacts

MINOR TO MODERATE, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Indirect impacts on the American Lobster population under Alternative 1 would vary depending on which LAP alternative is in place under a Federal program (see Sections 4.1 and 4.2 for discussion of LAP alternatives). While some amount of disconnect between the number of fishers qualified and the number of traps allocated across state and Federal jurisdictions is expected under any of the LAP programs considered earlier, under ITT-No Action combined with LAP-No Action, that disconnect is the greatest and, thus, the potential for increased effort is greatest under this scenario. In this event, dual permit holders would have greater incentive to sell partial or full trap allocations under a state ITT program, while continuing to be authorized to fish up to their full allocation at the Federal level, activating an unknown amount of latent effort within the fishery. When other LAP alternatives are combined with ITT-No Action, the number of qualified fishers and allocated traps is substantially reduced relative to above and, thus, the potential for added effort, while still there, is substantially reduced.

Any increase in effort within the American Lobster fishery will add population pressure to lobster stocks. The biological stock area where this would be of most concern is Southern New England (SNE). For the

LCMA 2, which lies entirely within the SNE stock complex, any potential for increased effort is a particular concern. Under Alternative 1-No Action, anywhere from 315 (based upon 2012 data) to over 3,000 Federal permit holders (based upon total Federal permits) could potentially be fishing up to 800 traps per permit – meaning that managers would have to assume that anywhere from 252,000 to 2,400,000 traps could fish in any given year.

The Commission responded to the SNE lobster recruitment failure by recommending a series of trap cuts in Addendum XVIII. The Addendum XVIII trap cuts were predicated upon NMFS implementing an ITT program.[131] To the extent that the No Action Alternative were adopted, the Addendum XVIII trap cuts would be held in abeyance and the Commission's efforts to remedy the SNE stock recruitment failure would be undermined.

Physical Impacts

MINOR, ADVERSE, LONG-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

In terms of physical impacts, minor, long-term, adverse, direct impacts to lobster habitat would occur under ITT Alternative 1-No Action as a result of any additional lobster gear that would accompany any increase in lobster fishing effort. While there have been few studies on the effect of lobster traps on the ocean floor, available information suggests trap gear, including the lobster traps used in the commercial lobster fishery, tend to have limited long term adverse impacts on the seafloor habitat, particularly when compared with mobile fishing gears such as trawls and dredges. When traps were dragged over the bottom they left tracks, but commercial trap gear appeared to have no negative effect on the abundance of attached benthic epifauna. (Eno et al., 2001). An increase in trap fishing effort may also result in a small increase in lost trap gear. Gear could be lost due to weather, gear conflicts with mobile fishing gear, or due to retaliation for setting traps in this highly territorial fishery. However, to mitigate impacts, Federal lobster regulations do mandate a biodegradable ghost panel in the outer parlor of the trap to allow lobsters and forage species to escape ghost gear.

Protected Species

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF A POSSIBLE INCREASE IN FISHING EFFORT UNDER ALTERNATIVE 1-NO ACTION.

As stated above, the potential for increased fishing effort in terms of numbers of traps fished in the American Lobster fishery under Alternative 1-No Action varies depending on which Federal LAP program would be in place. Any amount of added traps in the water, however, means added associated gear, including vertical lines that increase the risk of entanglement for protected species.

As stated earlier, while some amount of disconnect between the number of fishers qualified and the number of traps allocated across state and Federal jurisdictions is expected under any of the LAP programs considered earlier, under ITT-No Action combined with LAP-No Action, that disconnect is the greatest and, thus, the potential for increased effort is greatest. It is under this scenario that the potential for increased vertical lines in the water is therefore also the greatest, and the protected species population is sensitive to the threat of entanglement (see Section 3.5 of this FEIS for discussion regarding impacts to

[131] Addendum XVIII states that the trap cuts would "… be effective when trap transferability is fully implemented by all management agencies, allowing some members of the industry to sell their allocations of
qualified traps and exit the fishery, and allowing others to purchase traps and maintain full
allocations." Addendum XVIII, Section 2.0, page 5 (August 2012).

protected species from entanglement in fishing gear). When other LAP alternatives are combined with ITT-No Action, however, the potential for added effort, while still there, is substantially reduced and, in those circumstances, NMFS believes the potential impacts to protected species from increased threat of entanglement are likely to be minor.

By-Catch Fish

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO BY-CATCH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

As stated above, the potential for increased fishing effort in terms of numbers of traps fished in the American Lobster fishery under Alternative 1-No Action varies depending on which Federal LAP program would be in place. Any amount of added traps in the water, however, means that there will be a proportionate increase in the amount of by-catch within the fishery.

As has been noted, the potential for increase effort is greatest under ITT-No Action when combined with a LAP- No Action alternative. While the extent to which latent effort will be triggered is unknown, given that the potential for significant increases in effort is greatest under this scenario, NMFS believes that moderate increases in by-catch are possible. Nonetheless, NMFS believes that this increase will not be significant enough to adversely affect population levels for those species and thus its impact will be minor.

When other LAP alternatives are combined with ITT-No Action, the potential for added effort, while still there, is substantially reduced and, in those circumstances, NMFS believes the potential impacts to by-catch species from increased fishing effort in the American Lobster fishery will be minor-to-negligible.

Bait Fish

MINOR, ADVERSE, LONG-TERM, INDIRECT BIOLOGICAL IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

As stated above, the potential for increased fishing effort in terms of numbers of traps fished in the American Lobster fishery under Alternative 1-No Action varies depending on which Federal LAP program would be in place. Any amount of added traps in the water, however, means that demand will proportionately increase for any bait fish species used by the fishery.

Bait, including herring, skates, and fish frames, is used in lobster traps to attract lobsters and it is an important component of the lobster fishery (see also Section 3.4.2). As has been noted, the potential for increase effort is greatest under ITT-No Action when combined with a LAP- No Action alternative. While the extent to which latent effort will be triggered is unknown, given that the potential for significant increases in effort is greatest under this scenario, NMFS believes that moderate increases in demand for bait fish is possible. Nonetheless, NMFS believes that this increased demand will not be significant enough to adversely affect population levels for those species and thus its impact will be minor.

When other LAP alternatives are combined with ITT-No Action, the potential for added effort, while still there, is substantially reduced and, in those circumstances, NMFS believes the potential impacts to bait fish species from increased demand will be minor-to-negligible.

4.4.2 Alternative 2-Commission Alternative

Under this alternative, an ITT program would be administered in Federal waters for the American Lobster fishery and, as such, Federal permit holders would be allowed to transact both whole and partial trap transfers within the Federal fishery. This option assumes that both steps 1 (qualify fishers) and 2 (allocate traps) have taken place in accordance with Commission-approved measures (as described in Sections 4.2 and 4.3). For purposes of this analysis, it is further assumed that Commission states will also be implementing ITT programs within state waters for the American Lobster fishery.

Latent Effort: Because Alternative 2 would result in coordinated state and Federal ITT programs, the divergence in lobster management programs across jurisdictions, as described under ITT-No Action, would be largely diminished (though some disconnects would remain, discussed further below). At both the state and Federal levels, fishers would be qualified and traps would be allocated based on historic fishing practices, in accordance with Commission-approved criteria, and the gap between Federal and state numbers would narrow substantially. As a result, the potential for latent effort to be activated under an ITT program shrinks significantly under this option.

Potential for Effort Shift into LCMA 1: Addendum XII (Section 4.3.3) of the Commission ISFMP states that any permit holder who transfers a partial or full trap allocation from any LCMA will have all other LCMA-specific trap allocations reduced/debited by the same amount. This requirement was instated so as to avoid a "pregnant boat" scenario that would result in increased effort in the fishery overall.[132] Addendum XII also addresses the effect of transferring ITT traps on LCMAs without an individual trap allocation, like LCMA 1. Section 4.4 of Addendum XII specifies, as outlined in Table 4.5 of this FEIS, that the seller of any LAP/ITT traps be prohibited from electing to fish with traps in LCMA 1.

Table 4.5 - The Effect of Permit & Trap Allocation Transferability on LCMAs without History-Based Allocations

Seller Current Trap cap or Allocation:	Transfers:	Seller Trap Allocation:	Assume 10 % Transfer Tax*:	Buyer Trap Allocation:
800 LCMA 1 Trap cap – not an allocation)		Ineligible to fish in LCMA 1		
400 LCMA 2		200 LCMA 2		
1200 LCMA 3 Allocation	200 LCMA 3	1000 LCMA 3	20	180 LCMA 3

Regulatory Impacts

Potential regulatory impacts would be from the degree to which the management measures are compatible with the Commission-passed measures under the ISFMP, components of which are currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

[132] See also footnote 126 for discussion of "pregnant boat syndrome."

MODERATE, BENEFICIAL, LONG-TERM, DIRECT REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2- COMMISSION ALTERNATIVE.

As stated above, Alternative 2 would substantially reduce the divergence in lobster management programs across jurisdictions described under ITT-No Action, though some disconnects are expected to remain (discussed below). At both the state and Federal levels, fishers would be qualified and traps would be allocated based on historic fishing practices, in accordance with Commission-approved criteria, and the gap between Federal and state numbers would narrow substantially.

Compatibility with Commission-Approved Measures

Alternative 2-Commission Alternative would approve Federal lobster management measures that are largely identical to those approved by the Commission; as a result, this alternative would allow for a substantially (though not entirely) unified state-Federal ITT Program. Lobster permit and/or trap transfers under both state and Federal programs would be largely consistent with the ISFMP and fishing effort for qualified fishers would be capped at historic trap levels across all jurisdictions (except for LCMA 1), in accordance with Commission-approved ISFMP criteria. Nonetheless, NMFS believes that potentially inconsistent administration of ITT programs across jurisdictions, discussed below, could frustrate efforts to implement a unified state-Federal ITT program and that joint management, administration, and enforcement of the lobster fishery across state/Federal jurisdictions could remain difficult under this option. These issues are discussed in greater detail below.

Potential Inconsistencies in State Implementation: Alternative 2 would implement ITT management measures for the American Lobster fishery that are intended to be fully compatible with Commission-approved measures. Nonetheless, NMFS believes that some disconnects will still likely occur - most notably on dually held state and Federal permits. As a preliminary matter, the Federal and state governments are sovereign and independent. This means that no matter how the states and NMFS cooperate, each have to make their own separate and independent decisions on permit holder applications according to their separate and independent laws. As stated earlier in Chapter 4, it is unlikely that NMFS will be able to follow its own federal laws and regulations and independently be able to duplicate the various state qualification and allocation decisions that the states have made under state laws and regulations. While NMFS expects much higher consistency under this Commission Alternative than the No Action Alternative, there will nevertheless likely be some permit holders who have qualified under one entity's program, but not another's, and some number of dual permit holders who have been allocated more traps under one permit than the other permit. NMFS believes, however, that several measures passed under the ISFMP could result in certain inconsistencies in how states administer ITT across LCMAs, which could in turn frustrate efforts to implement a unified state-Federal ITT program. NMFS requested public comment on particular inconsistencies in ITT implementation. These include: (1) Medical appeals process for LCMA 2 permit holders; (2) ITT participation, by all permit holders or only qualified permit holders; (3) Minimum number of traps per transfer; (4) Annual transfer deadlines; (5) Permanent loss of Federal permit with less than 50 traps; and (6) Trap haul-out requirements.

- *Restricted vs. Full Participation in ITT transfers*

  Based on NMFS's review of the ISFMP addenda, for the LCMA OCC, "No new participants will be permitted to partake in the OC lobster fishery without receiving trap tags through a transfer from those fishing within the established total trap cap" (Addendum III Section 2.1.7.3-*Annual Trap Transfer Period and Passive Reductions*). NMFS believes that it is not clear from this language whether the Commission intended to restrict transfers and participation only to those previously qualified or allow all Federal permit holders to

Regulatory and Biological Impacts
ITT

participate if they legitimately acquired a trap allocation (trap tags) through a transfer from a qualified OCC participant.

Also unclear is how the language from Addendum III, above, would relate to the language used in other Addenda for LCMAs 2 and 3 regarding who may participate in an ITT program. For LCMA 2, the language is clear in its intent: "(n)othing shall prevent a holder of a federal permit without a pot allocation from acquiring pots from an allocation holder once a transferability program is accepted and implemented" (Addendum VII Section 4.1.1.1(iv)-*Qualification for LCMA 2 Permits*). For LCMA 3, Addendum IV states the following: "(t)he purchase of qualified LCMA 3 traps, by an individual with a Federal lobster permit, regardless of fishing history in LCMA 3, will automatically qualify the purchaser to fish that number of qualified LCMA 3 traps within LCMA 3, once trap tags are issued (Section 4.2.11-*Qualification*)." One lobsterman stated at the DEIS public hearing in Chatham, Massachusetts, that he opposed allowing lobster management area non-qualifiers to gain access into a lobster management area by buying traps that were allocated to that management area. Other lobstermen, however, suggest that individuals not qualified into an area should be allowed to purchase LCMA qualified traps.

This alternative would allow non-qualifiers to purchase qualified LCMA lobster traps. Doing so will increase the pool of potential buyers and thus better facilitate the economic advantages to both buyer (e.g., access to fishing the LCMA at a level appropriate to their business model) and seller (e.g., a larger pool of potential buyers). Allowing non-qualifiers to purchase qualified traps will also help younger entrants into the fishery participate at an economically-viable level. Additionally, allowing non-qualifiers to purchase qualified traps will help offset impacts to individuals who might have fished the LCMA in the past, but failed to qualify, or qualified at a lower trap allocation. The total number of possible participants is limited to individuals with Federal lobster permits (there are presently about 3,152 Federal lobster permit holders). A different option would be to allowing only those permit holders who qualified into an LCMA to buy allocation in that LCMA. This option would result fewer permit holders fishing in the LCMA because no non-qualifiying permit holder would be allowed to buy allocation. Fewer permit holders might be slightly more manageable and have minor enforcement benefits, but the total number of traps allocated and fished would not change, so those benefits would appear to be negligible. A further option would be to allow anybody – even those without a Federal lobster license – to buy allocation. The lack of an associated permit through which NMFS could manage its program would result in a management paradigm change and that is administratively infeasible. On balance, requiring a purchaser to have a Federal lobster permit makes sense. It provides counter-balance: It restricts the number of purchasers to a finite pool and would allow NMFS to maintain management through its permits rather than shifting to a trap-based management paradigm. Further, limiting participation in the Trap Transfer Program to Federal lobster permit holders helps ensure the social and industry characteristics of the fishery insofar as purchasers would be existing lobster fishers rather than the general public, thereby ensuring that potential purchasers have at least some understanding of the fishery.

- *Annual Trap Transfer Application Deadline*

  Under Addendum XII all trap transfer applications are to be completed and submitted to the primary state agency by October 30th of each year, while Addendum XIV specifies the trap transfer deadline for the OCC will be November 30th.

  NMFS did not receive any comments with regards to the annual trap transfer application deadline. NMFS proposes a trap transfer deadline of October 31 of each year, to be implemented for all transfer requests in LCMAs 2, 3, and the OCC LCMA.

- *Minimum Number of Transferable Traps per Transaction*

  For the LCMA OCC, the Commission-approved addenda provide no specific reference to a minimum number of traps per transfer, while for other LCMAs, approved language provides clearer guidance. For example, Addendum XIII states that fishers with OCC trap allocations may transfer some or all of their allocation to other lobstermen in 50 trap increments (Section 4.1.5). For LCMA 3, Addendum IV states: "….a transfer must be comprised of a minimum of 50 traps" (Section 4.2.1-Minimum Transfer). NMFS received four comments on this issue in response to the DEIS. Two commenters supported allowance of transfers of no less than 50 traps. Two other commenters (actually the same person representing two different entities) commented that transfers in 50-trap increments is reasonable, but the minimum transfer amount should be as low as administratively possible to allow traps to be more accessible to smaller operators.

  Permits with a < 50-Trap Allocation

  For the LCMA OCC, Addendum XIII (Section 4.1.5-*Transfer Programs*) specifies that any seller with less than 50 traps shall have the remaining trap allocation and the permit retired. In contrast, Addendum XII (Section 4.3) allows all transferable traps to be sold and the lobster permit, with a zero trap allocation, would be retained by the seller for possible future acquisition of additional transferable traps.

  Permanent retirement of a Federal lobster permit has broad impacts, since there is only one Federal lobster permit and each of the seven LCMAs represent a category under the one permit. In addition, Federal permit holders are frequently authorized to fish in multiple LCMAs. A requirement to "retire" or eliminate the Federal lobster permit when "all" transferable traps associated with one transferable trap allocation in one LCMA are sold would potentially eliminate access and fishing rights that are still valid in other LCMAs.

  NMFS received four public concerning the permanent retirement of a Federal lobster permit, in which the allocation has been reduced to less than 50 traps through trap transfers. All four commenters requested that the permit not be revoked should the permit's allocation be reduced to less than 50 traps. NMFS does not propose to use this option as it would eliminate access to lobster fishing through non-trap permit areas, as well as other areas for which this permit is able to fish.

Management Impacts

Under ITT Alternative 2, management of a shared state-Federal program for the American Lobster fishery across all LCMAs will be substantially improved. As stated earlier, the divergence in lobster management programs across jurisdictions, as described under ITT-No Action, would be largely diminished under this option. At both the state and Federal levels, fishers would be qualified and traps would be allocated based on historic fishing practices, in accordance with Commission-approved criteria, and the gap between Federal and state numbers (i.e., who qualifies for how many traps) would narrow substantially.

Nonetheless, NMFS believes that issues associated with separate state and Federal decision-making together with the disparity in addenda language, described above, could result in qualification and trap allocation numbers across state and Federal management programs that over time will diverge to some extent and that problems with the effective coordination of these programs could thus remain. In particular, NMFS believes that some of the state-specific and/or LCMA-specific management measures passed under the Commission language (identified above) will make coordination across jurisdictions difficult.

Administrative Impacts

In many ways, the administrative burden to state and Federal jurisdictions would decrease under Alternative 2-Commission Alternative, as Federal measures cap participation and cap individual trap allocations for dual permit holders consistent with the ISFMP. Federal measures proposed in ITT Alternative 2 would recognize partial trap transfers, and conservation tax reductions that may occur in OCC, LCMA 2, and LCMA 3. It is presumed the states and the Federal Government would review and approve transfers under a structured process to ensure consistency (see database tracking system discussion, Section 4.1). States would be more likely to continue to issue tags to Federal dual permit holders under the Trap Tag MOU, and all jurisdictions would implement compatible conservation tax reduction under a structured program. Consistent state/Federal administration would also reduce the potential for any incentive to relocate fishing operations.

Nonetheless, because some disconnects will likely continue (as identified above), administrative challenges will remain under this option. For example, language found under Addendum XIII, Section 4.1.5, for the LCMA OCC requires that any seller under an ITT program with less than 50 traps remaining shall have those traps and his/her permit retired, while Addendum XII allows permits to be maintained with a zero trap allocation. Permanent retirement of a Federal lobster permit has broad implications, since that permit can hold fishing privileges in more than one LCMA. A requirement to "retire" or eliminate the Federal lobster permit as specified under the Commission language would potentially eliminate access and fishing rights that are still valid in other LCMAs. Transfers of traps with history in multiple areas could get complicated if each LCMA had different standards for the minimum number of traps that could be transferred.

Despite some specific challenges, such as described above, NMFS believes that the number and severity of potential qualification, allocation, and other conflicts would likely be limited and that the administrative burden would decrease for the Federal government and for all states (relative to No Action) with a joint State-Federal Trap Tag Memorandum Of Understanding (MOU) under ITT Alternative 2.

Enforcement Impacts

Alternative 2 is expected to have beneficial impacts in terms of program enforcement, due simply to the fact that the universe of lobster fishers and their fishing activities in Federal and state waters will be better defined and tracked under an joint state/Federal ITT program. Though NMFS believes some "disconnects" between state/Federal program management will remain, a better-aligned program (relative to No Action) will reduce the need for more on-the-water enforcement to confirm who is fishing how many traps and where.

Further, under Addendum XII (Section 4.3.3.5) all ITT transfers, full or partial, must be approved by every involved jurisdiction (state(s) and/or NMFS) before the transfer is finalized. In effect, if the state and Federal final qualification decision and/or final individual trap allocation determination does vary, dual permit holders are bound to abide by the more restrictive final determination and can be effectively identified through a central database, which NMFS assumes will be operational under any Federally approved ITT program.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Direct biological impacts relate to the amount of effort (harvesting) within

the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom. Indirect impacts relate to the potential effect on other species (by-catch or bait fish) from changes in level of effort, as well as the potential impacts that lobster gear (such as buoy lines) have on other species, such as marine mammals.

Under ITT Alternative 2, there will be a benefit to biological and physical lobster resources as a result of the more effective coordination and synchronization of management and enforcement and for the proposed conservation "tax" feature that is common among the ITT LCMAs that over time will reduce the number of traps in the water. Given this, NMFS believes in general that any short-term adverse impacts on biological and physical American Lobster resources from the proposed ITT management measures (for example, as a result of an increase in the activation of latent effort) will be minor-to-negligible. These issues are discussed in relation to specific resource areas, below.

Lobster

Biological Impacts

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT *AND* MINOR, ADVERSE, SHORT-TERM, INDIRECT BIOLOGICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

More effective coordination between state and Federal jurisdictions and the implementation of relatively uniform management measures would facilitate effective administration and enforcement within the lobster fishery. Regulatory inconsistencies such as described under Alternative 1-No Action would also be significantly reduced. Together, these improvements are expected to substantially reduce the potential for increased trap effort for the lobster fishery.

Further, while some latent effort remains under this option, NMFS does not that effort will increase under an ITT program (see above introduction to FEIS Chapter 4.4: *Latent effort under ITT*). Nevertheless, to the extent any theoretical short-term increase trap increase occurred, it would be off-set over time by the implementation of a 10-percent conservation "tax" on the number of traps sold with each transfer.

Physical Impacts

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT *AND* MINOR, ADVERSE, SHORT-TERM, INDIRECT PHYSICAL IMPACTS TO THE LOBSTER RESOURCE WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

As stated above, more effective coordination between jurisdictions and uniform measures would facilitate effective administration and enforcement and thereby significantly reduce the likelihood of state-Federal regulatory inconsistencies that might result in an increase in trap effort. Any potential increase in traps from latent effort would be minor and mitigated by other ITT provisions such as the conservation tax, most restrictive rule, the trap cap, and prohibition against leasing. With compatible state and Federal measures, there is also likely to be less gear in the water over time and therefore less likelihood of "ghost traps" or lost trap gear. Gear could be lost due to weather, gear conflicts with mobile fishing gear, or due to retaliation for setting traps in this highly territorial fishery. As noted previously, Federal lobster regulations do mandate a biodegradable ghost panel in the outer parlor of the trap to allow lobsters and forage species to escape ghost gear.

Protected Species

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT AND MINOR, ADVERSE, SHORT-TERM, INDIRECT BIOLOGICAL AND PHYSICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

A number of measures under Alternative 2-Commission Alternative will contribute to an overall beneficial impact on protected species. As stated above, more effective coordination between state and Federal jurisdictions and the implementation of relatively uniform management measures would facilitate effective administration and enforcement within the lobster fishery. Regulatory inconsistencies such as described under Alternative 1-No Action would also be significantly reduced. Together, these improvements are expected to substantially reduce the potential for increased trap effort within the lobster fishery. Though some latent effort is expected to remain under this option, NMFS believes that the potential short-term increase in number of traps actually fished will be off-set over time by the implementation of a conservation "tax," which under Alternative 2 would be 10 percent of the number of traps sold with each transfer.

At the same time, NMFS recognizes that under an ITT program, it could be possible for a trap allocation to be sold to a fisher who fishes a smaller number of traps (i.e., someone who has historically fished strings of, say, 20 traps could sell to someone who could split those strings into smaller increments) and in this way, vertical lines could be added to the water. By the same token, however, the reverse is also possible. In general, NMFS believes that there is no reason to expect that fishers will change how they have historically fished their gear; thus, on balance, we do not anticipate that an ITT program will measurably increase the number of vertical lines and thereby add to the threat of entanglement for protected species.

Finally, the OCC Trap Haul-Out provisions under Alternative 2 (see discussion above) would also seasonally reduce the amount of vertical lines in the water, at least within the LCMA OCC. Under these provisions, the ISFMP and Massachusetts state regulations specify that there be a lobster trap haul-out period on the LCMA OCC: "Fishermen shall be required to remove all lobster traps from waters of the LCMA OCC during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure." Compatible regulations would reduce the likelihood of inshore trap fishing effort shifting to the Federal waters of the OCC to avoid compliance. Gear removal during this period would decrease the risk of entanglement.

By-Catch Fish

MINOR, BENEFICIAL, LONG-TERM, INDIRECT AND NEGLIGIBLE, ADVERSE, SHORT-TERM, INDIRECT IMPACTS TO BY-CATCH FISH WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

More effective coordination and uniform measures across jurisdictions and uniform measures would facilitate effective administration and enforcement and thereby significantly reduce the likelihood of state-Federal regulatory inconsistencies that might result in an increase in trap effort. However, as noted previously, the discard mortality rates (the percentage of discarded animals that die) associated with animals caught in traps is low, particularly when compared against the mortality rates linked with mobile fishing gears such as trawls and dredges. In addition, if traps are lost, Federal lobster regulations mandate a biodegradable ghost panel to allow lobsters and forage species to escape ghost gear. The number of animals that die after being caught and discarded in the American lobster fishery appears small compared to actual lobster landings.

Bait Fish

MINOR, BENEFICIAL, LONG-TERM, INDIRECT AND NEGLIGIBLE, ADVERSE, SHORT-TERM, INDIRECT IMPACTS TO BAIT FISH WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

More effective coordination and uniform measures across jurisdictions, and uniform measures would facilitate effective administration and enforcement and thereby significantly reduce the likelihood of state-Federal regulatory inconsistencies that might result in an increase in trap effort as was noted in ITT Alternative 1. It is likely that if trap fishing effort does decrease over time, there would be a proportionate decrease in the use of lobster bait. This decrease in the demand would likely to have a minor, long-term, beneficial, indirect impact on bait fish species.

4.4.3 ITT Alternative 3-Transferability for LCMA 3 Only

Under this alternative, a Federal ITT program would be administered within the LCMA 3 only and as such would be administered primarily by NMFS. State-level ITT programs, currently in LCMAs 2 and OCC, would continue. In addition, the following measures would be approved:

- LCMA 3 qualifiers (i.e., those qualified to fish in the LCMA 3 under a limited access fishery) may *sell* traps either through a "partial trap transfer" or the sale of a "complete lobster business," as defined in Addendum XII (See Appendix 3, Section 4.3).
- The *buyer* of either a LCMA 3 partial trap transfer or a complete lobster business would be subject to a conservation tax and maximum trap cap for LCMA 3 as specified in Addendum XIV.
- For *buyers*, a conservation tax of 10 percent would be assessed for each partial transfer of traps and for the sale of a complete lobster business in LCMA 3.
- Allocations per vessel will be capped at 1,945 traps.[133]
- NMFS is proposing to allow all 3,000+ Federal permit holders be eligible to participate in the ITT trap transfer program, regardless of prior fishing history in the LCMA, as specified in Addendum IV.
- NMFS is proposing to establish a 50-trap increment as the minimum number of individual transferable traps that may be transferred in any partial trap allocation, as specified in Addendum IV.
- Leasing of traps is prohibited.
- NMFS is proposing to complement Addendum XII that would allow Federal permit holders to retain a qualified LCMA specific lobster permit with a zero trap allocation associated with it.
- Finally, this alternative also includes details of an anti-trust provision that seeks to prevent the consolidation of effort by prohibiting businesses from owning more than five LCMA 3 permits, although any business owning more than five permits before December 2003 is exempt from this prohibition.

Alternative 3 attempts to respond to a finding that the inability to entirely eliminate the "disconnects" between state and Federal LAP and ITT programs under any of the other alternatives considered in the EIS would result in unacceptable impacts, either on the regulatory setting or on resources for American

[133] This is consistent with Commission-approved measures under Addendum XIV, passed May 5, 2009 (ASMFC 2009d).

Lobster. Since steps 1 (qualify) and 2 (allocate) have already occurred in the LCMA 3 (under prior Federal rulemaking), a Federal ITT program confined to this management area would allow some partial trap transfers to occur within the Federal fishery under an already unified state/Federal management program. As such, this alternative is meant to reflect a compromise between absolute consistency with the Commission's ISFMP and the complete absence of any Federal ITT program.

Regulatory Impacts

Potential regulatory impacts would be from the degree to which the management measures are compatible with the Commission-passed measures under the ISFMP, components of which are currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE, ADVERSE, LONG-TERM, DIRECT, REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 3-TRANSFERABILITY FOR LCMA 3 ONLY.

From a Federal-only perspective, without compatible state-Federal ITT management measures across all LCMAs to allow the transfer of traps to occur for Federal permit holders, an unaligned multi-jurisdictional Federal-state program would increase the potential risk for ongoing administrative confusion; with this, enforcement burdens would also increase.

Overall, the impacts from Federal implementation of ITT Alternative 3 would be similar to the impacts described in Section 4.4.1-ITT Alternative 1. The one difference is that LCMA 3 participants would, under Federal measures and the Commission's plan, be allowed to sell and/or purchase LCMA 3 transferable traps under ITT Alternative 3. However, lack of a unified ITT program across all affected LCMAs would adversely affect Federal permit holders, state, and Federal jurisdictions (see ITT Alternative 1).

Compatibility with Commission-Approved Measures

Alternative 3 would not implement ITT management measures for the American Lobster fishery in the LCMA OCC or LCMA 2 and would implement ISFMP recommended measures for LCMA 3. The need for consistency across all jurisdictions is discussed in greater detail in the Qualify-Only Alternatives for the LCMA OCC and LCMA 2 programs in Section 2.1 and 2.2. As discussed ITT Alternative 1-No Action, one could expect the risk of state/Federal incongruence to become multiplied with each passing limited access step, particularly given that the transferability step is not a single occurrence, but something that a permit holder might do every year. In LCMA 3, however, NMFS has already accomplished steps 1 (qualification) and 2 (allocation). Unlike in the LCMAs 2 and the OCC, where qualification and allocation have yet to occur, NMFS has already coordinated with the involved states to reach uniformly recognized allocation decisions for the LCMA 3. In other words, in LCMA 3, the states and NMFS could begin transferability working off the same numbers, thus greatly decreasing the threat of regulatory dysfunction that might occur were permit holders allowed to transfer allocations that the states and NMFS set differently. Similar to Alternative 1 – No Action, this alternative would not mitigate for the Commission's Addendum XVIII trap cut impacts, and may, potentially undermine Commission efforts to respond to the SNE stock recruitment failure to the extent that the trap cuts were held in abeyance absent ITT.

Management Impacts

Under ITT Alternative 3 management impacts would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Administrative Impacts

Under ITT Alternative 3 administrative impacts would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Enforcement Impacts

Under ITT Alternative 3 enforcement impacts in the LCMA OCC and LCMA 2 would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom. Indirect impacts on other species (by-catch or bait fish) relate to changes in level of effort, as well as the potential impacts that lobster gear (such as buoy lines) have on other species, such as marine mammals.

The potential biological and physical impacts on lobster resources from Alternative 3 would fall in between those described under ITT Alternative 1 and ITT Alternative 2. In general, while there is a potential for an increase in fishing effort as described in ITT Alternative 1, NMFS believes that the short-term adverse impacts on biological and physical American Lobster resources would be negligible-to-minor.

Lobster

Biological Impacts

MINOR, ADVERSE, SHORT–TERM, INDIRECT, IMPACTS ON BIOLOGICAL RESOURCES WOULD BE EXPECTED UNDER ALTERNATIVE 3-ITT IN LCMA 3 ONLY.

Under ITT Alternative 3, indirect biological impacts to the lobster resource would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Physical Impacts

MINOR, ADVERSE, SHORT–TERM, INDIRECT, IMPACTS ON PHYSICAL RESOURCES WOULD BE EXPECTED UNDER ALTERNATIVE 3-ITT IN LCMA 3 ONLY.

Under ITT Alternative 3, indirect physical impacts to the lobster resource would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Regulatory and Biological Impacts
ITT

Protected Species

MINOR, ADVERSE, SHORT–TERM, INDIRECT BIOLOGICAL IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF A POSSIBLE SMALL INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 3-ITT IN LCMA 3-ONLY.

Under ITT Alternative 3 indirect impacts on protected species would be similar to those described in Section 4.4.1-ITT Alternative 1.

By-Catch Fish

MINOR, ADVERSE, SHORT–TERM, INDIRECT IMPACTS TO BY-CATCH FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-ITT IN LCMA 3-ONLY.

Under ITT Alternative 3 indirect impacts to by-catch fish species would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

Bait Fish

MINOR, ADVERSE, SHORT–TERM, INDIRECT IMPACTS TO BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 3-ITT IN LCMA 3-ONLY.

Under ITT Alternative 3 indirect impacts to bait fish would be similar to the impacts described in Section 4.4.1-ITT Alternative 1.

4.4.4 Alternative 4-Optional ITT Program

Under this alternative, all qualified permit holders would have the "option" of participating in a Federal ITT program, subject to their adherence to a number of management requirements designed to address the potential "disconnects" described under ITT Alternative 2-Commission Alternative. Permit holders would not be obligated to take part in the transferability program, but could choose to if they so desired. Steps 1 (qualify) and 2 (allocate) are presumed to have occurred in accordance with Commission-approved measures for each affected LCMA.

Adherence to the following management measures would be mandatory:

- To the extent a lobster fisher has dual permits, (i.e., both a federal and state permit), with different state and federal trap allocations, the permit holder must agree that the more restrictive allocation shall govern and become the official Federal individual transferable trap allocation in the specified LCMA(s).
- The application deadline for a Federal permit holder to request participation in the transfer of a partial trap allocation will be due by a certain date every year, and, as discussed in greater detail in ITT Alternative 2-Regulatory Impacts, NMFS is proposing October 31st. The states and NMFS shall have some period of time after the due date to approve or deny the applications, e.g., 60 days. Upon approval by all affected regulatory agencies, the transferred traps may be fished at the start of the next fishing year.[134]

[134] NMFS believes establishment of a consistent annual trap transfer application deadline across all participating LCMAs would improve administrative operations. Since a dual permit holder may reside in a state with an annual license renewal deadline early in the calendar year, selection of the earlier date, October31st, allows all jurisdictions sufficient time to ensure all trap transfers are approved prior to issuance of the next year's state and Federal lobster licenses. In addition, selection of October 31st as the application deadline also provides adequate time to

- Transfers may occur between sellers who have qualified into the LCMA in which the transfer is taking place and any Federal lobster permit holder, *or* transfers may only occur between buyers and sellers who have qualified into the LCMA in which the transfer is taking place. Further, transfers can only involve Federally-allocated traps that have been allocated into the LCMA.[135]
- To the extent that a transferred trap had a history within multiple LCMAs and thus is part of a multi-LCMA allocation, the buyer may fish that trap in any of the LCMAs for which it qualifies (see Addendum XXI).
- A seller's trap allocation in other LCMAs shall be debited by the number of traps transferred (see Addendum XII-Section 4.3.3.4. and 4.4).
- The buyer(s) of transferred traps shall be subject to a 10 percent conservation tax so that at the completion of the sale, traps transferred shall be debited from the buyer's new allocation as appropriate to account for the conservation tax. The tax applies only to trap allocations in LCMAs with a transfer tax program (see Addendum XII Section 4.3.2.).
- Traps shall be transferred in 10-trap-minimum increments, effective across all participating LCMAs.
- In accordance with Addendum XII, Federal permit holders shall be allowed to retain a qualified LCMA-specific lobster permit with a trap allocation of less than 50 traps, including a zero trap allocation.
- A seller may no longer be authorized to fish with traps in LCMA 1, after any LCMA "partial" transferable trap allocation transfer has been made (see Addendum XII Section 4.4.)
- The maximum trap allocation for LCMA 3 shall be 1,945 traps.

This ITT alternative attempts to balance the industry's need for flexibility with the managers' need to ensure that joint state-Federal management of the lobster resource is consistent across jurisdictions and the program can be effectively tracked and managed. It is the same as Alternative 2 – Commission, except that this alternative would introduce ITT as a voluntary program into which permit holders could allocations upon reconciling disconnected state and federal allocations. It also standardizes the minimum number of traps that can be transferred to 10 traps to provide flexibility to maintain consistency across management areas.

When the LCMA 2, 3 and OCC Limited Access Programs were being developed, industry voiced concerns that the programs might cause some hardship for certain individuals who were allocated lower trap numbers. Industry reasoned that transferability would mitigate these hardships because it would allow participants to build their trap numbers up through partial trap allocation purchases. Managers, however, voiced caution: consistent decision-making was imperative and the potential for inconsistency appeared great, given the multiple steps in LCMA programs (i.e., first qualifying, then allocating, and finally transferring) and the multiple jurisdictions involved. Management of dual permit holders with differing state and Federal transferable trap allocations was thought to be problem enough, but keeping track of those differing allocations after successive transfers was thought to invite chaos. Alternative 4-Optional ITT is designed to alleviate both sets of concerns.

Regulatory and Biological Impacts
ITT

ensure all jurisdictions are in agreement prior to issuance of the next fishing year's trap tags to dual permit holders in states with Trap Tag MOUs. Also, standardization of the application deadline across all LCMAs would enhance participant awareness of the regulations throughout the range of the resource and facilitate effective outreach and compliance with the regulations.

[135] For dual permit holders, the federally allocated traps would likely also be part of a state allocation. NMFS recognizes this fact and transfer of such traps would remain permissible. Transfer of state-only traps to Federal permit holders, however, would not be allowed.

This alternative should both provide industry some flexibility to make business decisions and provide managers with some assurances that a transferability program will not undermine the goals of the Lobster ISFMP. Under this option, dual permit holders with differential trap allocations would not be obliged to forfeit their higher trap allocation, but they would not be able to participate in the transferability program if they chose to retain it.[136] If they chose to take part in the transferability program, this alternative would synchronize the dual permit holder's allocations, thus greatly facilitating tracking of the transferred traps. The additional parameters, including the prohibition on inter-LCMA transfers, are designed to allow transferability to take place in such a way that is manageable.

Regulatory Impacts

Potential regulatory impacts would be from the degree to which the management measures are compatible with the Commission-passed measures under the ISFMP, components of which are currently implemented by the relevant states in state waters; the extent to which any "disconnect" between the state and Federal management regimes creates state and Federal enforcement problems; and the extent to which these disconnects create administrative burdens at the state and Federal level (e.g., data tracking).

MODERATE-TO-MAJOR, BENEFICIAL, LONG–TERM, DIRECT, REGULATORY IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Alternative 4-Optional ITT is designed to mitigate against the previously described problem of compounding allocation disconnects with subsequent trap transfers. Potential regulatory impacts under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. For example, to the extent that eligible permit holders participate, then the program would look similar to that described in Section 4.4.1-ITT Alternative 2 (Commission Alternative), but with a notable exception: all disparate dual permit holder allocations would be leveled at the start of Alternative 4's optional program. That is, whereas differing initial state and federal allocations would continue and potentially compound in the Commission Alternative, this initial difference would be eliminated under the optional program. Under this alternative, a dual permit holder's state and federal allocations would be made even and start from the same point. Alternatively, if a permit holder chooses not to participate in the optional ITT program, they would not be required to do so. Partial trap allocations then could not be transferred, and the problems associated with differing state/Federal trap allocations would thus be minimized and contained.

If a majority of those eligible chose not to participate in the optional ITT program, potential regulatory impacts would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

The lack of a unified ITT program may appear to complicate administration and enforcement because permit holders may believe that they retain greater access to management areas and higher Federal trap allocations if they "opt out" of the ITT program proposed under this alternative. Addendum XII and federal regulations mandate, however, that dual permit holders abide by the more restrictive of competing lobster measures. The dual permit holder thus might retain a higher Federal allocation, but nevertheless would be restricted from fishing with the excess traps. (Federal regulations specifying this principle are set forth at 50 CFR 697.3.)

[136] This may be a distinction without a difference insofar as state and federal regulations mandate that dual permit holders must abide by the more restrictive of competing lobster measures. In other words, the dual permit holder might retain that higher allocation, but would nevertheless be restricted from fishing with the excess traps. The federal regulations specifying this principle are set forth at 50 CFR 697.3.

Further, this alternative presumes that a centralized database, as specified in Addendum XII, is operational and that affected jurisdictions would have the ability to monitor all state and Federal participants, which would in turn result in more effective administration and compliance.

Compatibility with Commission-Approved Measures

Alternative 4 would implement ITT management measures for the American Lobster fishery in OCC LCMA, LCMA 2, and for LCMA 3 under the conditions specified above for those that voluntarily choose to participate in an LCMA-specific ITT program (See also ITT Alternative 2 discussion above.)

However, ITT Alternative 4 is only partially compatible with the ISFMP in that it allows Federal permit holders to "opt-in" to the ITT program, and it would not be a mandatory requirement for all permit holders to participate in the ITT programs as specified in the ISFMP. Depending on the LAP alternatives used (Section 4.1 and 4.2), it is likely that a number of Federal permit holders, ranging from a limited number of "qualified" participants under LAP Alternative 3-Qualify Only to potential involvement of all 3,000+ Federal permit holders under LAP Alternative 1-No Action, would choose not to participate. The specific number that chose to participate is impossible to predict with any degree of precision and might ultimately depend on the alternatives chosen in Sections 4.1 and 4.2 of this document.

The Commission's Plan for LCMA 3 now includes a trap cap of 2,000 traps (as of Addendum XXII – October 2013), while ITT Alternative 4 would maintain the 1,945-trap limit currently in place for LCMA 3. Although inconsistent with the Commission's Plan, the disparate trap limits are expected to be minor since permit holders would need to abide by this more restrictive measure. The 2,000 trap cap is already being analyzed by NMFS in a separate action within the context of the trap reductions and trap cap adjustments adopted by the Commission in recently approved Addendum XXII which was too new to be evaluated in this FEIS.

In contrast to the LCMA 3 trap cap and various other measures included in this preferred alternative, ITT Alternative 4 does not propose to invoke a conservation tax on trap allocations when a full business transfer takes place. Full business transfers are already allowed, have always been allowed and technically, are not part of any ITT program. The Commission, however, while contemplating transfer taxes, recommended that NMFS extend the conservation tax to cover not only partial transfers under the ITT Program, but also full business transfers (i.e., when a complete lobster business including the Federal lobster permit and its history are transferred). NMFS does not include the application of the conservation tax when a lobster permit is transferred for several reasons. First, permit transfers are a routine action in the Federal lobster industry and permit holders are not only selling permits to someone else, they are transferring permits to and from vessels that they own for business and seasonal fishery related reasons. To tax their trap allocation under such circumstances would appear to be outside the scope of the ITT Program which is intended to allow business to buy and sell part of a permit's trap allocation. Second, the greatest number of transfers occur in LCMA 1 as permits are bought and sold and also transferred by the owner to other vessels for business purposes. Although LCMA 1 does have a limited entry program, all qualified permits may fish up to 800 traps. Since there are no individual permit-based allocations for LCMA 1, only a trap cap, there is no way to deduct a number of traps from the permit's LCMA 1 allocation in the event of a permit transfer. To adopt this as part of the preferred alternative would evoke confusion and more state-Federal disconnects. Further, the benefits of conservation from the trap reductions of the tax would be outweighed by the negatives of reduced business flexibility and regulatory and enforcement confusion.

The optional ITT alternative differs slightly from the Commission's Plan in another way because it allows traps from all ITT areas to be transferred in increments of 10 traps. The Commission's Plan has different standards for each area regarding the number of traps that can be transferred. Specifically, Addendum IV

states that an Area 2 trap transfer must be comprised of a minimum of 50 traps and in units of 10 traps. That same addendum requires that an Area 3 trap transfer be comprised of a minimum of 50 traps, with no specifics on the incremental amount in excess of 50 traps. The standard for the OCC Area, set forth in Addendum XIII, is yet again different from the others, requiring trap transfers in 50-trap increments, while also allowing those permit holders with less than 50 traps to transfer all their traps.

NMFS received four comments on this issue in response to our request for input in the DEIS. Two commenters supported allowance of transfers of no less than 50 traps. Two other commenters (actually the same person representing two different entities) commented that transfers in 50-trap increments is reasonable, but the minimum transfer amount should be as low as administratively possible to allow traps to be more accessible to smaller operators. Given that the intent of the trap transfer program is to allow flexibility for fishermen, and in consideration of these comments, our proposed rule provided for transfers in 10-trap increments with no restriction on a minimum number of traps in a transfer. We did not receive any comments on this issue in response to the proposed rule and, notably, there were no objections brought forth by the public to moving forward with this more flexible approach.

Consistent measures across all management areas on the number of traps that may be transferred will simplify the transfer process, which could become complicated if traps with history in multiple areas are transferred but subjected to different area-specific standards on the number of traps that may be transferred. Information from the developers of the Commission's Trap Transfer Database indicates that the database will have sufficient capacity to track transfers of less than 50 traps. This option will provide more access to traps for smaller operators while allowing those with small allocations to more easily sell traps. Therefore, we estimate that this modification would provide added value to fishermen through increased flexibility and simplification while not resulting in further negative effects on the administration of the Trap Transfer Program or the lobster resource.

Management, Administrative, and Enforcement Impacts

Potential management, administrative, and enforcement impacts under Alternative 4-Optional ITT depend on the number of permit holders participating in the program as immediately described above. Again, the optional program should minimize many of the management, administrative and enforcement impacts as compared to Alternative 1 (No Action) and Alternative 2 (Commission ITT) because this alternative mitigates the problems that would compound if differential trap allocations were transferred. Enforcement and administrative impacts would be realized if NMFS did not apply the conservation tax on full business transfers. We know that some states, including Massachusetts, have applied the conservation tax in such circumstances. However, at the onset of ITT, NMFS and the states stand the greatest chance of reconciling such differences if the preferred Optional ITT Program is selected. This would require dual permit holders to align their state and Federal trap allocation in order to participate in the program and transfer traps. Therefore, despite the disconnect, the potential for mitigation is high.

If a majority of those eligible chose not to participate in the optional ITT program, potential management, administrative, and enforcement impacts would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

Biological and Physical Impacts

Potential impacts on biological and physical resources would be from the degree to which management measures would alter the number of traps in the water or their geographic location, including their concentration in any one area. Indirect biological impacts relate to the amount of effort (harvesting) within the fishery. Indirect physical impacts relate primarily to the impacts that the placement of lobster traps have on the ocean bottom. Indirect impacts also relate to the potential effect on other species (by-

catch or bait fish) from changes in level of effort, as well as the potential impacts that lobster gear (such as buoy lines) have on other species, such as marine mammals.

The potential biological and physical impacts on lobster resources from Alternative 4 would fall in between those described under ITT Alternative 1 and ITT Alternative 2. While there would be some number of Federal permit holders who would choose to participate in an ISFMP-compatible ITT program, there would be some who may choose not to participate. Though there is the potential for a theoretical increase in fishing effort, as described in ITT Alternative 1, NMFS believes that the short-term adverse impacts on biological and physical American Lobster resources would be minor and longer term impacts would be negligible.

Lobster

Biological Impacts

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT AND MINOR, ADVERSE, SHORT-TERM, INDIRECT IMPACTS ON BIOLOGICAL RESOURCES WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Potential biological impacts on lobster under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. If a majority of those eligible participate, the potential impacts would be similar to those described in Section 4.4.1-ITT Alternative 2. As discussed in Alternative 2, effort is not expected to increase as a result of ITT (see above introduction to FEIS Chapter 4.4: *Latent effort under ITT*). Nevertheless, to the extent any theoretical short-term increase trap increase occurred, it would be off-set over time by the implementation of a 10- percent conservation "tax" on the number of traps sold with each transfer. Further, the amount of latent effort that would exist under this option is significantly less than what would be possible under the ITT No Action alternative.

If a majority of those eligible chose not to participate in the optional ITT program, potential biological impacts on lobster would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

The preferred alternative would not apply the conservation tax to an allocation in the event of a full business transfer. Given that permits are transferred often, this omission of this measure would forego the trap reduction benefits to lobster and other species that could otherwise result. However, with every LCMA's permits and traps capped, and with more trap reductions on the way, the potential environmental benefits are expected to be small compared to the benefits of business flexibility associated with no conservation tax for full business transfers.

One other inconsistency of this alternative compared to the Commission's Plan is that ITT Alternative 4 will not adopt the Commission's 2,000 trap cap for LCMA 3. Maintaining the current LCMA 3 trap limit of 1,945 traps will not likely be more beneficial to lobster in any direct quantifiable way than the Commission's 2,000-trap limit, despite the lower cap. Given the limited number of traps allocated for LCMA 3, only a small number of permit holders would be able to fish up to either limit. The number of LCMA 3 traps are capped and historical effort, as initially allocated, has been pared down by about 15 percent since 2007 with additional trap reductions expected in the future of up to 25 percent, as mandated in recently adopted changes to the Commission's Plan. NMFS will analyze the trap caps with respect to the schedule of annual trap reductions in a separate action. In the meantime, the current cap affords a more conservation-minded limit on traps but, nevertheless, it does not ensure that less traps would be fished overall in LCMA 3 than under the Commission's 2,000-trap limit. Finally, ITT is now a foundational element of the Commission's Lobster Plan and the Commission's response strategy to the

SNE recruit failure is predicated upon ITT being established in both state and federal waters. In other words, ITT implementation will allow the Commission to respond to the SNE stock recruitment failure, which is an overall long term benefit to lobster.

Physical Impacts

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT AND MINOR, ADVERSE, SHORT-TERM, INDIRECT IMPACTS ON PHYSICAL RESOURCES WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Potential impacts on lobster habitat under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. If a majority of those eligible participate, the potential impacts would be similar to those described in Section 4.4.1-ITT Alternative 2.

If a majority of those eligible chose not to participate in the optional ITT program, potential impacts on lobster habitat would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

Protected Species

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT BIOLOGICAL AND MINOR, ADVERSE, SHORT-TERM, INDIRECT IMPACTS TO PROTECTED SPECIES WOULD BE EXPECTED AS A RESULT OF A POSSIBLE SMALL INCREASE IN FISHING EFFORT ANTICIPATED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Potential impacts on protected species under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. If a majority of those eligible participate, the potential impacts would be similar to those described in Section 4.4.1-ITT Alternative 2.

If a majority of those eligible chose not to participate in the optional ITT program, potential impacts on protected species would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

Though there is the potential for an increase in fishing effort because of an unquantifiable activation of latent effort, as described in ITT Alternative 1, NMFS believes that the short-term adverse impacts on protected resources would be minor and offset over time by trap reductions built in to this option through a “conservation tax.”

By-Catch Fish and Bait Fish Species

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT AND NEGLIGIBLE, ADVERSE, SHORT-TERM, INDIRECT IMPACTS ON BY-CATCH FISH AND BAIT FISH SPECIES WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

Potential impacts on by-catch and bait fish species under Alternative 4-Optional ITT depend on the number of permit holders participating in the program. If a majority of those eligible participate, the potential impacts would be similar to those described in Section 4.4.1-ITT Alternative 2.

If a majority of those eligible chose not to participate in the optional ITT program, potential impacts on by-catch and bait fish species would be similar to those described in Section 4.4.1-ITT Alternative 1, combined with LAP Alternative 2.

4.5 Economic Impacts

The analysis provided below examines the potential economic impacts of the proposed limited access and ITT measures on the affected fishing industry.

In general, the analysis provides two important conclusions. First, with regard to the proposed limited access programs, no economic impact is expected under any of the alternatives (except No Action), given that no change to historical fishing practices would result. Second, under the ITT program alternatives, there are important economic efficiencies to be realized for industry participants (see 4.5.3, below), which, once in place, the LAP programs will facilitate. For the ITT programs, given that the choice to buy or sell traps is up to the individual fisher, NMFS cannot predict in real numbers what the economic impact will be on the fishing communities. What it can predict is that the impact lies in the providing of the choice itself to buy or sell traps: under an ITT program, fishers will be able to make their own business decisions about whether to scale up or scale down, based on their own perceived goals.

4.5.1 LCMA OCC LAP Alternatives

Alternative 1 – No Action

NEGLIGIBLE-TO-MINOR, ADVERSE, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

The Commonwealth of Massachusetts implemented a limited entry and trap allocation for anyone holding either a Massachusetts state permit or a dual MA/Federal permit for the OCC during 2002. However, while the state's action would not allow any Massachusetts vessels not already qualified for limited access to the OCC LCMA to fish in the area, under this alternative, the EEZ portion of the OCC LCMA would remain open to federally permitted lobster vessels from any other state to set up to 800 traps in the area. The likelihood that any such vessel would choose to fish in the OCC LCMA is uncertain. Available data indicate that only 112 vessels selected the LCMA OCC on their permit application during 2012 and of those only 38 (24 of which were from MA) actually purchased trap tags for the area (see Table 4.2). Whether any of the 12 vessels from states other than Massachusetts actually fished traps in the LCMA OCC is not known. Nevertheless, if a shift in effort were to occur under this alternative the most likely economic impact would be a dilution in profitability for current and future participants. At least part of the lobster catch in the LCMA OCC is attributable to migrating lobsters between inshore and offshore areas. Increasing the number of participating vessels and traps fished in the area may result in higher landings overall, but unless landings linearly increase with traps fished, landings, and average gross stock per vessel would be more likely to go down.

Alternative 2 – Commission Alternative (Preferred Alternative)

MINOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

With adoption of Addendum XII, the Commission accepted the Massachusetts plan as the Commission alternative for managing limited access and trap allocations in the LCMA OCC. This alternative would implement complementary Federal regulations that would similarly limit access and allocate traps based on the Massachusetts state plan. Since this alternative would leave current qualifiers and trap allocations unchanged from present levels, no economic impacts attributable to Federal action would be expected. Over the longer term, increased certainty over eligibility to fish and the number of traps that may be

fished in the area may increase the effectiveness, timeliness, and transactions costs associated with managing the OCC lobster trap fishery.

Alternative 3 – Qualify Only

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

This alternative would adopt the Commission-approved measures for qualifying fishers into the LCMA OCC, but would allow all Federal qualifiers to fish up to the 800 trap cap. Although the number of qualifiers would be the same as that of Alternative 2, this alternative would result is some probable increase in the number of traps fished in the area. Because of the Most Restrictive Rule, the economic impact of this alternative is unlikely to differ from Alternative 2, at least for dual permitted vessels from Massachusetts. However, should vessels from other states qualify for limited access, differences among OCC vessels would be likely to occur. The economic implications of this alternative are likely to be negligible since the numbers of vessel participating in the OCC lobster trap fishery or on the number of traps fished are likely to differ little from that of Alternative 2.

4.5.2 LCMA 2 LAP Alternatives

Alternative 1 - No Action

MINOR, ADVERSE, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

The template for limited access qualification and making trap allocations among states that have permitted vessels that fish in LCMA 2 was established under Addendums VII and XII. Although there were some differences across states in the manner in which these Addenda were actually implemented, states have already determined which vessels qualified for limited access to LCMA 2 and have made initial trap allocations. Alternative 1 would not affect action already undertaken by the states, but would leave the EEZ portion of LCMA 2 an open access area. The economic impact of any expansion of effort that may be associated with open access are uncertain, but it may be expected to have an adverse impact on profitability of current and future LCMA 2 participants. In the near term, catch rates are unlikely to increase linearly with increased traps, so an increase in traps fished would have the effect of diluting the profitability for all lobster trap businesses. In the longer term the potential for increased removals would compromise rebuilding objectives leading to the need to implement more stringent management measures in the future. This externality would spread the economic costs of open access to the portion of the lobster fishing businesses that are subject to limited access programs implemented by the states.

While leaving the area open access would allow for the potential for a substantial increase in traps fished in the area, the extent to which this potential would be realized is uncertain. Available data suggest a gap between stated intentions on a permit application and the purchase of trap tags. During 2012 a total of 315 permit holders elected LCMA 2, but less than half of these vessels actually purchased trap tags. In fact, the sum of all purchased trap tags under this alternative was still less than the total number of traps allocated under the Commission alternative (see Table 4.3). For this reason, the economic impact of leaving LCMA 2 open access may not be particularly large.

Alternative 2 – Commission Alternative (Preferred Alternative)

MINOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

This alternative would implement the qualification and trap allocations already implemented by the states. Based on preliminary analysis, a total of 192 permits would qualify for limited access to LCMA 2, with a total allocation of 121,050 traps. In the absence of an ITT these vessels would be unable to obtain any traps and would be prevented from participating in the LCMA 2 lobster trap fishery. For qualifying permit holders this alternative would assure that the externalities associated with leaving LCMA 2 open to any federal permit holder would not occur. This would assure that the total number of traps that could be fished in LCMA 2 would be capped and would set the stage for an ITT program that allow vessels greater flexibility to scale fishing business activities to prevailing economic conditions. This alternative would further promote consistency between State/Federal management and would improve the likely effectiveness of any broodstock management measures should they become necessary.

Alternative 3 – Qualify Only

NEGLIGIBLE-TO-MINOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 3-QUALIFY ONLY.

This alternative would qualify the same number of limited access permit holders that have already been deemed qualified by the states. However, the potential number of traps that may be fished would be limited by the maximum of 800 traps instead of the qualifying traps as determined by the states. This alternative would qualify up to 153,600 traps although recent data suggest that far fewer traps may actually be fished (108,000, see Table 4.3). This alternative would have at least a short-term positive impact on vessels that would not otherwise have received an allocation of 800 traps based on the state's allocation formula, particularly vessels whose production per trap may be below average.[137]

The economic impact of allowing a larger number of traps to be fished in LCMA 2 is uncertain. While some vessels may be able to increase the number of traps fished under this alternative, it is unlikely that all vessels would actually do so since available data indicate that even when vessels were able to fish up to 800 traps, many did not. Nevertheless, the potential for increased effort would remain and the inconsistency between state and federal management actions would also persist. If this alternative were selected and all permit holders could fish up to 800 traps, an ITT program would not be necessary since everyone could fish up to the maximum cap of 800 traps (i.e., there would be no “buyers and sellers” because everyone can already fish up to the maximum allowed). However, in addition to promoting economic efficiency the anticipated trap reductions that would occur through the tax on transfers would not be realized.

4.5.3 ITT Program Alternatives

An ITT would allow individual lobster fishers the flexibility to adjust their business plans up or down by purchasing/selling traps to another qualified lobster trap fishing business. Four alternatives are being considered, including taking no action. The alternatives that would implement an ITT are based on the premise that any allocation of traps would associated with a single entity. These alternatives also have several other characteristics in common. Trap transfers may only take place within an individual LCMA. That is, traps allocated to a particular LCMA may not be transferred to any other LCMA. Each alternative includes an accounting of debit and credits to an entity's trap allocation and each alternative includes a conservation tax on each transfer such that the total traps transferred are debited from the seller's allocation and the number of traps credited to the buyer is reduced by the tax. Leasing of traps would be

[137] That is, predictions based on a regression equation tend to be more reliable the closer to the mean of the data used to estimate the regression. Using the regression equation, for any given level of production, a vessel with above average production per trap would receive a higher trap allocation than what may have actually been used while the converse would be true for a vessel with below average catch per trap.

prohibited and each alternative includes a cap on the maximum number of traps that any one entity could acquire.

In general an ITT program may be expected to provide individual lobster businesses the flexibility to scale their business up or down according to individual business plans. Since qualification of trap allocations were partially based on levels of participation during the qualification period, many vessels may receive allocations that do not reflect desired business planning, with some entities receiving higher while others receive lower allocations. Transferability makes it possible for these trades to take place, thereby increasing economic efficiency on the use of traps in the lobster fishery. Traps may be expected to be traded from less economically efficient vessels to more efficient ones. That is, the buyer may be expected to be more profitable either because it has a lower cost structure than the seller or, is more technically efficient, or both. The conservation tax provides a mechanism to offset the potential transfer of either latent or less efficient traps from one entity to another more technically efficient one.

Though trap caps appear in the Commission alternative as a means to prevent monopoly power, NMFS believes that they are not so much an economic issue as perhaps an effort by Commission members to address social impact concerns with regard to ITT and the potential concentration of industry participation amongst a few industry players. Monopoly or market power comes from the ability to achieve a non-transient increase in the market price by withholding supply. Given the fact that the overwhelming majority of lobster landings come from LCMA 1 and the large amount of imported lobster from Canada, the ability to exert enough control of the total supply of lobsters is not likely to emerge.

Alternative 1 – No Action

MODERATE, ADVERSE, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 1-NO ACTION.

Under No Action, no Federal ITT program would be implemented. The Commonwealth of Massachusetts has already implemented an ITT program for the LCMA OCC. This program would be unaffected, but would only apply to individuals that qualified and were issued trap tags by the Commonwealth. Assuming the Commission alternative for qualification and trap allocation were selected, any qualifying vessel from a state other than Massachusetts would be unable to take advantage of the economic flexibility that an ITT would offer. Similarly, since ITT programs have yet to be implemented for either LCMA 2 or 3 by the states, any qualifying vessel would be constrained by its initial allocation of traps and would be unable to take advantage of the economic opportunities that an ITT program would provide. This alternative would not provide any mitigation for the Addendum XVIII trap cuts that could be implemented by the states, which could be expected to negatively impact the profitability of lobster businesses and restrict their flexibility to respond and compensate for external economic pressures.

Alternative 2 – Commission Alternative

MODERATE, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 2-COMMISSION ALTERNATIVE.

In addition to the measures common to all ITT alternatives, this alternative would include elements unique to each LCMA. The OCC ITT calls for a cap of 800 traps, a 10 percent conservation tax, and a requirement to remove all traps from the water from January 15th to March 15th. This alternative would leave the design of an ITT for LCMA 2 up to each state with the provision to implement a 10 percent conservation tax and a cap of 800 traps. The LCMA 3 ITT would implement 10 percent conservation tax for transfers, and would cap each permit at 1,945 traps and limit ownership to a maximum of 5 LCMA 3 permits. The Commission has recently adopted changes to the allowable level of LCMA 2 and LCMA 3

traps a permit holder may own. However, those new elements of the Commission Plan were adopted too recently to be analyzed in this FEIS and are being considered in a separate Federal action.

The particular ITT design elements for each LCMA are tailored to the economic objectives among LCMA participants. As such they may be expected to have higher positive economic benefit compared to other ITT alternatives from the perspective of fishery participants. However, administering and monitoring three different ITT programs for EEZ permit holders would be the most costly among all considered ITT alternatives. Further complicating administration of an ITT under the Commission alternative is the fact that the creation of an ITT program within an LCMA is left up to each state to develop. This creates considerable uncertainty over the timing of implementation and the manner in which provisions of an ITT program across states may differ.

Alternative 3 – LCMA 3 Only

MINOR, ADVERSE, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 3-LCMA 3-ONLY.

This alternative would implement an ITT program in LCMA 3 only, with provisions that are simplified from that of the Commission alternative. Specifically, all transfers would be subject to a uniform 10% tax regardless of how many traps either the seller or buyer possessed. This alternative would preserve the essential economic benefits that would come with an ITT, but would do so on a smaller scale and at a lower administrative cost. Finally, this alternative would not affect dual permit holders from Massachusetts fishing in the LCMA OCC, since the state has already implemented an ITT program. Similar to Alternative 1-No Action, this alternative would limit the economic flexibility of non-LCMA 3 businesses to respond to business impacts, such as the trap cuts outlined in Addendum XVIII.

Alternative 4 – Optional ITT Program

MODERATE-TO-MAJOR, BENEFICIAL, LONG-TERM, INDIRECT ECONOMIC IMPACTS WOULD BE EXPECTED UNDER ALTERNATIVE 4-OPTIONAL ITT PROGRAM.

This alternative preserves many of the features that would generate positive economic benefits similar to that of the Commission's ITT alternative. The economic benefits of this alternative may be even greater than that of the Commission alternative since this alternative is designed to better sync, or link up, Federal/state requirements for dual permit holders. Some reduction in realized economic benefits may result under this alternative since trades would not be immediately effective. However, this provision is likely to result in some programmatic cost savings since trap tags would only need to be reissued during the fishing year and would facilitate a full accounting of trap allocations at only one time each year. Any potential loss in economic flexibility may be more than offset by the potential to expand the opportunity to have an ITT program.

Finally, under this alternative, it is unlikely that traps caps would be necessary to avoid the accumulation of market power. As was mentioned above, NMFS believes that trap caps are not so much an economic issue as perhaps an effort on the part of the Commission to achieve some social objectives with regard to ITT and the concentration of industry participation amongst a few industry players. Monopoly or market power comes from the ability to achieve a non-transient increase in the market price by withholding supply. Given the fact that the overwhelming majority of lobster landings come from LCMA 1 and the large amount of imported lobster from Canada, the ability to exert enough control of the total supply of lobsters is not likely to emerge. The Commission has adopted new addenda to its Lobster Plan that attempt to curtail the excessive consolidation of effort within an LCMA and NMFS is analyzing these measures in a separate action (see Chapter 2.0-*Other Relevant Addenda*, Addenda XXI and XXII).

4.6 Social Impacts

The social impact analysis provided below examines the potential social and cultural impacts of the proposed limited access and ITT measures on the affected fishing communities identified earlier in Chapter 3.

4.6.1 Background

Under NEPA, Section 40 CFR 1508.14, "[if] economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all these effects on the human environment." For this analysis, the social environment is defined to include the basic attributes and resources associated with the human environment, including demographic data at the local, county and state levels, such as population, ethnicity, education, age and other broad cultural indicators, as identified in Chapter 3. The communities evaluated include those identified in Table 3.10.

In addition, EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that Federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. The provisions of EO 12898 require that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the adverse environmental consequences resulting from industrial, municipal, and commercial operations; or the execution of Federal, state, tribal, and local programs and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity where a Project would occur. The demographic data presented in Section 3.3, Table 3.10 is used to consider consistency with the intent of EO 12898. NMFS notes that the data presented, while best available, does not have strong resolution to identify in a quantitative manner potential impacts under EO 12898. Qualitatively, however, NMFS does not believe that the proposed limited access and ITT measures will result in groups of people or socioeconomic groups bearing a disproportionate share of the adverse environmental consequences, primarily for two reasons: 1) because (as has been stated throughout the FEIS) future participation within the lobster fishery under the proposed measures will be based on historic fishing practice (i.e., anyone who can show a defined history of fishing for lobster will still be able to fish under the new measures) and, 2) the data that is available, while limited in resolution, supports this finding.

4.6.2 Methodology

NMFS guidance recommends that the following factors be addressed in the social impact analysis:

- The size and demographic characteristics of the fishery-related work force residing in the area;
- The attitudes, beliefs, and values of fishermen, fishery-related workers, and other stakeholders;
- The social structure and organization of the affected community, including effects on the ability of jurisdictions to provide support and services to families and communities;
- Life-style, health, and safety impacts, as well as non-consumptive and recreational uses of marine resources; and
- The historical dependence on and participation in the fishery, reflected in structural changes in fishing practices, income distribution, and rights.

The approach taken for this EIS is consistent with this guidance.

LCMA OCC Alternatives Analysis

Table 4.6 - LCMA OCC Comparison of # Elected vs # Qualified by MA County - 2012

2012				
	# Elected	% of total	# Qualified	% of total
Barnstable	28	93%	20	83%
Bristol	0	0%	0	0%
Dukes	0	0%	0	0%
Essex	0	0%	0	0%
Hampshire	0	0%	1	4%
Middlesex	0	0%	0	0%
Nantucket	1	3%	1	4%
Norfolk	1	3%	2	8%
Plymouth	0	0%	0	0%
Suffolk	0	0%	0	0%
Worcester	0	0%	0	0%
Total	**30**		**24**	

Chart 4.1 - LCMA OCC Comparison of # Elected vs # Qualified by MA County – 2012

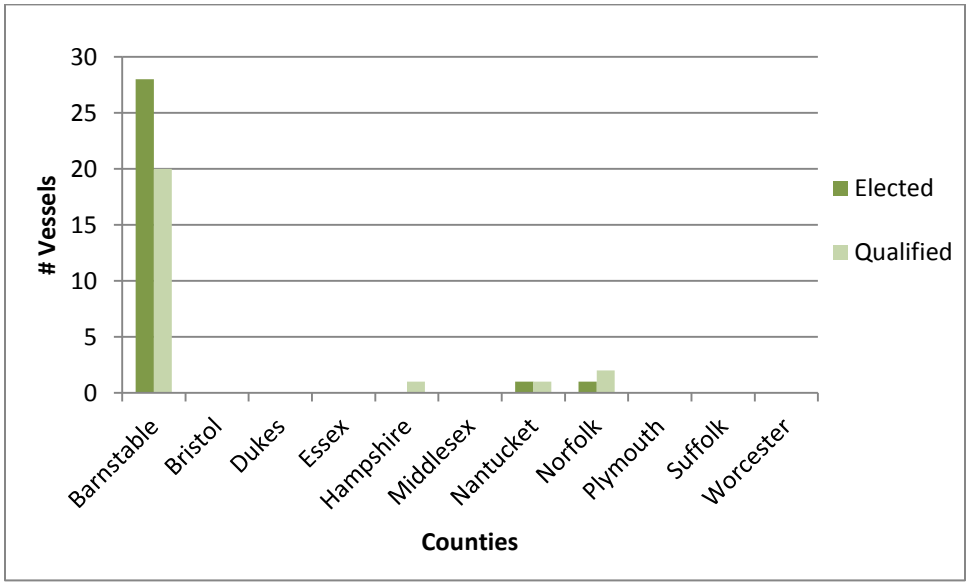


Table 4.6, above, compares the number of vessels electing to fish under the status quo to the number of vessels qualified under a limited-access program for the LCMA OCC by Massachusetts County (2012 data). Important to consider is that, because these vessels were qualified based on prior fishing history (see discussion in Chapters 2 & 4, above), the effect of moving from the status quo (those "electing" to fish) to a limited-access program is primarily one of more accurate accounting. While the results thus show that for some counties there has been a significant drop "on paper" in the number of vessels with access to the federal fishery under the proposed limited-access measures, the impact on those who

historically have actually been fishing for lobster is neutral in that their access to the fishery will remain unchanged.

That said, based on the results from Table 4.6, total participation for Massachusetts in the Federal LCMA OCC fishery drops from 30 vessels, largely based in Barnstable County, to 24 vessels, all (with the exception of 4) based in Barnstable County. As a percentage of the total, Barnstable County drops from 93% to 83%.

NMFS has identified OCC LAP Alternative 2-Commission Alternative as the Preferred Alternative in this FEIS. Potential impacts on the social environment were not a determinative factor in choosing Alternative 2 as the Preferred Alternative for the reasons that follow. Because all of the alternatives considered for the LCMA OCC limited-access program will have a neutral impact on those historically participating in the fishery, NMFS believes that the social impact (based on the parameters outlined in Table 3.10) will be neutral. At the same time, NMFS recognizes the possibility that there may be fishers who want to fish in the LCMA, but have no history, and who will therefore be denied future access under a Limited Access program (unless they participate through an ITT program, should one be implemented). Nonetheless, for those fishers who have historically fished the LCMA, increased certainty over eligibility to fish and the number of traps that may be fished may increase the effectiveness, timeliness, and transactions costs associated with managing the LCMA OCC lobster trap fishery, resulting in an improved economic environment that will also have social benefits for the affected communities. On balance, therefore, NMFS concludes that the social impacts will be ***neutral***, with the potential for some beneficial impacts as a result of improved economic conditions.

LCMA 2 Alternatives Analysis

Table 4.7 - LCMA 2 Comparison of # Elected vs # Qualified by MA County – 2012

2012				
	# Elected	**% of total**	**# Qualified**	**% of total**
Barnstable	4	8%	4	6%
Bristol	15	31%	24	39%
Dukes	20	42%	24	39%
Essex	0	0%	0	0%
Hampshire	0	0%	0	0%
Middlesex	0	0%	0	0%
Nantucket	1	2%	1	2%
Norfolk	0	0%	1	2%
Plymouth	8	17%	7	11%
Suffolk	0	0%	0	0%
Worcester	0	0%	0	0%
Outliers	0	0%	1	2%
Total	**48**		**62**	

Chart 4.2 - LCMA 2 Comparison of # Elected vs # Qualified by MA County – 2012

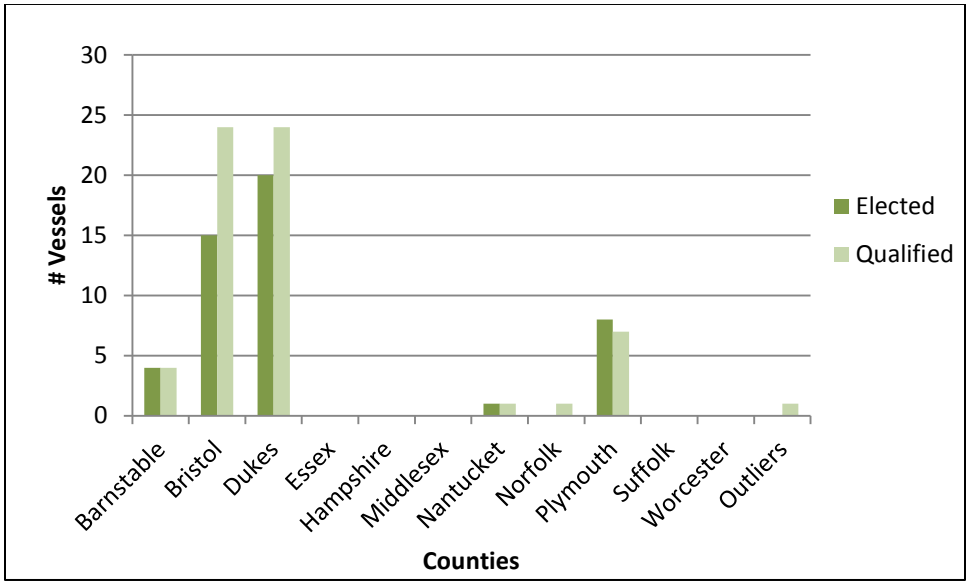


Table 4.7, above, compares the number of vessels electing to fish under the status quo to the number of vessels qualified under a limited-access program for the LCMA 2 by Massachusetts County (2012 data). As discussed under the LCMA OCC analysis, above, while the results show that for some counties there has been a significant change "on paper" in the number of vessels with access to the federal fishery, the impact on those who historically have been fishing for lobster is **neutral** in that their access to the fishery under the proposed limited-access measures will remain unchanged.

Based on the results from Table 4.7, total participation for Massachusetts in the Federal LCMA 2 fishery increases from 48 vessels--largely based in Bristol, Dukes, and Plymouth Counties--to 62 vessels--primarily based in Bristol, Dukes, and Plymouth Counties. As a percentage of the total, Dukes County drops from 42 to 39 percent, while Bristol County increases from 31 to 39 percent. The number of vessels for Plymouth County as a percentage of the total also drops, from 17 to 11 percent when comparing status quo to a limited-access program.

Table 4.8 - LCMA 2 Comparison of # Elected vs # Qualified by RI County – 2012

2012				
	# Elected	% of total	# Qualified	% of total
Bristol	2	2%	4	3%
Kent	2	2%	10	8%
Newport	23	25%	33	27%
Providence	1	1%	2	2%
Washington	63	69%	73	60%
Outliers	0	0%	0	0%
Total	**91**		**122**	

Chart 4.3 - LCMA 2 Comparison of # Elected vs # Qualified by RI County – 2012

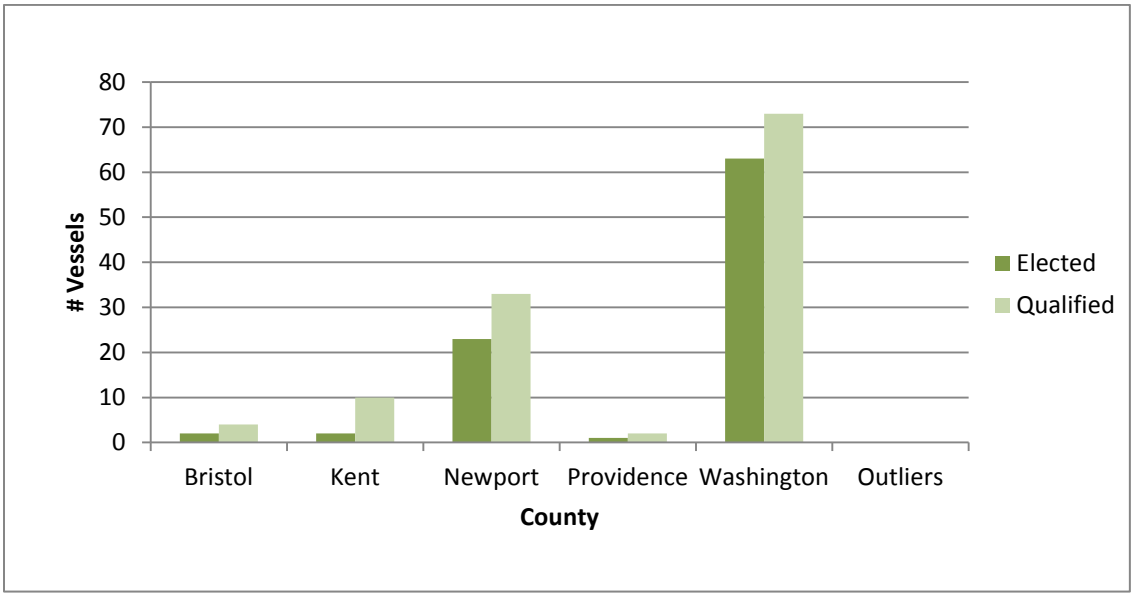


Table 4.8, above, compares the number of vessels electing to fish under the status quo to the number of vessels qualified under a limited-access program for the LCMA 2 by Rhode Island County (2012 data). As with Massachusetts (discussed above), the impact on those who historically have been fishing for lobster is neutral in that their access to the fishery under the proposed limited-access measures will remain unchanged.

Based on the results from Table 4.8, total participation for Rhode Island in the Federal LCMA 2 fishery increases from 91 vessels, largely based in Washington and Newport Counties, to 122 vessels, also largely based in Washington and Newport Counties. In fact, representation across all Rhode Island counties as a percentage of the total remains relatively stable when shifting from the status quo to a limited-access program.

Table 4.9 - LCMA 2 Comparison of # Elected vs # Qualified by NY County – 2012

2012				
	# Elected	% of total	# Qualified	% of total
Bergen	0	0%	0	0%
Bronx	0	0%	0	0%
Essex	0	0%	0	0%
Kings	0	0%	0	0%
Nassua	0	0%	0	0%
Rockland	0	0%	0	0%
Suffolk	8	100%	3	100%
Westchester	0	0%	0	0
Outliers	0	0%	0	0
Total	**8**		**3**	

Chart 4.4 - LCMA 2 Comparison of # Elected vs # Qualified by NY County – 2012

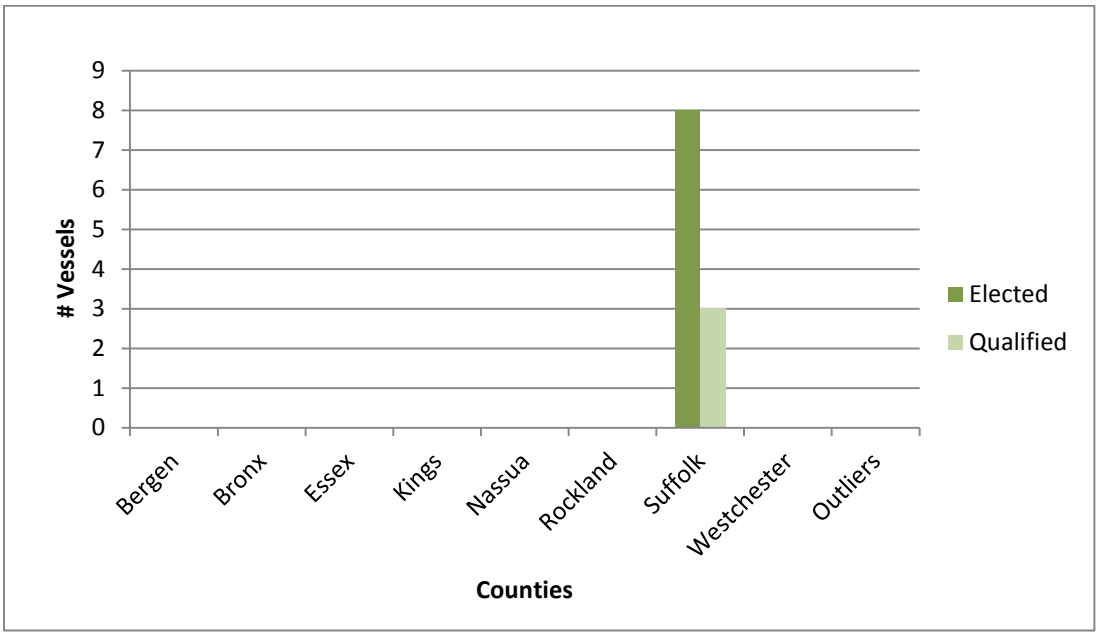


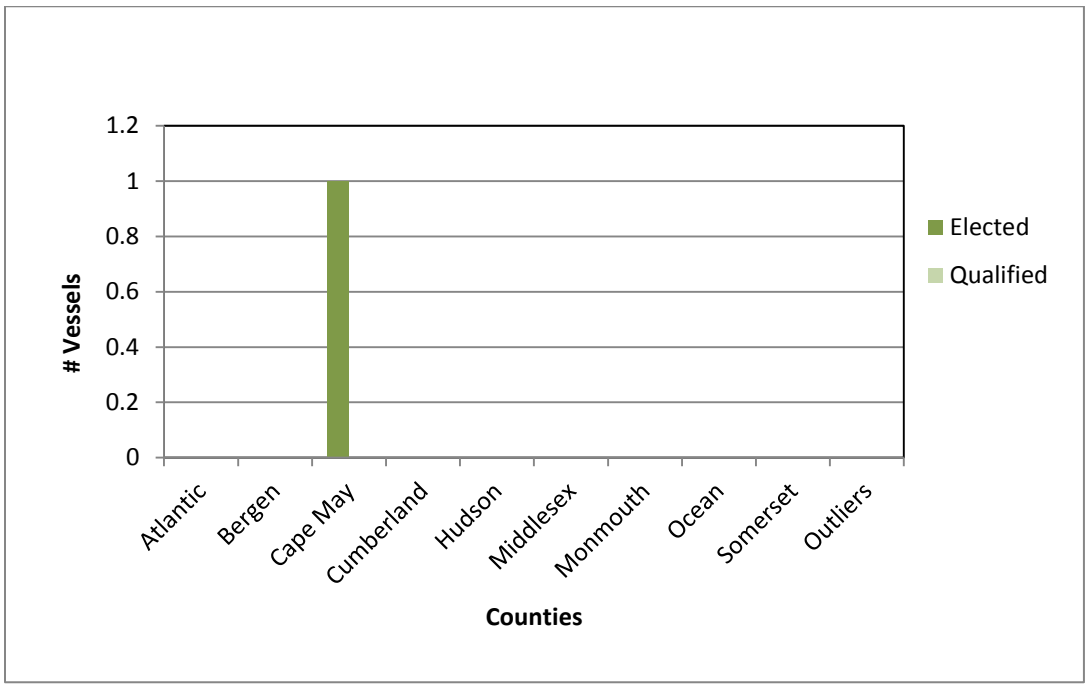
Table 4.9, above, compares the number of vessels electing to fish under the status quo to the number of vessels qualified under a limited-access program for the LCMA 2 by New York County (2012 data). As with the other states (discussed above), the impact on those who historically have been fishing for lobster is neutral in that their access to the fishery under the proposed limited-access measures will remain unchanged.

Based on the results from Table 4.9, total participation for New York in the Federal LCMA 2 fishery drops from 8 vessels, largely based in Suffolk County, to 3 vessels, all of which are located in Suffolk County.

Table 4.10 - LCMA 2 Comparison of # Elected vs # Qualified by NJ County – 2012

2012				
	# Elected	% of total	# Qualified	% of total
Atlantic	0	0%	0	0%
Bergen	0	0%	0	0%
Cape May	1	100%	0	0%
Cumberland	0	0%	0	0%
Hudson	0	0%	0	0%
Middlesex	0	0%	0	0%
Monmouth	0	0%	0	0%
Ocean	0	0%	0	0%
Somerset	0	0%	0	0%
Outliers	0	0%	0	0%
Total	1		0	

Chart 4.5 - LCMA 2 Comparison of # Elected vs # Qualified by NJ County 2012



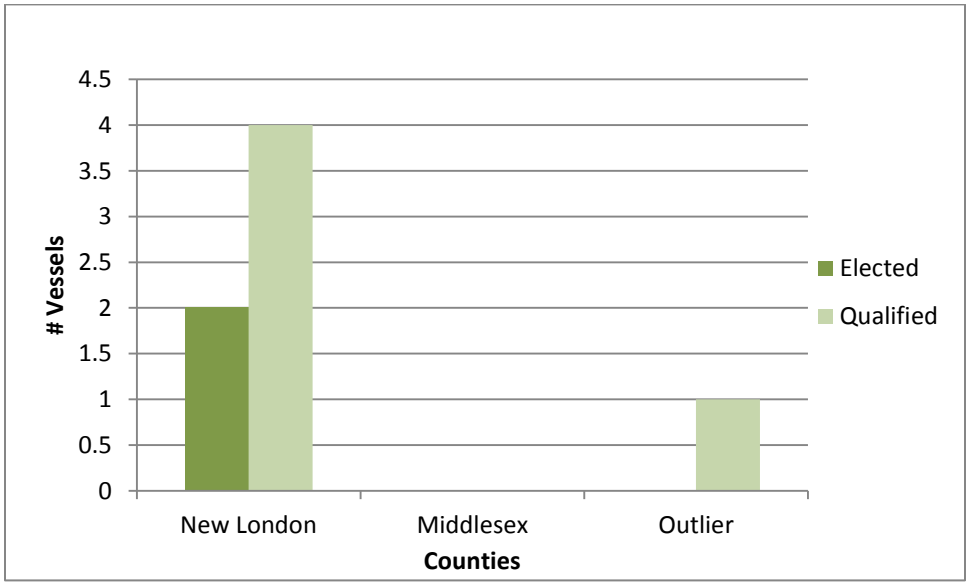
Connecticut and New Jersey

Relative to Massachusetts and Rhode Island, the states of Connecticut and New Jersey (as well as New York), do not have a strong presence in LCMA 2. For Connecticut, only 2 elected to fish in 2012 and under alternatives 2 and 3, only 5 would qualify. Again, as with the other states discussed above, the impact on fishers from Connecticut and New Jersey who historically have been fishing for lobster is neutral in that their access to the fishery under the proposed limited-access measures will remain unchanged.

Table 4.11 - Comparison of # Elected vs # Qualified by CT County – 2012

2012				
	# Elected	**% of total**	**# Qualified**	**% of total**
New London	2	100%	4	80%
Middlesex	0	0%	0	0%
Outlier	0	0%	1	20%
Total	**2**		**5**	

Chart 4.6 - Comparison of # Elected vs # Qualified by CT County - 2012



NMFS has identified LCMA 2 LAP Alternative 2-Commission Alternative as the Preferred Alternative in this FEIS. Potential impacts on the social environment were not a determinative factor in choosing Alternative 2 as the Preferred Alternative for the following reasons. As with the LCMA OCC analysis, above, all of the alternatives considered for the LCMA 2 limited-access program will have a neutral impact on those historically participating in the fishery. At the same time, NMFS recognizes the

possibility that there may be fishers who want to fish in the LCMA, but have no history, and who will therefore be denied future access under a Limited Access program (unless they participate through an ITT program, should one be implemented). Nonetheless, for those fishers who have historically fished the LCMA, increased certainty over eligibility to fish and the number of traps that may be fished may increase the effectiveness, timeliness, and transactions costs associated with managing the LCMA 2 lobster trap fishery, resulting in an improved economic environment that will also have social benefits for the affected communities. On balance, therefore, NMFS concludes that the social impacts (based on the parameters outlined in Table 3.10) will be ***neutral***, with the potential for some beneficial impacts as a result of improved economic conditions.

ITT Alternatives Analysis

Those American Lobster permit holders who qualify under the proposed limited-access alternatives identified above represent the universe of "sellers" under an ITT program. Because "selling" or "buying" trap allocations is a discretionary action, it is unknown how many individuals would choose to participate in an ITT program and what that would mean in terms of altering the geographic representation for the fishery, as detailed above and in Chapter 3. Without knowing this, it is not possible to even speculate on what the impacts of an ITT program ultimately would be to the affected communities as measured by the demographic parameters outlined in Table 3.10.

What can be said, qualitatively, is that with an ITT program, economic flexibility for permit holders is greatly increased because it creates the opportunity for fishers to respond to inadequate trap allocation by obtaining additional allocation from other fishers who may want to scale down their own business or leave the fishery. In general, this added flexibility will have a positive impact on social "well-being," since, for example, those permit holders who want to retire or otherwise leave the fishery will have more opportunity (and fewer economic disincentives) to do so, while others who want to increase their participation in the fishery will also have more opportunities to do so. Without an ITT program, these options will not exist for permit holders and those individuals will be locked in to their permit allocations. Under these circumstances, and where Limited Access is in place, fishers will bear the restrictions that come with capping effort, while receiving none of the benefits that come with greater economic freedom to optimize their business.

Based on this, NMFS believes that the direct social impacts from Alternative 1, No Action, will be *major, long-term, and adverse*, while those associated with the proposed ITT alternatives would be *major, long-term, and beneficial.*

Chapter 5 – Cumulative Impacts

CUMULATIVE IMPACTS CHAPTER 5

5.0 Introduction

CEQ regulations implementing NEPA define cumulative impacts as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." (40 CFR 1508.7) Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time within a geographic area. All of the alternatives evaluated in this FEIS (limited access programs in LCMAs OCC and 2 and an ITT program for LCMAs OCC, 2 and 3) are evaluated below for their potential to produce cumulative impacts on the biological and human environments.

This chapter describes the following key components relative to the potential cumulative impacts of the effort control management alternatives for American Lobster.

- Section 5.1 describes the geographic and temporal boundaries for the analysis;
- Section 5.2 describes the past, present, and reasonably foreseeable cumulative actions within these boundaries;
- Section 5.3 describes the potential cumulative impacts by issue and resource area, including impacts on the regulatory environment, lobster, protected species, bait fish and by-catch species, and the economic and social environment. Potential cumulative impacts are identified by evaluating the combined effect on these issues and resource areas of past, present, and future lobster-and non-lobster related actions within the appropriate geographic boundaries, defined below.

5.1 Geographic and Temporal Boundaries

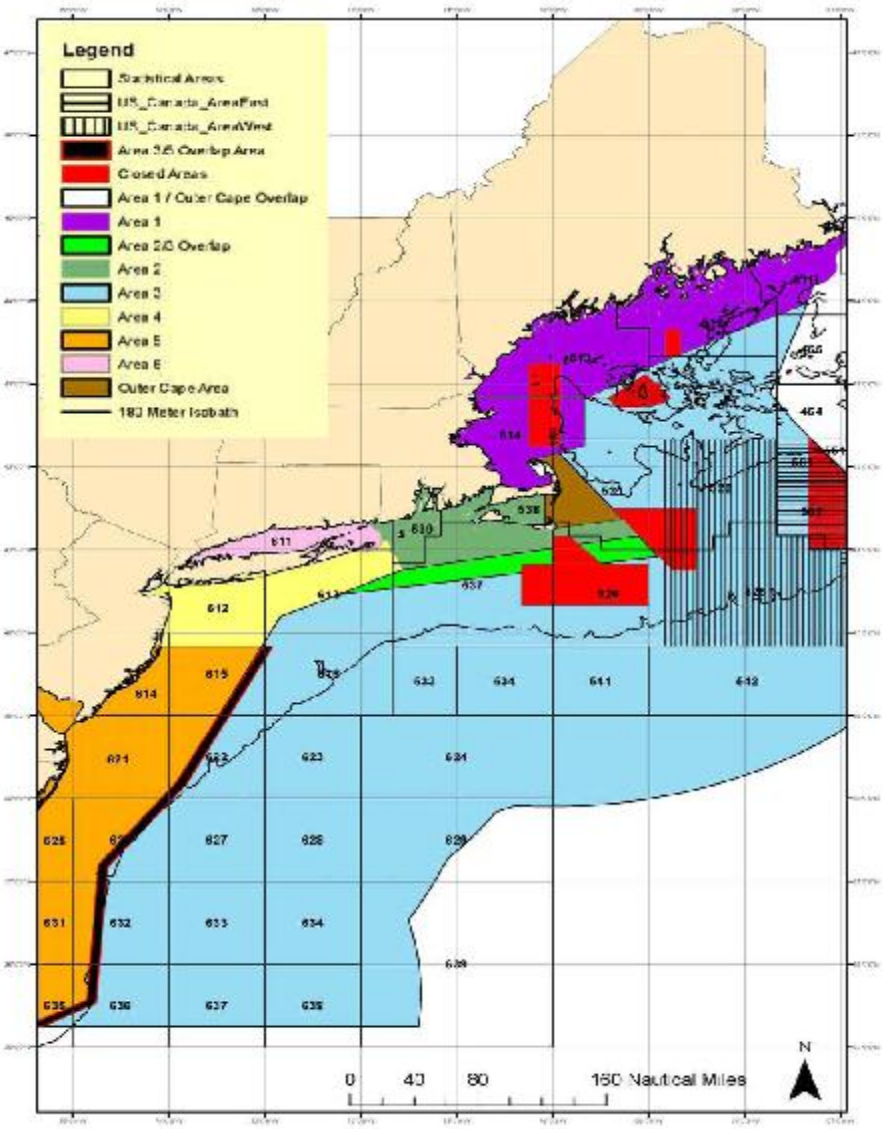
For purposes of this analysis, the geographic boundaries for biological resources encompass Federal waters of all American Lobster LCMAs from Maine to North Carolina. Geographic boundaries for the human environment encompass the affected fishing communities as identified in Ch 3 (Section 3.3). The time period considered for this analysis extends from 1997-- the year that Amendment 3 to the American Lobster ISFMP establishing the framework for area management was first established—to 2018 (approximately 5 years into the future). This period was chosen because of the relatively high frequency with which the Commission's lobster management board adopts new addenda to the ISFMP; while new addenda are a virtual certainty, their details beyond a 5-year time horizon cannot be predicted and thus their effects on the biological and human environments associated with lobster management are unknown.

5.2 Past, Present, and Reasonably Foreseeable Cumulative Actions

Federal waters that comprise the American lobster fishery also support many other non-lobster related activities. Multiple Federal jurisdictions oversee these activities, the boundaries of which oftentimes overlap and cover a vast amount of the Outer Continental Shelf (OCS) area. The discussion below provides an analysis of the range of actions taking place within the geographic boundaries for this cumulative impact analysis and briefly identifies their cumulative impact on lobster-related resources. Quantitative information to characterize these impacts is not available; qualitative conclusions are provided, however, to the extent possible. For purposes of this analysis, the activities considered generally fall into the following broad categories: lobster fishery management actions; non-lobster fishery

management actions, and commercial and industrial development actions. These are discussed in turn, below.

Figure 5.1 - American Lobster Biological Stock Units and Management Areas



5.2.1 Lobster Fishery Management Actions:

Past and present Federal management actions for the American Lobster fishery were discussed in detail in Chapters 1 and 3 and are incorporated by reference here; please refer to those chapters for this background. Other reasonably foreseeable lobster-related management actions are as follows:

- *Biological measures and effort control measures in Southern New England lobster stock area:* NMFS published an Advanced Notice of Proposed Rulemaking (ANPR) on August 20, 2013 (78 FR 161) that would address the Southern New England lobster recruitment failure by considering

several biological measures recommended by the Commission through Addendum XVII and XVIII. The Technical Committee's report on *Recruitment Failure in the Southern New England Lobster Stock* (ASMFC 2010) indicated that the SNE stock is experiencing recruitment failure due to a combination of environmental factors and continued fishing mortality. To address this recruitment failure, the Lobster Board voted to approve Addendum XVII and XVIII. The management measures approved by the Commission through Addendum XVII would reduce lobster exploitation by 10 percent, and reduce lobster trap fishing effort in the Southern New England stock area. Biological measures adopted in Addendum XVII were LCMA-specific, to include more stringent v-notching requirements, new minimum carapace length size, and seasonal closures. Addendum XVIII was adopted by the Commission as a second phase of management measures to address the Southern New England stock recruitment failure through trap reductions in LCMAs 2 and 3. Addendum XVIII requires LCMA 2 allocations to be reduced by 25 percent in the first year of trap cuts, and by 5 percent each year thereafter for a 5-year period. LCMA 3 trap allocations are to be reduced by 5 percent each year for a 5-year period.

- *Modifications to the trap transferability program in LCMAs 2 and 3:* In February 2013, the Commission approved Addendum XIX to the Lobster Plan, which modifies the ITT conservation tax in LCMA 3 to 10 percent for full and partial business transfers. NMFS's final rule will implement the 10 percent conservation tax in LCMA 3. The Commission also approved Addendum XXI to the Lobster Plan on August 9, 2013, which modifies the trap transferability program in LCMAs 2 and 3. Participants in LCMAs 2 and 3 trap transferability program would be able to retain trap fishing rights for all LCMAs for which their purchased traps have qualified. NMFS will implement multi-LCMA trap transfers in this final rule. LCMA 2 will have a single ownership cap of 1,600 traps, 800 banked traps and 800 active traps. This trap cap is effective until two years following the last LCMA 2 trap cuts (refer to Addendum XVIII). If a single entity in LCMA 2 owned more than 2 permits on or before December 2003, they may retain that number of permits, but cannot obtain additional permits in the future. LCMA 3 permit holders would have an active trap cap of 2,000 traps, to be reduced over a 5-year period -- due to LCMA 3 trap reductions--by 5 percent each year to 1,548 traps. The Commission also approved Addendum XXII to the Lobster Plan on October 28, 2013, which further modifies the trap transferability program in LCMA 3. Addendum XXII considers single and aggregate ownership caps in LCMA 3. NMFS is in the process of implementing a trap transferability program in LCMAs 2, 3, and the OCC LCMA. However, most modifications to the trap transferability program outlined in Addendum XXI and Addendum XXII were not analyzed in this EIS, so a separate action may be considered at a future date in order to address these modifications.

Biologically, these actions have a positive cumulative impact on the American Lobster species; broodstock measures (such as those described above) combined with effort control measures (such as those evaluated in the EIS) are meant to increase the fishery population in the long term. At the same time, NMFS recognizes that the many lobster management measures that have been advanced through regulation have cumulatively placed tighter restrictions on the regulated industry and this has had short- and long-term adverse social and economic impacts that have been balanced against the need to protect the fishery population.

5.2.2 Non-Lobster Fishery Management Actions

Fishery Management Plans (FMPs) for Numerous Fisheries: Within the geographic boundaries for this analysis, numerous commercial fisheries share ocean space with the American Lobster fishery and are Federally regulated in accordance with individual FMPs targeted at species or categories of fish. The majority of these fisheries fall under the purview of either the New England or Mid-Atlantic Fishery

Management Councils (NEFMC and MAFMC, respectively), or the Atlantic States Marine Fisheries Commission (Commission) which have developed FMPs to promote the long-term health and stability of the managed fisheries. These FMPs are as follows:

- NEFMC: NE Multispecies (large mesh/groundfish), Sea Scallop, Monkfish, Atlantic Herring, NE Multispecies (small mesh/whiting), Dogfish, Deep-sea Red Crab, Northeast Skate Complex, Atlantic Salmon.

- MAFMC: Atlantic Mackerel, Squid and Butterfish, Bluefish, Dogfish, Surfclam and Ocean Quahog, Summer flounder, Scup & Black Sea Bass, Tilefish, Monkfish.

- ASMFC: Atlantic Striped Bass, Summer Flounder, Scup, Black Sea Bass, Shad and River Herring, American Eel, Bluefish, Spiny Dogfish and Coastal Sharks, and Horseshoe Crab.

In addition, FMPs are in place for certain highly migratory species (HMS) that cover the same geographic area for this analysis. These HMSs include tuna, swordfish, sharks, and billfish.

The objectives of these plans vary, but generally seek to achieve the long-term sustainability of the fishery while meeting certain management goals for the commercial fishing industry. Since the 1980s, FMPs have largely applied management techniques such as geographic and seasonal fishery closures, catch limits and quotas, size and age limits, gear restrictions, and access controls to manage targeted species. More recently, sector management in the groundfish fishery has been advanced as a new approach to managing the commercial fishing industry. This approach allows for a self-selected group of fishers to form a sector and submit a binding operations plan for management of that sector's allocation of catch or effort within a given fishery (see more detailed discussion of Sector Management, below).

In general, the biological concerns for lobster raised by these FMPs are twofold. First, some of these management plans target predator and prey species for lobster, while others target bait and by-catch species and these ecological relationships need to be identified and reflected in the various plans. In theory, fluctuations in population for those species may indirectly affect (positively or negatively, depending) American Lobster. (Of course, the inverse of this is also true: fluctuations in the lobster population may indirectly affect predator/prey species.) Second, each of these management plans contain management restrictions that must be complied with by the regulated industry; for the dual permit holder who holds a lobster permit and who may feel "squeezed" or "shut out" of one of these other fisheries, there may be increased incentive to shift more effort onto the lobster fishery.

Marine Mammal Program: NMFS's Marine Mammal Program is dedicated to protecting whales, dolphins, porpoises, seals and sea lions from harm caused by human activities. The program carries out the mandates of the Marine Mammal Protection Act of 1972, namely to conserve healthy populations and to rebuild (or "recover") populations that are strategic. As discussed in previous chapters (see Chapter 3), marine mammals are relevant to the lobster fishery because of their susceptibility to entanglement from lobster trap gear, particularly vertical lines that link the bottom-tending trap to the surface line buoys.

Of the large whale species that occur within the geographic boundaries for this analysis, the North Atlantic right whale is the most endangered and has been listed as such under the Endangered Species Act (ESA) since the passage of that Act in 1970. Most recent estimates indicate that the North Atlantic right whale population is composed of approximately 396 individuals (Waring et al. 2011). During the late 1800s and early 1900s, right whales were heavily targeted by commercial whalers. Although right whales have been protected from commercial whaling worldwide since 1935, right whale stocks are still extremely depleted (59 FR 28793). Vessel collisions and entanglement in fishing gear are believed to have directly and significantly hindered the recovery of this species (NMFS 2005a, Watkins 1986).

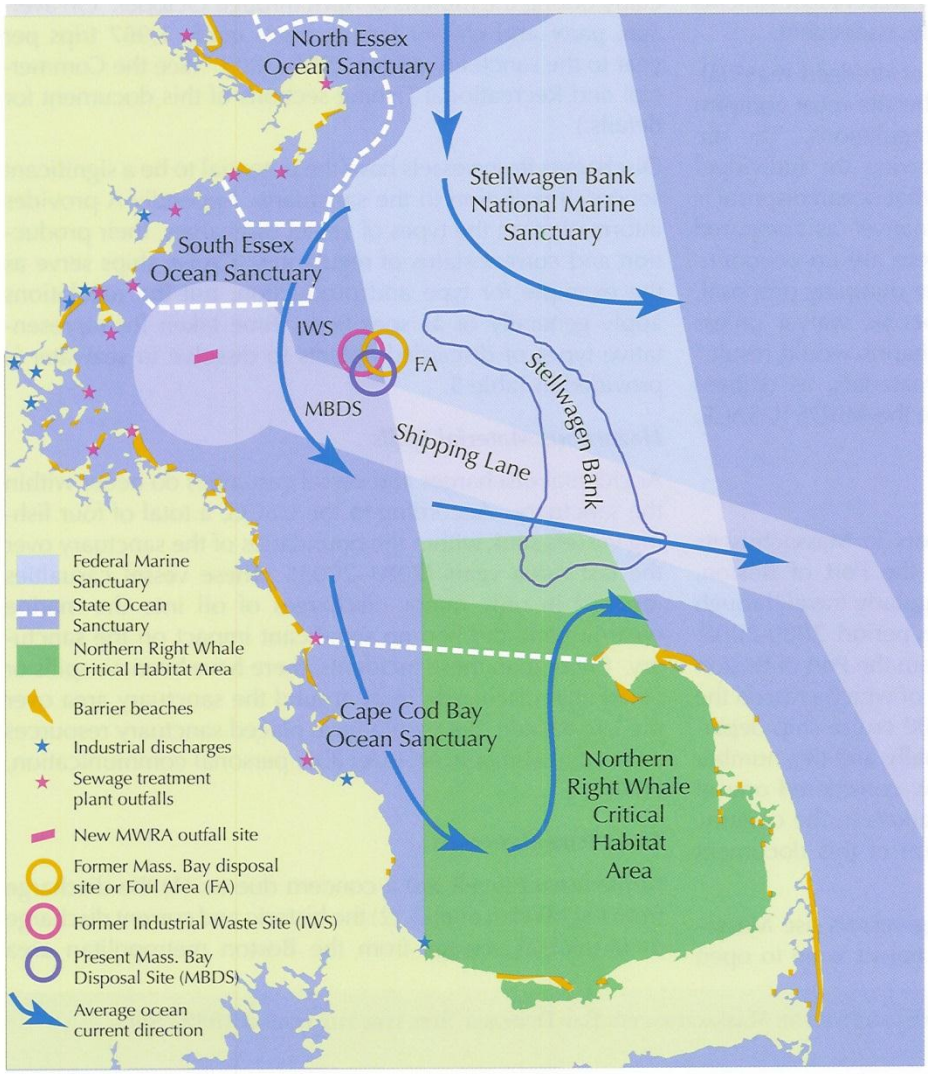
Population modeling exercises by NMFS indicate the loss of a single individual could have a negative effect on the survival of the species. As a result, NMFS has set a PBR value of zero for North Atlantic right whales. This means that the death of even one individual is above the acceptable limit and, should it occur, would be considered a long-term major adverse impact.

Atlantic Large Whale Take Reduction Plan (ALWTRP): Partly in response to the concerns described above, NMFS recently revised its Atlantic Large Whale Take Reduction Plan (ALWTRP). The ALWTRP is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial gillnet and trap/pot gear (e.g. American lobster). Since implementation of the ALWTRP in 1997, the National Marine Fisheries Service (NMFS) has modified the plan on several occasions to address the risk of entanglement in commercial fishing gear. One of the more recent amendments, finalized in October 2007, expanded the scope of the plan to regulate additional fisheries, established new gear modification and marking requirements, and implemented a number of other regulatory changes (72 FR 57104, October 5, 2007; 73 FR 19171, April 5, 2008). Most of these modifications are now in effect. The most recent final rule published in September 2008 (73 FR 51228) delayed the compliance schedule of the broad-based sinking groundline requirement in the trap/pot fishery by 6 months to an effective of April 5, 2009. The estimated increase in annualized ALWTRP compliance costs for the lobster trap/pot fishery based on these modifications is $12,288,000 (NMFS, 2007). Vessels operating in Southern near-shore waters (LMCAs 4, 5 and a portion of 6) would account for 64 percent of compliance costs; vessels operating in Offshore waters (LCMAs 3, 2/3 Overlap, 3/5 Overlap) would account for 21 percent; those in Northern Inshore waters (states waters from Maine through Rhode Island) would account for 10 percent; and those in Northern near-shore waters (Federal waters of LCMAs 1, 2 and Outer Cape) would account for 6 percent. In coordination with the Atlantic Large Whale Take Reduction Team (ALWTRT), NMFS is also developing a strategy for additional reduction in entanglement risk caused by vertical lines. Whale distribution data is being used to help prioritize areas for implementation of future vertical line action(s)These data will be overlaid with the vertical line distribution data to look at the combined densities by area. A co-occurrence model was constructed to allow gear configurations to be manipulated and determine what impact reduction would have in vertical line densities. The co-occurrence model was reviewed by the ALWTRT subgroups in the Northeast, Mid-Atlantic, and Southeast, and received approval for its use as a tool to support NMFS's development of a vertical line strategy that will further minimize the risks of large-whale entanglement and associated serious injury and death. NMFS published a proposed rule in the Federal Register on July 16, 2013 (78 FR 42654), which considers six alternatives based upon the input from stakeholders during the public scoping process and team meetings to solicit ideas for a vertical line strategy. A final rule is expected in the fall of 2014.

Ship Strike Rule: In October, 2008, NMFS established regulations to implement speed restrictions of no more than 10 knots applying to all vessels 65 ft (19.8 m) or greater in overall length in certain locations and at certain times of the year along the east coast of the U.S. Atlantic seaboard. These regulations took effect in December, 2008, and are designed to reduce the likelihood of deaths and serious injuries to endangered North Atlantic right whales that result from collisions with ships.[138]

[138] (73 FR 60173, October 10, 2008)

Figure 5.2 - Locations of state and Federal Ocean Sanctuaries, the Cape Cod Right Whale Critical Habitat Area and the pattern of general ocean circulation of the area



Note: Also shows location of sewer outfalls, the MWRA outfall, industrial discharge sites and dumping/disposal sites within Massachusetts Bay. (source: MWRA, 2004)

Essential Fish Habitat (EFH) Program & EFH Omnibus Amendment: Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.), Congress mandated the identification of habitats essential to species managed under the MSA[139], along with measures to conserve and enhance this habitat. Under the MSA, Congress directs NMFS and the eight regional Fishery Management Councils (under the authority of the Secretary of Commerce) to describe and identify EFH in each fishery management plan (FMP); minimize, to the extent practicable, the adverse effects of fishing on EFH; and identify other actions to encourage the conservation of EFH.

[139] It is important to note that, because the American Lobster Fishery is managed under the Atlantic Coastal Act and not the MSA, EFH requirements do not apply to lobster. Also, NMFS makes recommendations under the EFH provisions of the MSA not only with regard to commercial fishing activities, but on non-fishing activities, such as industrial development projects, etc, that could adversely EFH-protected habitat areas.

EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Fishing activity and gear can directly affect EFH through reductions in density of both target and non-target species and through damage to geological structures (sediments, outcrops) and biological organisms (sponges, tube-dwellers). Indirect impacts result from removing keystone predators, altering nutrient cycles, decreasing primary productivity, and changing sediment characteristics and transport mechanisms.[140]

From a cumulative standpoint, it is difficult to measure the extent of impacts on fish habitat that are related to commercial fishing, but it is intuitive that fishing activity has caused short- and long-term, direct and indirect adverse impacts on EFH within U.S. commercial fishing waters.

Phase 2 of the Omnibus EFH Amendment is considering the effects of fishing gear on EFH and moves to minimize, mitigate or avoid those impacts that are more than minimal and temporary in nature. Further, Phase 2 is reconsidering closures put in place to protect EFH and groundfish mortality in the Northeast Region. This Amendment is expected to be implemented in 2015. The EFH Omnibus Amendment is expected to provide additional habitat protections and therefore may have an indirect positive effect on the lobster population, as they would also receive protection.

Sector Management: 2010 marked the first year of full scale sector management in the groundfish fishery. In 2013, over 60 percent of eligible northeast groundfish multispecies permits and approximately 99 percent of the Annual Catch Limit (ACL) for the entire fishery were enrolled in sectors.

It was uncertain at the time of sector implementation and quota cuts if groundfishermen would redistribute effort into the lobster fishery. As detailed in the 2013 Sector Operations and Contracts Environmental Assessment (NMFS, April 2013) data from the first two years under sector management show lobster vessels with a small groundfish allocation enrolling in sectors. Thirty three sector vessels landed mostly lobsters in FY 2010 while 51 sector vessels landed mostly lobsters in FY 2011. Of the 51 lobster vessels in sectors in FY 2011, 16 were not in a sector the previous year but were lobster vessels in either FY 2010 or FY 2009. Only five vessels enrolled in sectors switched from groundfishing FY 2010 to lobstering in FY 2011. As a result, much of the apparent increase in lobster effort by the groundfish fishery is due to lobster vessels enrolling in sectors, not due to sector vessels switching effort from groundfish into lobster.

Increased Water Temperature: The effects of climate change on lobster survival were discussed in Chapter 3, Affected Environment. One climatic factor, water temperature, may have the most influence on the viability of lobster stocks over the longer-term. As noted in Chapter 3, ocean water temperatures are increasing and those temperature increases are affecting lobster behavior, distribution, and physiology (New England Aquarium, 2013). Rising water temperatures in southern New England (SNE) are considered to be one factor responsible for the LIS lobster die-off in the late 1990s (Pearce and Balcom, 2005), and the increased incidence of shell disease (Glenn and Pugh, 2006). Further, a long-term warming trend in nearshore SNE waters since 1999 is identified as one of the environmental drivers responsible for the poor condition of the SNE lobster stock (ASMFC, 2010).

Given the results of the 2009 stock assessment showing a continued decline in the condition of the SNE lobster stock, the Commission's Lobster Technical Committee (TC) continued to monitor the status of the SNE stock. At the Commission's May 2010 Lobster Management Board meeting the TC presented a report on the status of the Southern New England (SNE) lobster stock. That report (ASMFC, 2010; APPENDIX 16) indicated that the SNE stock is critically depleted and well below the minimum threshold abundance. The report was based on the TC review of new data from trawl surveys, sea sampling,

[140] (Neptune FEIS, p. 3-47)

ventless trap surveys, and young of the year (YOY) indices, which became available after the most recent stock assessment in 2009. That previous assessment concluded that the stock's reproductive capability and abundance continued in a persistent downward trend, with abundance nearing the lowest levels since the early 1980's. In the report to the Commission's Lobster Board (Board) the TC declared that the SNE stock is experiencing recruitment failure due to a combination of environmental factors and continued fishing mortality, which are keeping the stock from rebuilding.

The TC's report characterized the many impediments to the rebuilding of the SNE stock which can, in part, be attributed to warming water temperatures. Water temperatures in the SNE nearshore waters have undergone a prolonged trend of warming since 1999, with temperatures exceeding 20 degrees Celsius for sustained periods (ASMFC, 2010). Crossin et al (2006, from ASMFC, 2010) found that lobster will avoid water temperatures of 19 degrees Celsius or higher, which may account for a trend in the years leading up to the TC's report of spawning females shifting from nearshore SNE waters to deeper waters. This distributional shift could restrict the supply of lobster larvae into nearshore areas, away from traditional larval settlement areas and into areas with potentially less favorable conditions for newly-settled lobster (ASMFC, 2010). Prolonged exposure at adverse temperatures can cause lobster to experience respiratory stress and compromised immune system function (Worden et al, 2006; Dove et al, 2005; Crossin et al, 1998; from ASMFC, 2010). The high temperatures can also result in hypoxic conditions (Draxler et al, 2005, from ASMFC, 2010) which can limit the extent of suitable lobster habitat. The shift in lobster abundance to deeper waters may increase the exposure of lobster discarded from fishing vessels to predators such as striped bass, scup, and spiny dogfish, species whose abundance has been on the rise (ASMFC, 2010).

The TC's report recommended a five-year moratorium on lobster fishing in SNE, as any additional fishing mortality would compromise stock rebuilding. The Board, with input from the industry LCMTs and affirmation from the TC, took action to address the poor condition of the lobster stock in two phases. First, the Board approved an addendum to the Lobster Plan adopting seasonal closures and mandatory v-notching of egg-bearing female lobster in the Nearshore SNE LCMAs, and by increasing the minimum legal carapace length of lobster harvested in the Offshore LCMA 3, as a means of reducing fishing exploitation by 10 percent. Second, the Board adopted a second addendum to limiting fishing effort in SNE through a series of trap reductions, including a 25-percent reduction in LCMA 3 over five years, and a 50-percent trap reduction in LCMA 2 over six years (see Chapter 1, Other Relevant Addenda).

Regardless of the management actions taken to address fishing exploitation on the depleted SNE lobster stock, continued increases in water temperatures in the Northeast Shelf Ecosystem could affect lobster distribution and physiology and could increase the incidence of shell disease, which could result in changes in the condition of the stocks in the future.

5.2.3 Non-Fishing Related Commercial and Industrial Development Actions

Many marine-dependent, non-fishing related activities taking place in both coastal and off-shore waters can contribute to cumulative impacts on lobster-related resources. For this discussion, the activities identified further below are ones that have the potential to effect Federal lobster-related resources (i.e., potential impacts occur beyond the 3-mile limit). At the same time, it is important to consider the impact that coastal and near-shore-area non-fishing activities can have on lobsters and their habitat because lobsters spend a significant portion of their life-cycle in these areas.

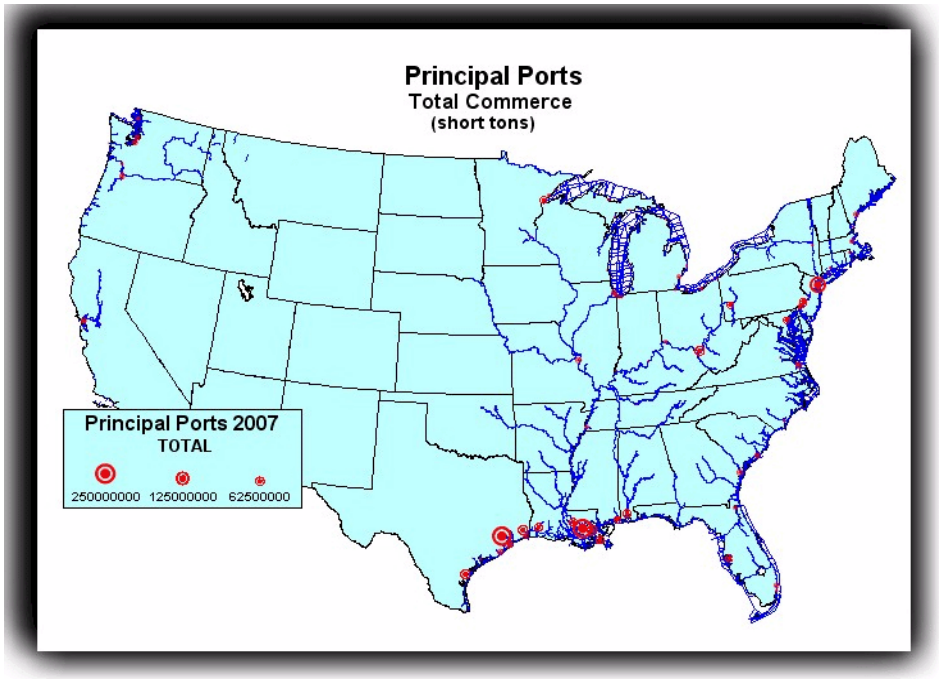
Coastal areas in general attract construction and development activities, which in turn contribute to cumulative impacts on coastal resources, including fisheries, as a result of point source pollution, agricultural and urban runoff, land (roads, shoreline development, wetland loss) and water-based (beach

nourishment, piers, jetties) coastal development, marine transportation (port maintenance, shipping, marinas), marine mining, dredging and disposal of dredged material and energy-related facilities, all of which are discussed in detail in Johnson et al. (2008). These activities can introduce pollutants (through point and non-point sources), cause changes in water quality (temperature, salinity, dissolved oxygen, suspended solids), modify the physical characteristics of a habitat or remove/replace the habitat altogether, all of which can result in adverse cumulative impacts (particularly near-shore) on the American Lobster and associated resources.

The majority of these activities are permitted by other Federal and state agencies that conduct examinations of potential biological, socioeconomic, and habitat impacts. The following discussion briefly identifies some of the other Federal agencies that exercise jurisdictional authority over coastal and off-shore areas that overlap lobster management areas.

Port Projects: Throughout the Eastern seaboard of the United States there are large-to-smaller scale seaports, the operation of which could generate direct and indirect impacts on Federal Lobster-related resources. These ports provide an entryway for commerce and attract economic development that can result in increased vessel traffic, the need to conduct navigational dredging and disposal of dredged material, and the need to designate off-shore ocean disposal sites to accommodate that dredged material. These activities further generate concerns about water and sediment contamination from industrial chemical pollutants.

Figure 5.3 - Principal US Ports - Total Commerce (short tons)



Source: http://www.iwr.usace.army.mil/NDC/wcsc/totton.htm

Energy Projects: Cape Wind Associates proposes to construct a wind farm on Horseshoe Shoal, located between Cape Cod and Nantucket Island in Nantucket Sound, Massachusetts. The Cape Wind Associates project would have 130 wind turbines located as close as 4.1 miles off the shore of Cape Cod in an area of approximately 24 square miles with the turbines being placed at a minimum of 1/3 of a mile apart. The

turbines would be interconnected by cables, which would relay the energy to the shore-based power grid. If constructed, the turbines would preempt other bottom uses in an area similar to oil and natural gas leases. The potential impacts associated with the Cape Wind Associates offshore wind energy project include the construction, operation, and removal of turbine platforms and transmission cables; thermal and vibration impacts; and changes to species assemblages within the area from the introduction of vertical structures.

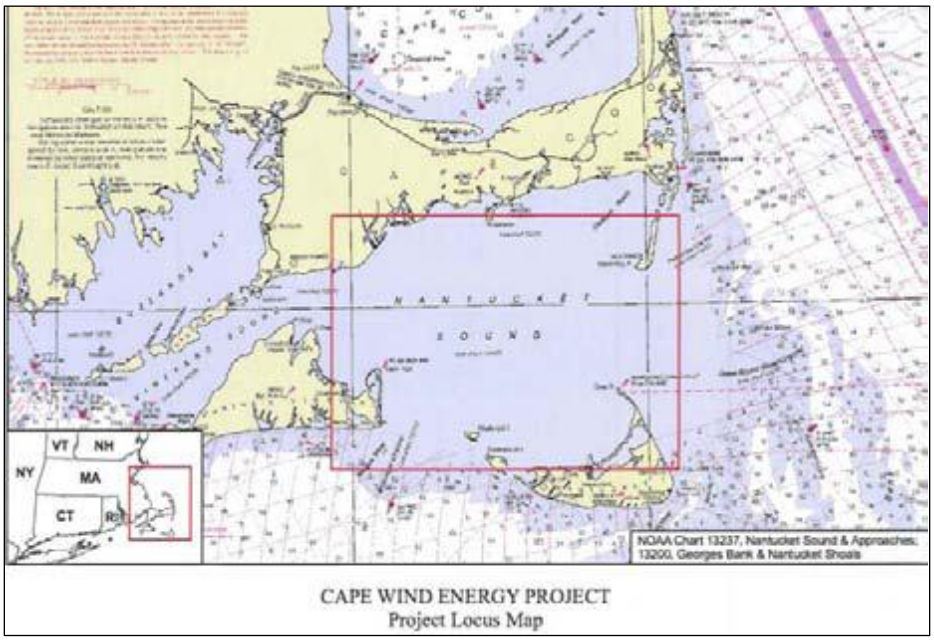
The Bureau of Ocean Energy Management (BOEM) published Notice of Intent to Prepare an Environmental Impact Statement for Potential Commercial Wind Lease Issuance and Approval of Construction and Operations Plan Offshore Maine" was published in the Federal Register on August 10, 2012. Statoil NA's proposed project, Hywind Maine, would consist of 4 3- megawatt (MW) floating wind turbine generators (WTGs) configured for a total of 12 MW. The project would be located in water depths greater than 100 meters approximately 12 nautical miles off the coast of Maine. Statoil NA's short-term objective is to construct the Hywind Maine project to demonstrate the commercial potential of the existing floating offshore Hywind technology. The company's long-term objective is to construct a full-scale, deepwater floating wind turbine facility that leverages economies of scale as well as technical and operational enhancements developed in the Hywind Maine project. The full-scale project would be subject to a subsequent and separate leasing and environmental review process.

BOEM also prepared an EA in July of 2012 considering the reasonably foreseeable environmental impacts and socioeconomic effects of issuing renewable energy leases and subsequent site characterization activities (geophysical, geotechnical, archaeological, and biological surveys needed to develop specific project proposals on those leases) in an identified Wind Energy Area on the OCS offshore Rhode Island and Massachusetts. This EA also considers the reasonably foreseeable environmental impacts associated with the approval of site assessment activities (including the installation and operation of meteorological towers and buoys) on the leases that may be issued in the Wind Energy Area.

Other offshore projects that can affect Valuable Environmental Components (VEC) include the construction of offshore liquefied natural gas facilities such as the Neptune liquefied natural gas facility approximately 10 miles off the coast of Gloucester, Massachusetts. The liquefied natural gas facility consists of an unloading buoy system where specially designed vessels moor and offload their natural gas into a pipeline, which delivers the product to customers in Massachusetts and throughout New England. As it related to the impacts of the proposed action, the Neptune liquefied natural gas facility is expected to have small, localized impacts where the pipelines and buoy anchors contact the bottom.

On December 1, 2010, the Obama administration announced there would be at least a 7-year moratorium on oil and natural gas exploration on the Atlantic coast.

Figure 5.4 - Cape Wind Energy Project Locus Map



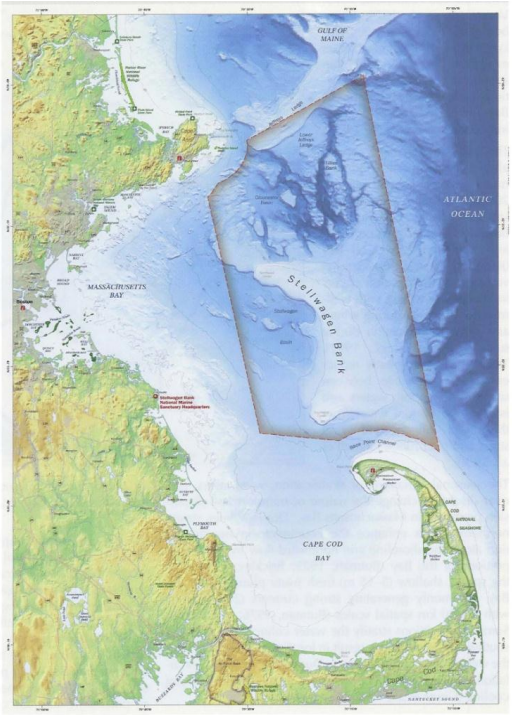
(Source: Final EIS, Jan 2009)

Other Actions

Restoration Projects: Other regional projects that are restorative or beneficial in nature include estuarine wetland restoration; offshore artificial reef creation, which provides structure and habitat for many aquatic species; and eelgrass (*Zostera marina*) restoration, which provides habitat for, among other things, juvenile Atlantic cod. These types of projects improve habitats, including nursery habitats for several commercial groundfish species. Due to past and present adverse impacts from human activities on these types of habitat, restorative projects likely have slightly positive effects at the local level.

Stellwagen Bank: National Marine Sanctuaries are marine and coastal areas of special biological significance. The Stellwagen Bank National Marine Sanctuary (SBNMS) lies off the Massachusetts coast and supports active commercial and recreational fisheries. It also serves as a habitat for marine mammals, including endangered species of whales, and draws 1.5 million visitors a year, many of whom are whale watchers. The sanctuary abuts the Massachusetts Bay Disposal Site, which serves as a repository for material dredged from the harbors of Boston and nearby cities. It also lies near Boston's ocean outfall that discharges treated sewage effluent into Massachusetts Bay.

Figure 5. 5 - The Stellwagen Bank NMS Relative to Adjacent Land and Associated Geographic Places



(source: NMFS/NOS)

Commercial fishing with mobile gear, such as trawls and scallop dredges, together with fixed gear, such as bottom-tending gill nets and lobster pots, occurs extensively throughout the sanctuary. Commercial fishermen take species from four principal categories: groundfish, pelagics, other finfish and invertebrates. Stressors resulting from commercial fishing include alteration of habitat and biological communities, removal of biomass, disturbance of feeding whales, entanglement of marine mammals, discharges of pollutants, and destruction of historic resources (NMS 2008).

For the 1996-2005 period, the total value of commercial landings from the sanctuary was 2.8% of the total landings value for all fisheries in New England. Lobster ranked 5th and 6th, respectively, among the top ten species landed and commercial fishing gear types used in the SBNMS[141] (NMS 2008).

Besides MMPA and ESA mandates, a number of existing regulations and plans designed to reduce the risk of marine mammal entanglement in the Northeast apply to, but are not specific to, the sanctuary. Regulations that are most applicable to marine mammal entanglement within the sanctuary are those pertaining to trap/pot fisheries and gillnet fisheries. Some examples are as follows:

- Federal lobster trap limits
- Lobster trap gear identification
- Lobster trap maximum size
- Trap/pot gear configuration

[141] Based on landed value (2005$) and volume (lbs), respectively.

- Special restrictions on critical habitat areas
- Reconfiguration of anchored gillnet gear
- Multispecies sink gillnet regulation (aimed at rebuilding overfished groundfish stocks)
- Seasonal and rolling closure areas
- Gear stowage requirements

The ALWTRP addresses broad-based gear modifications and special management areas to reduce serious injury and mortality of right, humpback, and fin whales due to incidental interactions with commercial fisheries (NMFS 2008).

Summary of Impacts

As stated earlier, though quantifying the cumulative impacts from the aforementioned activities on American Lobster resources is difficult, some general qualitative conclusions can be made based on the discussion above. First, among the more notable effects are the indicators of biological stress on lobster resources and the social/economic impacts on the regulated fishing community (discussed further below). In terms of biological stress, the 2009 Stock Assessment Report cited high fishing mortality (due to high exploitation rates), low recruitment, and declines in abundance for statistical Area 514, part of GOM, while SNE overall was cited for low recruitment and abundance.[142]

The Lobster Technical Committee (TC) submitted its report on the Southern New England recruitment failure to the Lobster Board at the Commission meeting in May 2010 (ASMFC, April 2010). In its report, the TC addressed possible environmental and biological factors that may be contributing to the poor conditions of the lobster stock in SNE. Environmental and biological factors include a pronounced warming period to water temperatures above 20 degrees Celsius within the inshore portions of SNE, which can cause respiratory and immune system stress in lobsters; continued fishing activity in the SNE lobster stock area; an increased abundance of predators such as scup, striped bass, and smooth dogfish, which increases mortality in the SNE lobster stock; and an increased likelihood of developing shell disease. Due to the environmental stress caused by increased water temperature and predation, lobsters in SNE are believed to have relocated to the colder and deeper waters farther offshore.

The extent to which the various activities identified above have contributed to biological stress in combination with commercial lobster fishing cannot be stated with precision. What can be noted is that regulatory responsibility for many of the non-fishing related actions lie with multiple Federal and/or state agencies and those agencies have acquired over time various authority to evaluate and take appropriate environmental measures to protect affected resources. As said earlier, NMFS often plays a role in that effort through the regulatory consultation process. As a result, impacts on these resources, in general, are being addressed through these efforts and, when present and future lobster management related actions are factored into the analysis, the cumulative impacts on lobster resources as a result are considered to be positive (see Tables 5.1 & 5.2, below).

Also more apparent is that efforts to manage and protect marine resources overall through existing regulatory processes that involve overlapping jurisdictional lines have become more of a challenge and this has resulted in recent initiatives by both the Federal government and some states to establish a more coordinated approach to marine resource management. On June 12, 2009, President Obama sent a memorandum to the heads of executive departments and Federal agencies establishing an Interagency

[142] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

Ocean Policy Task Force and charged it with developing recommendations to enhance national stewardship of the ocean, coasts, and Great Lakes. The Task Force released interim reports for public comment in September 2009 and December 2009, and received and reviewed close to 5,000 written comments from Congress, stakeholders, and the public before finalizing its recommendations. President Obama signed an Executive Order on July 19, 2010 adopting the Final Recommendations and establishing a National Policy for the Stewardship of the Ocean, Coasts, and Great Lakes. The EO established the National Ocean Council and provided a framework for effective coastal and marine spatial planning

President Obama's EO is relevant not just to lobster fishery management, but to fishery management and marine resource management in general, because it reflects a growing interest in spatial management of the oceans at both the Federal and state levels.

Cumulative Impacts on American Lobster-Related Resources by Resource Area

This section will evaluate issue and resource area impacts on American Lobster-related resources in relation to the past, present, and reasonably foreseeable actions discussed above.

Impact Category Definitions and Qualifiers: The following definitions and qualifiers are used in the narratives and tables of this analysis:

Biological Environment-

Positive – actions that increase stock/population size and/or provide added protection of the resource
Negative – actions that decrease stock/population size

Physical Environment-

Positive – actions that improve the quality or reduce disturbance of habitat
Negative – actions that degrade the quality or increase disturbance of habitat

Social Environment:

Positive – actions that increase revenue and well-being of fishermen and/or associated businesses
Negative – actions that decrease revenue and well-being of fishermen and/or associated businesses

Economic Environment:

Positive – actions that increase revenue and well-being of fishermen and/or associated businesses
Negative – actions that decrease revenue and well-being of fishermen and/or associated businesses

General Qualifiers:

Low (as in "*low* positive" or "*low* negative"): to a lesser degree
High (as in "*high* positive" or "*high* negative"): to a substantial degree
Negligible: a degree of impact immeasurably small
Likely*:* based upon the anticipated action, the likely effect is based upon best professional judgment

Table 5.1, below, summarizes these potential cumulative impacts from the Limited Access LCMA OCC & LCMA2 Alternatives.

Table 5.1 - Cumulative Impacts on Lobster-Related Resources from LAP Program Alternatives

Resource/ Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Regulatory Setting for American Lobster	Positive regulatory impacts would be expected under the proposed management measures and alternatives. Federal management measures would be compatible with Commission-approved measures and inconsistencies between state and Federal lobster fishery management would be largely eliminated.	Since 1997, lobster management has evolved into an increasingly complex state/Federal regulatory environment. Individual states have advanced numerous management measures, some of which are out-of-sync with each other, while the Federal government has struggled to promote regulatory consistency between state and Federal management efforts through its own rule-making processes in response to Commission actions.	On-going disconnects between Federal-state management of lobster resource. FMPs for bait fish and by-catch species in effect, as are Marine Mammal protection measures.	Lobster broodstock measures; potential management action for SNE lobster stock based on '09 stock assessment and 2010 Technical Committee Report.	Positive
Biological/ Physical Resources					
Lobster	Proposed measures and alternatives would put a cap on fishing effort, and thus limit stress from these activities to historical levels.	Evidence of stresses on parts of the resource from low recruitment and abundance and the impact of commercial lobster fishing. Commercial and industrial development activities can contribute to degradation of physical habitat. Impacts on lobster resources from these actions are largely mitigated through Federal and state regulatory oversight.	Commercial lobster fishing activity continues to stress some areas within the fishery, most notably the SNE stock area. Sector management" has not seen a shift in effort into the lobster fishery. However, this requires further monitoring by NMFS.	Broodstock measures will combine with effort control measures (should both be approved) to reduce stress on the resource; potential management action for SNE lobster stock based on '09 assessment. NOAA's proposed rule on broodstock measures in SNE is expected to publish FALL 2013.	Positive

Resource/ Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Protected Resources	With effort capped and management disconnects reduced under proposed lobster management measures (except No Action), protection for protected resources is improved.	North Atlantic right whale stocks critically endangered. Vessel collisions and entanglement in fishing gear are believed to have directly and significantly hindered the recovery of this species. NMFS indicates that the loss of a single individual could have a negative effect on the survival of the species. NMFS Final Rule on Ship Strike Reduction Measures (73 FR 60173, October 10, 2008). Under this rule, which went into effect Dec, 2008, the on-going threat to North Atlantic right whales and other whale species in the region from ship strikes is expected to be significantly reduced.	NMFS's ALWTRP is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial gillnet and trap/pot gear (e.g. American lobster).	MMPA vertical line final rule scheduled for 2014.	Likely Positive
By-Catch Species	For both Red Crab and Jonah Crab: status quo conditions would remain, resulting in neutral impact on these by-catch species.	Red Crab: Threat from overfishing and over-capitalization of the fishery led to development of an FMP for this fishery in 2005. Jonah Crab: Historically unregulated fishery; little is known about the status of the resource.	Red Crab: Existing FMP to manage the fishery. Jonah Crab: No Federal FMP exists for this resource.	Commission is reviewing status of resource and likely to further regulate the fishery.	Positive
Bait Fish Species	Atlantic Herring: under proposed LAP measures, status quo conditions would remain, resulting in neutral impact on these by-catch species.	Atlantic Herring: Resource is not overfished and overfishing is not occurring, although TAC volumes remain volatile.	Atlantic Herring: Resource is not overfished and overfishing is not occurring.	Stock is managed by NMFS & Commission. While future regulation is expected, it is not now known what those measures will be.	Positive

Resource/ Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Economic Environment	No economic impacts are expected from LAP alternatives since participation is expected to reflect historical levels.	From 1998-2004, American Lobster was highest value fishery in NE Region and remains one of highest in the US today.	Profit margins for some lobster fishers are being squeezed as costs associated with lobster fishing are rising.	Economic uncertainty re costs/revenues associated with the lobster industry likely to continue.	Neutral
Social Environment	Proposed measures and alternatives would put a cap on fishing effort, and thus restrict participation in the short term to historical levels.	Regulation of the American lobster fishing industry, as well as other commercial fishing industries, has increased substantially over the past decade in response to biological concerns for fishery resources. Affected fishing communities have expressed concerns with the difficulties of preserving the cultural heritage associated with their ties to fishing as a way of life, which they believe are under growing threat from regulation and competition for other uses of coastal real estate.[143]	Effort control and broodstock programs in some LCMAs have limited fishing activities, concentrating participation among communities and capping future levels of participation. Within some fishing communities, cultural organizations maintain a strong presence in support of local efforts to address social concerns for fishers and their families and efforts to maintain cultural heritage.	On-going regulatory actions, unknown at this time, will cumulatively add to the regulatory requirements placed on the fishing industry.	Neutral-to-Positive

[143] http://www.nefsc.noaa.gov/read/socialsci/community_profiles/ (See also Appendix 10) (NEFSC 2008).

Table 5.2, below, summarizes the potential cumulative impacts from the ITT program Alternatives.

Table 5.2 - Cumulative Impacts on Lobster-Related Resources from ITT Program Alternatives

Resource/Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Regulatory Setting for American Lobster	Positive regulatory impacts would be expected under the proposed management measures and alternatives. Federal management measures would be compatible with Commission-approved measures and inconsistencies between state and Federal lobster fishery management would be largely eliminated.	Since 2000, lobster management has evolved into an increasingly complex state/Federal regulatory environment. Individual states have advanced numerous management measures, some of which are out-of-sync with each other, while the Federal government has struggled to promote regulatory consistency between state and Federal management efforts through its own rule-making processes in response to Commission actions.	On-going disconnects between Federal-state management of lobster resource. FMPs for bait fish and by-catch species in effect, as are Marine Mammal protection measures.	Lobster broodstock measures; potential management actionfor SNE lobster stock based on '09 assessment and 2010 Technical Committee Report.	Positive
Biological/Physical Resources					
Lobster	Proposed measures could cause minor negative impacts on lobster population if latent effort within the fishery is triggered. Moderate positive impacts are expected as a result of conservation measures built in to ITT provisions that will over time reduce the number of traps in the water.	Evidence of stresses on part of resource from low recruitment and abundance and due to fishing mortality Commercial and industrial development activities contribute to degradation of physical habitat. Impacts on lobster resources from these actions are largely mitigated through Federal and state regulatory oversight.	Commercial lobster fishing activity continues to stress some areas within the fishery, most notably the SNE stock area. Sector management" has not seen a shift in effort into the lobster fishery. However, this requires further monitoring by NMFS.	Broodstock measures will combine with effort control measures to reduce stress on the resource; Management action for SNE lobster stock based on '09 assessment. Over time, benefits of "conservation tax" under ITT will reduce number of traps fished, thereby reducing effort.	Positive

Resource/Issue Area	Proposed Action & Alternatives	Past Actions	Current Background Activities	Future Actions	Cumulative Impacts
Protected Resources	Proposed conservation measures and alternatives would in the longer-term reduce the number of traps in the water, along with associated vertical lines that are a threat to endangered marine mammals and sea turtles.	North Atlantic right whale stocks critically endangered. Vessel collisions and entanglement in fishing gear are believed to have directly and significantly hindered the recovery of this species. NMFS indicates that the loss of a single individual could have a negative effect on the survival of the species. NMFS Final Rule on Ship Strike Reduction Measures (73 FR 60173, October 10, 2008). Under this rule, which went into effect Dec, 2008, the on-going threat to North Atlantic right whales and other whale species in the region from ship strikes is expected to be significantly reduced.	NMFS's ALWTRP is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial gillnet and trap/pot gear (e.g. American lobster).	Over time, benefits of "conservation tax" under ITT will reduce number of traps fished, thereby reducing vertical lines in the water and thus the threat of entanglement. MMPA vertical line final rule scheduled for 2014.	Possible Short-term Negative & Probable Long-term Positive
By-Catch Species	For both Red Crab and Jonah Crab: under proposed LAP measures, status quo conditions would remain, resulting in neutral impact on these by-catch species. Under proposed ITT measures and alternatives, possible minor, short-term, negative impacts could occur should latent effort in lobster fishery be triggered; long-term effects from fewer traps in the water would be positive.	Red Crab: Threat from overfishing and over-capitalization of the fishery led to development of an FMP for this fishery in 2005. Jonah Crab: Historically unregulated fishery; little is known about the status of the resource.	Red Crab: Existing FMP to manage the fishery. Jonah Crab: No Federal FMP exists for this resource.	The Commission is reviewing status of resource and likely to further regulate the fishery.	Positive

Bait Fish Species	Atlantic Herring: under proposed LAP measures, status quo conditions would remain, resulting in neutral impact on by-catch species. Under proposed ITT measures and alternatives, possible minor, negative impacts could occur should latent effort in lobster fishery be triggered; long-term effects from fewer traps in the water would be positive.	Atlantic Herring: Resource is not overfished and overfishing is not occurring.	Atlantic Herring: Resource is not overfished and overfishing is not occurring.	Stock is being managed by NMFS & the Commission. While future regulation is expected, it is not now known what those measures will be.	Positive
Economic Environment	Ability to "buy" and "sell" traps among qualified fishers with approved allocations leads to increased economic efficiencies within commercial lobster fishing industry overall.	From 1998-2004, American Lobster was highest value fishery in NE Region and remains one of highest in the US today.	Profit margins for some lobster fishers are being squeezed as costs associated with lobster fishing are rising.	Economic uncertainty re costs/revenues associated with the lobster industry likely to continue.	Positive
Social Environment	Longer term, conservation measures under ITT will reduce number of traps in water and, hence, have an impact on the amount of effort (i.e., participants) this fishery can support. "Efficiencies" promoted under ITT has a concurrent effect of maximizing economic returns and improving overall social welfare of those who participate.	Regulation of the American lobster fishing industry, and other commercial fishing industries, has increased over the past decade in response to concerns for fishery resources. Affected fishing communities have expressed concerns with difficulties of preserving cultural heritage associated with their ties to fishing as a way of life, which they believe is under growing threat from regulation and competition for other uses of coastal real estate.[144]	Effort control and broodstock programs in some LCMAs have limited fishing activities, concentrating participation among communities and capping future levels of participation. Within some fishing communities, cultural organizations maintain strong presence in support of local efforts to address social concerns for fishers and their families and efforts to maintain cultural heritage.	On-going regulatory actions, unknown at this time, will cumulatively add to the regulatory requirements placed on the fishing industry.	Positive

[144] http://www.nefsc.noaa.gov/read/socialsci/community_profiles/ (See also Appendix 10) (NEFSC 2008).

Regulatory Setting

Although lobster has always been regulated in modern times – indeed some of the first fishery regulations involved lobster[145] - the last ten 10 years have seen a flurry of regulatory activity and a sea change in the lobster regulatory setting. In contrast to just 10 years ago when the lobster fishery was managed by the New England Fishery Management Council principally using gauge restrictions, the fishery is now managed by the Commission, with seven separate management areas, each of which has separate and distinct (i.e., different) management measures. Further, access is limited to certain qualified individuals in both the state waters of LCMAs 2, 3, 4, 5, 6 and OCC, and in the Federal waters of LCMAs 1, 3, 4, and 5.

At the same time, concerns have mounted about the growing inconsistencies in management of the lobster resource across LCMA jurisdictions and the difficulties that arise when trying to administer a shared Federal-state regulatory program that lacks uniformity. Addendum XII (which contains the Commission-approved measures that form the basis for this analysis) was largely a response to these concerns. To the extent that the management measures considered herein are compatible with the Commission-approved measures administered by the states and better uniformity across Federal-state jurisdictions is achieved, the cumulative effects on the regulatory setting for American Lobster noted above will be positive (see Tables 5.3a and 5.3b, below).

Table 5.3a - LAP Alternatives - Cumulative Impacts on Regulatory Setting

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely high negative	Likely high positive	Likely high negative
LCMA 2	Likely high negative	Likely high positive	Likely high negative

Table 5.3b - ITT Alternatives - Cumulative Impacts on Regulatory Setting

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely high negative	Likely high positive	Likely low positive	Likely high positive

[145] Lobster management began, arguably, in the late 19th century. In 1872, Maine passed a law prohibiting the taking of egg-bearing females. (Acheson - 1997) In 1874, Maine also passed one of the first gauge laws by prohibiting the catch of lobster less than 10 2 inches (head to tail) from October 1st and April 1st. (Acheson/Knight - 2000 ?). In 1878, Connecticut enacted a closed season for egg-bearing lobsters. Her sister states, Massachusetts and Maine, promulgated similar regulations soon thereafter in 1880 and 1883, respectively. (FMP - 1978. p.71).

Biological and Physical Resources

Lobster

As discussed in Chapter 1, the 2009 Stock Assessment Report concluded that, in general, "(t)he American lobster fishery resource presents a mixed picture, with stable abundance for much of the GOM stock, increasing abundance for the GBK stock, and decreased abundance and recruitment yet continued high fishing mortality for the SNE stock."[146]

More specifically, the Report made the following conclusions with regard to each stock area:

"Current abundance of the GOM stock overall is at a record high compared to the 26-year time series. Recent exploitation rates have been comparable to the past whereas recruitment has steadily increased since 1997. The exception is statistical Area 514 which has continued to experience very high exploitation rates and declines in recruitment and abundance since the last assessment. Restrictions are warranted given the persistence of low recruitment and its negative effect on total abundance and egg production potential. Across GOM, effort levels in recent years are the highest observed since 1982 (both in number of traps and soak time) and further increases in effort are not advisable.

Current abundance of the GBK stock is at a record high compared to the 26-year time series and recent exploitation rates are at a record low. Recruitment has remained high in GBK since 1998. Sex ratio of the population in recent years is largely skewed toward females for unknown reasons (~80% from 2005 to 2007).

Current abundance of the SNE stock is the lowest observed since the 1980s and exploitation rates have declined since 2000. Recruitment has remained low in SNE since 1998. Given current low levels of spawning stock biomass and poor recruitment further restrictions are warranted."

In terms of reasonably foreseeable future actions, concerns have been noted about the potential impact on the lobster fishery from redirected effort as a result of the sector management program for ground fish. As stated above, initiatives are underway to expand the use of "sectors" and this in theory could increase the incentive for trawlers with lobster permits (i.e., dual permit holders) to compensate for any shortcomings in terms of allocations for ground fish by fishing up to the 100-lobsters-per-day limit (for non-trap fishers) currently allowed under the regulations for American Lobster. The extent to which a directed lobster fishery will emerge as an indirect effect from the increase use of sector management is speculative at this point; NMFS is aware of the issue, however, and will review harvest data to monitor for these concerns as the sectors become active. If there appears to be an alarming increase in the harvest of lobster by sector vessels, NMFS will coordinate with the Commission to more specifically address these issues.

From a cumulative standpoint, impacts from the non-fishery-related aforementioned activities on lobster populations have not been measured in any quantitative way. From a theoretical standpoint, at the larger-scale population level, the impact of these activities on lobster populations that have a limited or negligible exposure to these local non-fishing perturbations is likely minor-to-negligible. Further, protection of these resources under existing regulatory requirements would continue. Many of the activities identified will continue into the reasonably foreseeable future and negative impacts from disturbance, construction, and operational activities may also continue as a result. Given the wide distribution of lobster-related resources in the analysis area only minor overall negative effects are

[146] See Stock Assessment Report No. 09-01 (Supplement) of the Atlantic States Marine Fisheries Commission, "*American Lobster Stock Assessment Report for Peer Review,"* 2009, www.asmfc.org, (ASMFC 2009a).

anticipated because the affected areas are localized to the project sites and overall exposure to the population or habitat as a whole would be limited. However, continued increases in sea water temperature and the resultant influence of those increases on the prevalence of shell disease and lobster physiology bear watching and could prove to be a factor in lobster stock health in the longer term.

Cumulative impacts on lobster resources under the various alternatives examined in this EIS are largely influenced by the extent to which the level of fishing effort either increases or decreases under each option. For the LAP alternatives, effort will be capped at historic levels and thus the cumulative impacts on lobster resources (positive or negative) are expected to be very low. For the ITT alternatives, the distinction between options is clearer, as Alternatives 2 and 4 allow for the greatest benefits from a "conservation tax," while Alternatives 1 (No Action) and 3 offer no or limited benefits in terms of reduced fishing effort.

Table 5.4a - LAP Alternatives - Cumulative Impacts of Lobster Resources

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely negligible negative	Likely low positive	Likely negligible positive
LCMA 2	Likely low negative	Likely low positive	Likely negligible negative

Table 5.4b - ITT Alternatives - Cumulative Impacts of Lobster Resources

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely high negative	Likely positive	Likely low positive	Likely high positive

Protected Resources

As stated previously, North Atlantic right whale stocks are critically endangered. Vessel collisions and entanglement in fishing gear are believed to have directly and significantly hindered the recovery of this species and analysis by NMFS indicates that the loss of a single individual could have a negative effect on the survival of the species. NMFS's ALWTRP is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial gillnet and trap/pot gear (e.g. American lobster). These regulatory actions are anticipated to have a positive cumulative effect on endangered marine mammal populations. Further, NMFS's Final Rule on Ship Strike Reduction Measures is expected to significantly reduce the threat of ship strikes on North Atlantic right whales and other whale species in the region and this will also have a positive cumulative impact on protected resources.

From a cumulative standpoint, the proposed American Lobster Limited Access programs for LCMAs 2, 3 and the OCC would have an overall negligible-to-low positive impact on protected resources, given that better-aligned Federal/state jurisdictions will have a positive influence of the ability to enforce protective measures for these resources. Under the proposed ITT program, it is possible, but unlikely that short-term negative impacts on protected species could occur should latent effort be triggered, thereby increasing the number of lobster traps and related gear in the water in the near term. Because all of the ITT alternatives include measures to reduce traps over time, however, cumulative impacts on protected species in the long term are expected to be positive.

Table 5.5a - LAP Alternatives - Cumulative Impacts on Protective Resources

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely low negative	Likely negligible positive	Likely negligible positive
LCMA 2	Likely low negative	Likely low positive	Likely low positive

Table 5.5b- ITT Alternatives - Cumulative Impacts on Protected Resources

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely high negative	Likely high positive	Likely low positive	Likely high positive

By-Catch Species

Red Crab

In the 1950's, commercial concentrations of American lobsters were found in offshore waters south of New England and whenever these lobsters were targeted in waters deeper than 200 fathoms, red crabs were caught as by-catch (Holmsen 1978). In New England, red crab has been the target of a directed fishery since the 1970's, although the landings have not been consistent and have varied considerably through the years. In early 2001, faced with an increase in the number of vessels targeting the red crab resource, the Council requested that the Secretary of Commerce take emergency action to prevent overfishing in the red crab fishery while the Council continued to develop an FMP. On May 8, 2001, NMFS announced a set of emergency regulations designed to prevent overfishing, for a 180-day period effective May 18 - November 14, 2001 (66 FR 23182). The emergency regulations were extended for a second 180-day period, effective November 15, 2001 - May 14, 2002. An FMP was subsequently developed in 2005 to address the threat from overfishing of the red crab resource and overcapitalization of the red crab fishery.

From a cumulative standpoint, the proposed American Lobster Limited Access programs for LCMAs 2, 3 and the OCC would have an overall negligible-to-low positive impact on Red Crab resources, given that better-aligned Federal/state jurisdictions will have a positive influence of the ability to enforce protective measures for these resources. Under the proposed ITT program, it is possible that minor, short-term, negative impacts on Red Crab could occur should latent effort in the American Lobster fishery be triggered, thereby indirectly increasing the level of by-catch. Because all of the ITT alternatives include measures to reduce traps over time, however, cumulative impacts on Red Crab in the long term are expected to be positive.

Jonah Crab

As stated in Chapter 3, *Affected Environment*, Jonah Crab is currently an unregulated species in Federal waters and little is known about its biology, distribution, and relative abundance. Nonetheless, cumulative impacts are expected to be similar to those identified for the Red Crab resource, above. The proposed American Lobster Limited Access programs for LCMAs 2, 3 and the OCC would have an overall negligible-to-low positive impact on Red Crab resources, given that better-aligned Federal/state jurisdictions will have a positive influence of the ability to enforce protective measures for these resources. . Under the proposed ITT program, it is possible that minor, short-term, negative impacts on Jonah Crab could occur should latent effort in the American Lobster fishery be triggered, thereby indirectly increasing the level of by-catch. Because all of the ITT alternatives include measures to reduce traps over time, however, cumulative impacts on Jonah Crab in the long term are expected to be positive.

Bait Fish Species

Atlantic Herring

The herring fishery in New England developed in the late 19th century, spurred by the development of the canning industry. The lobster fishery developed about the same time, creating a market for herring as bait. Landings averaged 60,000 metric tons throughout the late 1890s and early 1900s, and again in the late 1940s and 1950s. An aggressive foreign fishery developed on Georges Bank in the early 1960s, with landings peaking at 470,000 metric tons in 1968. This excessive harvest led to a collapse of the herring stock offshore. Since 2000, landings have averaged 90,000 metric tons, the majority being taken from the Gulf of Maine.

As stated in Chapter 3, *Affected Environment*, currently the Atlantic Herring resource is not overfished and overfishing is not occurring (ASMFC 2009). From a cumulative standpoint, the proposed American Lobster Limited Access programs for LCMAs 2, 3 and the OCC would have an overall negligible-to-low positive impact on Atlantic Herring resources, given that better-aligned Federal/state jurisdictions will have a positive influence of the ability to enforce protective measures for these resources. Under the proposed ITT program, it is possible that minor, short-term, negative impacts on Atlantic Herring could occur should latent effort in the American Lobster fishery be triggered, thereby indirectly increasing the demand for Atlantic Herring as bait. Because all of the ITT alternatives include measures to reduce traps over time, however, cumulative impacts on Atlantic Herring in the long term are expected to be positive.

Table 5.6a - LAP Alternatives - Cumulative Impacts on By-Catch and Bait Fish

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely negligible-to-low negative	Likely negligible-to-low positive	Likely negligible-to-low positive
LCMA 2	Likely low negative	Likely low positive	Likely low positive

Table 5.6b - ITT Alternatives - Cumulative Impacts on By-Catch and Bait Fish

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely low negative	Likely low positive	Likely negligible positive	Likely low positive

Economic Environment

With regard to the limited access program options, since direct and indirect economic impacts are expected to be neutral, no cumulative economic impacts are expected under Alternative 2-Commission Alternative. Under Alternatives 1 and 3, the possibility of some small dilution of current/future profits have been noted (see Section 4.5.1) and thus the possibility of low negative cumulative impacts also exists. Under the ITT program alternatives, given the potential for important economic efficiencies to be realized (see 4.5.3), low-to-high positive economic impacts are possible, depending on which option is chosen (see 5.7b, below).

Table 5.7a - LAP Alternatives - Cumulative Impacts on Economic Environment

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely low negative	Likely neutral	Likely low negative
LCMA 2	Likely low negative	Likely neutral	Likely low negative

Table 5.7b - ITT Alternatives - Cumulative Impacts on Economic Environment

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely low negative	Likely moderate-to-high positive	Likely low positive	Likely high positive

Social Environment

Again, under a limited access program, lobster fishing is capped at historical levels of effort, meaning those fishers who can demonstrate a fishing history will continue to be able to fish at the same level of effort. At the same time, some fishers who might otherwise, in theory, have been able to fish in Federal waters, but are unable to demonstrate that they have historically fished for lobster, will no longer be "qualified" to do so. If they choose to participate in ITT and have a valid Federal lobster permit, they can enter the fishery through these means. For those fishers who have permits to fish in other fisheries, they potentially have other economic options in terms of fishing. Because fishers are both "qualified" to fish and allocated traps based on historical fishing practice, NMFS believes that the cumulative effects of a limited access program on the affected fishing communities will be neutral.

Under an ITT program, the social benefits are potentially significant for those who participate. These fishers have an opportunity to realize new economic efficiencies that ultimately will translate into positive social benefits. From a cumulative impacts standpoint, NMFS believes that these social impacts will be positive for the affected fishing communities.

Table 5.8a - LAP Alternatives - Cumulative Impacts on Social Environment

	Alt 1 - No Action	Alt 2 - Commission	Alt 3 – Qualify Only
LCMA OCC	Likely neutral	Likely neutral	Likely neutral
LCMA 2	Likely low negative	Likely neutral	Likely neutral

Table 5.8b - ITT Alternatives - Cumulative Impacts on Social Environment

	Alt 1 – No Action	Alt 2 - Commission	Alt 3 – LCMA 3 Only	Alt 4 – Optional ITT
ITT Program in LCMAs 2, 3, and OCC	Likely moderate-to-high negative	Likely moderate-to-high positive	Likely moderate positive	Likely high positive

Chapter 6 – Other Applicable Law

OTHER APPLICABLE LAW CHAPTER 6

6.1 Coastal Zone Management Act (CZMA)

The principal objective of the CZMA is to encourage and assist states in developing coastal management programs, to coordinate state activities, and to safeguard regional and national interest in the coastal zone. Section 307(c) of the CZMA requires Federal activity affecting the land or water uses or natural resources of a state's coastal zone to be consistent with that state's approved coastal management program, to the maximum extent practicable. On June 17, 2013, **NMFS provided a copy of the proposed rule, the draft environmental impact statement (if requested), and a consistency determination to the state coastal management agency in every state with a federally-approved coastal management program whose coastal uses or resources are affected by these lobster management measures.** Each state had 60 days in which to agree or disagree with the determination regarding consistency with that state's approved coastal management program. If a state failed to respond within 60 days, the state's agreement was presumed. We received a concurrence decision of our consistency determination from the following states: Connecticut, New Hampshire, Delaware, Rhode Island, South Carolina, North Carolina, New Jersey, and Florida. We presumed that the following states have agreed with our consistency determination: Massachusetts, Maine, New York, Virginia, Pennsylvania, Maryland, and Georgia.

6.2 Paperwork Reduction Act (PRA)

The purpose of the Paperwork Reduction Act is to reduce the paperwork burden on the public. The Director of the Office of Management and Budget (OMB) has the authority to manage information collection and record keeping requirements in order to reduce paperwork burdens. This authority encompasses the establishment of guidelines and policies and the approval of information collection requests. The selected management actions in this environmental assessment do contain new collection-of-information requirements subject to the PRA.

A paperwork reduction act analysis, including a revised Form 83i and supporting statement has been to OMB along with the final rule for this action. The reporting requirements may be applicable to the LAP actions, as well as the ITT alternatives, with the exception of the no action options. This action would create a new information collection as 0648-0673. This action would require Federal lobster permit holders fishing in LCMAs 2, 3, and the OCLMA, to document fishing participation and trap fishing effort in LCMAs 2 and the OCC LCMA, or agree to abide by the more restrictive of either state or Federal allocations prior to participation in an ITT Program. A paperwork reduction act analysis, including a revised Form 83i and supporting statement will identify the expected increase in the public reporting burden, by annual response hours, and an estimated annual cost to the public. The PRA submission estimates the total costs to the public for the LAP qualification and allocation process and the first year of the ITT Program to be $1,767. The total estimated burden on the Federal government for the same programmatic elements is $15,371.

6.3 Section 515 Information Quality Determination

6.3.1 Utility of Information Product

The document includes a description of the alternatives considered and the reasons for selecting the proposed management measures. The proposed measures are intended to meet the conservation and management goals of the ISFMP, consistent with the ACA and the Magnuson-Stevens Act national standards. This document utilizes the best available information to evaluate the potential impacts of the alternatives considered. The Federal Register notice that announces the availability of this EIS will be made available in printed publication and on the NMFS Northeast Regional Office web site at www.nero.noaa.gov. This document provides metric conversions for all measurements.

The intended users of the information are individuals involved in the American lobster fishery, such as fishermen, vessel owners and operators, lobster dealers, and processors. This EIS addresses measures for implementation in the American lobster fishery. The document is based on the most current information available and will be subject to public comment through proposed rulemaking as required under the Administrative Procedures Act.

The proposed rule was made available to the public as a publication in the Federal Register and, the final EIS and final rule will also be made available in hard copy format and on the NMFS Northeast Regional Office web site at www.nero.noaa.gov.

6.3.2 Integrity of Information Product

All electronic information disseminated by the NOAA adheres to the standards set out in Appendix 3, "Security of Automated Information Resources" OMB Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

6.3.3 Objectivity of Information Product

The EIS falls under the Natural Resource Plan category. In preparing the documents, NMFS must comply with the requirements of the Atlantic Coastal Act; the Regulatory Flexibility Act, the Paperwork Reduction Act, the Coastal Zone Management Act, the Endangered Species Act, the Marine Mammal Protection Act, the Data Quality Act, the National Standards of the Magnuson-Stevens Act, the National Environmental Policy Act (NEPA), Executive Order 13132 (Federalism), Executive Order 12866 (Regulatory Planning), and other applicable laws.

The document has been developed to comply with all applicable National Standards, including National Standard 2. National Standard 2 states that management measures shall be based upon the best scientific information available. Despite current data limitations as discussed in this document, the conservation and management measures proposed to be implemented are based upon the best scientific information available. This information includes NMFS dealer weighout and permit data, and the most current stock assessment available. The specialists who worked with these data are familiar with the most recent analytical techniques and with the available data and information relevant to the lobster fishery.

The proposed policy choices *(i.e.*, management measures) to be implemented are supported by the available scientific information, and, in cases where information was unavailable, proxy reference points are based on observed trends in the survey data. The management measures are designed to meet the conservation goals and objectives of the ISFMP, to prevent overfishing, and to rebuild this resource, while maintaining sustainable levels of fishing effort to ensure a minimal impact on fishing communities. The supporting materials and analyses used to develop the measures are contained in the document, and to some degree in previous environmental assessments as noted in this document.

The review process for this regulatory action involves the Northeast Fisheries Science Center, the Northeast Regional Office, and NMFS headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, coastal migratory resources, population biology, and the social sciences. Review by Northeast Regional Office staff is conducted by those with expertise in fisheries management and policy, habitat protection, protected species, and compliance with applicable law. Final approval and clearance of the document is conducted by staff at NMFS headquarters and the Department of Commerce.

6.4 Magnuson-Stevens Fishery Conservation and Management Act

6.4.1 National Standards of the Magnuson Stevens Act

Compliance with National Standards - Atlantic Coastal Act requires that Federal regulations be consistent with the national standards of the Magnuson-Stevens Act.

National Standard 1 requires that conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the U.S. fishing industry. By itself, the proposed management actions would not end overfishing and restore stocks of American lobster, but are part of and would complement an ongoing long-term management strategy to achieve these purposes (NMFS 1999). The degree to which the selected management actions would limit fishing effort and associated lobster mortality is difficult to state with precision. Nevertheless, it is anticipated that implementation of the LAPs, and subsequent ITT Programs, when combined with other lobster management measures, would increase the overall effectiveness of those measures in achieving ISFMP objectives and ultimately end overfishing and rebuild stocks of American lobster under National Standard 1. Additional lobster management measures in both state and Federal waters would be needed in the future in accordance with the resource management requirements addressed by the ISFMP to end resource overfishing.

National Standard 2 requires that management measures be based upon the best scientific information available. The information base for evaluation of the proposed measures in this action is based upon the best scientific information available and incorporates the scientific review and associated approval by state and Federal lobster scientists through the Commission's Lobster Technical Committee. For example, the 2009 Commission Stock Assessment Report, provides the basic underpinnings of the proposed action. In addition, current NMFS vessel, permit, dealer and observer data is incorporated in the assessment of impacts for this action. Further, the proposed measures address the management and policy guidance provided by the scientists on the Lobster Stock Assessment Review Panel regarding the measures recommended for facilitating the assessment and sustainability of the lobster resource.

National Standard 3 requires, as practicable, that an individual stock be managed as a unit throughout its range, and that interrelated stocks be managed as a unit or in close coordination. NMFS believes that the proposed action illustrates the consistency and coordination sought by this National Standard. The three stock areas for American lobster are being managed, throughout the range of the population from Maine to North Carolina, through an area management approach in coordination with state jurisdictional management and Federal management through the Commission's ISFMP and complementary Federal regulations. The measures associated with this action support the coastwide management program for the American lobster resource. One major purpose of this proposed LAP/ITT action would be to effectuate the management of lobster resources across stock areas by more accurately quantifying the number of impacted participants and their associated fishing effort in several LCMAs.

National Standard 4 requires that conservation and management measures not discriminate between residents of different states. As a preliminary matter, these proposed actions are not state specific. That is, all Federal permit holders within the impacted LCMA must adhere to the same regulations regardless of the state from which they hail. Further, the selected management actions for the EEZ were developed in consultation with the Commission and the lobster industry through its LCMT program, and take into account the social and economic distinction among the nearshore and offshore EEZ fisheries. NMFS gave great consideration to the expertise of the LCMTs, whose membership is appointed by the involved states, and who were presumed to have intimate knowledge of how their proposal would affect their state's fishery. Further, despite a dearth of information due to the lack of mandatory harvester reporting,

NMFS examined the best available information to discern any unintended discriminatory effect and used its best efforts to create counter measures to guard against such unexpected eventualities.

Federal vessels fishing in LCMAs 2, 3, and OCLMA from several states may be impacted by the proposed LAP/ITT actions, however the intent of the proposed measures would be to integrate Federal permit holders historical access and trap allocations with efforts by the states to implement the ISFMP's LAP/ITT Program. These proposed measures are intended to be consistent within each impacted LCMA and, although not a mirror-image of state regulations, support the Commission's plan by seeking to apply a consistent management regime across all involved Federal vessels within each LCMA.

National Standard 5 requires that, where applicable, conservation and management measures promote efficiency in the utilization of fishery resources. The proposed actions are consistent with such a standard. Proposals to establish LAPs with transferable traps would provide economic benefits and promote efficiency by allowing participants to regulate their trap allocation or even exit the fishery based on their situation and the economics within the LCMA-specific fishery.

National Standard 6 requires that conservation and management measures take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches. The proposed LAP/ITT management actions takes into account the variations in fisheries, fishery resources, and catches, in consultation with the Commission and industry groups through coordination with LCMTs, and among the inshore and offshore EEZ fisheries. Industry involvement through the ISFMP process ensures flexibility in management of the fisheries, and fishery resource over seven management areas. Additionally, the proposed measures respond to the recommendations of the scientists of the American Lobster Stock Assessment Peer Review Panel and TC to facilitate the management and sustainability of the lobster resource through fishing effort controls.

National Standard 7 requires that, where practicable, conservation and management measures minimize costs and avoid unnecessary duplication. The proposed measures are intended to ensure state and Federal regulations are compatible, minimize confusion by industry participants, enhance compliance, and avoid duplication. The implementation of the LAP/ITT is prompted by the Commission's intent to respond to LCMT recommendations and ensure flexibility in the management of the fisheries. The Commission has mandated that the states implement the LAP/ITT Programs and has similarly requested that NMFS do the same.

The intent of this proposed action would be to ensure that all Federal vessels participating in the LCMA 2, 3, and OCLMA trap fishery met compatible criteria to those specified in the ISFMP and implemented by state regulatory agencies. Compatible measures and coordinated management of the LAP/ITT Programs would reduce administrative costs to agencies and industry participants, clarify and standardize application procedures, minimize industry confusion over ITT procedures, and more effectively quantify participation and trap fishing effort in the future.

National Standard 8 requires that, consistent with fishery conservation requirements, conservation and management measures take into account the importance of fishery resources to fishing communities. As a preliminary matter, the proposed LAP/ITT Programs are premised on proposals developed over time by industry participation in the LCMT process, and later vetted by the Commission TC and public comment process, which should, in the long term, more effectively maintain the integrity of reliant fishing communities. NMFS examination of available data showed no incongruence with that expectation. Sustained participation of communities and consideration of economic impacts is facilitated through the ISFMP's area management provisions, which allow fishing communities to participate in, and provide public comment on, proposed management measures. Specifically, the proposed management actions developed in consultation with the Commission and the lobster industry through the LCMTs, and take

into account the social and economic distinction among the nearshore and offshore EEZ fisheries. NMFS gave great consideration to the expertise of the LCMTs, whose membership is appointed by the involved states, and who were presumed to have intimate knowledge of how their proposal would affect their state's and community's fishery.

National Standard 9 requires that, to the extent practicable, conservation and management measures minimize bycatch, and to the extent bycatch cannot be avoided, minimize the mortality of such bycatch. The proposed LAP/ITT management actions may result in an initial activation of latent trap fishing effort. This may result in a minimal increase in regulatory discards in this small component of the fishery. However, the proposed ITT measures, including the use of the conservation tax applicable with partial ITT trap transfers, are intended to address latent effort, and are not expected to affect fishing mortality since the lobsters are generally discarded alive.

National Standard 10 requires that, to the extent practicable, conservation and management measures promote the safety of human life at sea. The selected management actions will have no anticipated impact on safety at sea, because it would not result in any significant changes in fishing practices.

6.4.2 Essential Fish Habitat (EFH)

Section 305(b) of the Magnuson-Stevens Act requires all Federal agencies to consult with NMFS' Habitat Conservation Division on any future action that may adversely affect EFH. NMFS conducted an initial EFH consultation on May 28, 1999, in preparation of its FEIS (64 FR 29025) that analyzed promulgating regulatory recommendations from the Commission under the Atlantic Coastal Act rather than from the New England Fishery Management Council under the Magnuson-Stevens Act. At that time, it was concluded that the regulations would not adversely impact EFH for any federally-managed species (see below table).

The LAP/ITT Programs identified in this action are also not expected to adversely impact EFH. The proposed measures would cap fishing effort in LCMA 2 and the OCLMA based upon historic participation, and implement a transferable trap program. The analysis indicates that a potential increase in latent effort that may result, would likely be mitigated by the transfer tax under the ITT Programs. Therefore, any potential changes in fishing effort due to these measures would likely be negligible.

Council/Management Authority	FMPs
New England Fishery Management Council (NEFMC)	Multispecies; Sea Scallop; Monkfish, Red Crab
Mid-Atlantic Fishery Management Council	Summer Flounder, Scup, and Black Sea Bass; Squid, Atlantic Mackerel, and Butterfish; Surf Clam and Ocean Quahog
South Atlantic Fishery Management Council	Coastal Migratory Pelagics; Red Drum; Golden Crab
NMFS	Atlantic Highly Migratory Species; Atlantic Billfishes

6.5 Executive Order 12630

The action will not result in a regulatory taking. The chief components of these proposed LAP/ITT Programs would limit future trap fishing effort based upon historic participation in the LCMA 2 and OCLMA fisheries and then allow for the transfer of traps in LCMAs 2, 3, and the OCLMA. As a preliminary matter, there is no physical taking of actual property. Additionally, there would be no taking of any intangible property -- for example, the "right" to fish -- because there is no general property right to harvest wildlife and because NMFS's Federal lobster permits lack the traditional hallmarks of property and are more akin to a revocable license. Further, reasonable expectations should have been tempered, since the fishery has long been highly regulated and these proposed actions were developed by industry participants with Commission public comment for all relevant ISFMP addenda, consistent with past regulations. Finally, the action is not expected to substantially alter the fishing practices of Federal permit holders that have actively fished in these LCMAs.

6.6 Executive Order 12866

Determination of Economic Significance for E.O. 12866

E.O. 12866 requires a review of proposed regulations to determine whether or not the expected effects would be significant, where a significant action is any regulatory action that may:

- Have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The following provides an estimate of the expected magnitude of the economic impacts of the Proposed Action.

At $429.3 million in 2012, the landed value of American lobster was among the highest valued species landed in the Northeast region. Although the relative contribution of the EEZ component has varied over time, it has averaged between 15 percent and 20 percent of domestic landings. On average, lobsters landed in the EEZ tend to larger than lobsters landed in state waters. This means that in terms of value the EEZ share of value is likely higher than the landings share.

Nevertheless, the combined estimated impact of proposed Federal action is expected to be far less than $100 million on an annual basis and would not be considered a significant action for purposes of E.O. 12866.

6.7 Executive Order 13132

This rule does not contain policies with Federalism implications sufficient to warrant preparation of a Federalism assessment under E.O. 13132.

6.8 Executive Order 13211

Executive Order 13211, which became effective on May 18, 2001, addresses "actions concerning regulations that significantly affect Energy supply, distribution, or use". To the extent permitted by law, an agency is obligated to prepare a Statement of Energy Effects for those matters identified as a significant energy action. According to E.O. 13211, "significant energy action" means "any action by an agency that promulgates or is expected to lead to the promulgation of a final rule or regulation: (1) that is a significant regulatory action under Executive Order 12866 or any successor order, and; (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy. Based on these criteria, the proposed actions identified in this EIS do not require a Statement of Energy Effects, since these proposed actions are not likely to have a significant adverse effect on the supply, distribution, or use of energy.

6.9 Atlantic Coastal Act

Presently, American lobster regulations are issued under the Atlantic Coastal Fisheries Cooperative Management Act in Title 50 of the Code of Federal Regulations, Part 697. The lobster regulations under the Atlantic Coastal Act are in keeping with the regulatory standard set forth in the Atlantic Coastal Act: 1) that the regulations be consistent with the National Standards set forth in the Magnuson-Stevens Act and 2) that the regulations be compatible with the Commission's lobster ISFMP. The measures evaluated in this FEIS are in keeping with the Atlantic Coastal Act regulatory standard to develop compatible regulations to the Commission's lobster ISFMP, and, as stated in section 6.4.1, be consistent with the National Standards set forth in the Magnuson-Stevens Act.

6.10 Marine Mammal Protection Act (MMPA)

The MMPA prohibits the "take" of marine mammals, with certain exceptions, in waters under U.S. jurisdiction and by U.S. citizens on the high seas. The MMPA requires consultation within NMFS if impacts on marine mammals are unavoidable. A formal Marine Mammal Protection Act consultation was initiated on April 19, 2013, for the American lobster fishery as regulated under the Atlantic Coastal Act. The consultation was completed on July 23, 2013, and the proposed measures included in this Final EIS will be considered as part of the operations of the fishery for that consultation. Adverse impacts resulting from proposed fishing activities are discussed in the FEIS. The most recent BO (August 3, 2012) concluded that the continued existence of the American lobster fishery would not adversely affect any ESA-listed species analyzed in the BO. NMFS's informal consultation, completed on July 23, 2013, determined that the proposed measures fall within the scope of information already analyzed in the most recent BO; therefore, a formal consultation is not necessary for the purposes of the final rule.

6.11 Endangered Species Act (ESA)

Section 7 of the ESA states that any project authorized, funded, or conducted by any Federal agency should not "… jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined … to be critical." For this EIS, NMFS is required to "informally" consult with applicable programs within NMFS to determine whether any federally listed or proposed endangered or threatened species or their designated critical habitats occur within the areas affected by the proposed measures. If it is determined that these species or habitats might be affected by the proposed measures, "formal" consultation must take place and a Biological Assessment (BA) must be prepared to identify the nature and extent of effects and recommend measures that would avoid or reduce potential effects on the species. The BA would be used for determining whether the effects would be adverse and, if so, whether they might jeopardize the existence of any listed species. After consultation, NMFS would issue a Biological Opinion (BO) on the potential for jeopardy. If the opinion is that the project is not likely to jeopardize any listed species, the

Agency may also issue an incidental take statement as an exception to the takings prohibitions in Section 9 of the ESA.

The most recent BO (August 3, 2012) concluded that the continued existence of the American lobster fishery would not adversely affect any ESA-listed species analyzed in the BO. NMFS's informal consultation, completed on July 23, 2013, determined that that none of the proposed measures are expected to result in the addition of adverse impacts to ESA-listed cetaceans, sea turtles, and fish species that would change the basis for the conclusion of the 2012 BO for the American lobster fishery, and that the proposed measures fall within the scope of information already analyzed in the most recent BO; therefore, a formal consultation is not necessary for the purposes of the final rule for this action.

6.12 National Environmental Policy Act (NEPA)

This analysis was prepared in full compliance with the requirements of the National Environmental Policy Act (NEPA) and its implementing regulations. All established procedures to ensure that Federal agency decision makers take environmental factors into account, including the use of a public process, were followed. This Final EIS contains all of the components required by NEPA, including a discussion of the purpose and need for the proposal (Chapter 1), the alternatives considered (Chapter 2), the affected environment (Chapter 3), the environmental impacts of the proposed action and the alternatives (Chapter 4), cumulative impacts (Chapter 5), and other relevant information.

Copies of this lobster FEIS will be available by writing the Sustainable Fisheries Division, National Marine Fisheries Service, 55 Great Republic Drive, Gloucester, MA 01930-2298 – mark the outside of the envelope Lobster FEIS, or; by email to Maria.Jacob@noaa.gov or; by telephone to 978-281-9180. The FEIS is also available at the Northeast Regional Office's website at: http://www.nero.noaa.gov/sustainable/species/lobster/.

Chapter 7 – List of Preparers

LIST OF PREPARERS OF THE FEIS CHAPTER 7

Principal preparers of this document are as follows:

Patience Whitten, Fishery Management Specialist, NMFS, Gloucester, MA-Ms. Whitten has more than 19 years of experience practicing NEPA within the Federal government. Harold Mears, Assistant Regional Administrator for Operations and Budget, NMFS, Gloucester, MA-Prior to November, 2009, Mr. Mears served as Office Director of the State, Federal, and Constituent Programs Office for NMFS in Gloucester, MA and in this capacity had oversight of Federal lobster program management at NMFS for more than 14 years. Bob Ross, Supervisory Fishery Management Specialist, NMFS, Gloucester, MA-Mr. Ross worked on Federal lobster program management at NMFS for 15 years. Nicole MacDonald, Cooperative Program Specialist, NMFS, Gloucester, MA-Ms. MacDonald has been involved with Federal lobster program management issues at NMFS for approximately 10 years. Peter Burns, Fishery Policy Analyst, NMFS, Gloucester, MA- Mr. Burns has been involved with the NMFS lobster management program for 14 years. Maria Jacob, Environmental Technician, NMFS, Gloucester, MA – Ms. Jacob has been involved with the NMFS lobster management program for two years. Brian Hooper, NEPA Analyst, NMFS, Gloucester, MA – Mr. Hooper has been practicing NEPA within the Federal government for more than five years. Charles Lynch, General Counsel, Northeast Region, Gloucester, MA-Mr. Lynch has been a practicing attorney for more than 20 years and for the past 14 years has served as primary legal counsel for NMFS on lobster program management related matters and all issues involving the Atlantic Coastal Act. Dr. Eric Thunberg, Economist, NMFS Northeast Fisheries Science Center, Woods Hole, MA-Dr. Thunberg has been working on the economics of fishery management at NMFS for more than 15 years. Patience Whitten, formerly of NMFS Northeast Region, contributed to the development of this document and has more than 20 years of experience practicing NEPA within the Federal government.

Others involved in the preparation of this document include: Sarah Towne, Sarah Thompson, David Tomey, Kevin Madley, Daniel Marrone, Tim Cardiasmenos, and David Stevenson, of NMFS, Gloucester, MA; Ross Lane, Office of Law Enforcement; and Josef Idoine, NMFS Northeast Fisheries Science Center, Woods Hole, MA. This document was reviewed by individuals in the NMFS Northeast Regional Office, the Northeast Fisheries Science Center, Brian Hooker, Steve Meyers, and Steve Leathery, NMFS, Silver Spring, MD; and Steve Kokkinakis of the NOAA Office of Strategic Planning.

Chapter 8 – Final Regulatory Flexibility Analysis

FINAL REGULATORY FLEXIBILITY ANALYSIS CHAPTER 8

The regulated entities affected by this action include small entities engaged in the commercial lobster trap fishery. On June 20, 2013, the Small Business Administration (SBA) issued a final rule revising the small business size standards for several industries, effective July 22, 2013 (78 FR 37398). That final rule increased the small entity size standard based on gross sales for finfish fishing from $4 million to $19 million, shellfish fishing from $4 million to $5 million, and other marine fishing from $4 million to $7 million. Pursuant to the RFA, and prior to SBA's June 20 final rule, a FRFA analysis was conducted for this action using SBA's former size standards. NMFS has reviewed the analyses prepared for this action in light of the new standards. NMFS has determined that the new size standards do not affect the analyses prepared for this action because all Federal lobster permit holders remain categorized as small entities under both the old and new SBA small business size standards.

This final rule would potentially affect any fishing vessel using trap gear that holds a Federal lobster permit. The initial regulatory flexibility act (IRFA) analysis was based on 2007 permit data. During that year a total of 3,287 Federal lobster permits were issued. Of these permits 699 were issued only a non-trap gear permit, 2,168 were issued only a trap-gear permit, and 420 held both a trap and a non-trap gear permit. According to dealer records no single lobster vessel would exceed $4 million in gross sales. Some individuals own multiple operating units so it is possible that affiliated vessels would be classified as a large entity under the SBA size standard. However, the required ownership documentation submitted with the permit application was not adequate to reliably identify affiliated ownership. Therefore, all operating units in the commercial lobster fishery are considered small entities for purposes of analysis.

This FRFA analysis provides an update to the IRFA analysis included in the 2010 DEIS (see above paragraph) by updating the number of Federal lobster permits based on 2012 Federal permit data. Federal lobster permits became limited access in 1999; therefore, the number of Federal lobster permits in the fishery can only remain the same, or decrease over time. The number of Federal lobster permit holders has continued to decrease each year since 2007. In 2012, there were a total of 3,047 Federal lobster permits, of which 2,750 were active. The remaining 297 were in Confirmation of Permit History status and, therefore, inactive. Of those active permits in 2012, 575 were issued a non-trap only lobster permit; 1,860 were issued a trap only lobster permit; 315 were issued both a non-trap and trap gear designation. Despite the increase in the threshold for the SBA size standard for commercial fishing, all operating units in the commercial lobster fishery are considered small businesses for the purposes of this FRFA.

In the Outer Cape Area and Area 2 this action would implement a limited access program and replace maximum trap caps with individual trap allocations which would qualify Federal lobster permit holders for access to these areas and allocate traps to each qualified permit based on their permits fishing history, thereby capping effort at an overall level of traps (about 10,000 Outer Cape Area traps and about 121,000 Area 2 traps). Based on preliminary estimates, a total of 192 permitted lobster trap vessels would qualify for Area 2, and 24 would qualify for limited access in the Outer Cape Area. In concept this means that more than 2,800 permit holders (the balance of all other Federal lobster permit holders) would not qualify. However, the majority of these non-qualifiers either do not currently participate in any lobster trap fishery or they set traps in other areas. Regardless, this action would minimize the economic effects of not qualifying by allowing all Federal lobster permit holders to gain access to Areas 2, 3, and the Outer Cape Area through the purchase of trap allocation from qualified permit holders.

Existing regulations allow individuals to select Area 2 and/or the Outer Cape Area on their annual permit renewal. For a variety of reasons, some vessel owners elect multiple areas yet have no history or intent of actually setting traps in all of them. Election of an area may be thought of as representing an option to set traps in that area whereas the purchase of trap tags may reflect an indication of the intent to actually fish there, but given the lack of mandatory harvester reporting for Federal lobster permit holders, area election

and the purchase of trap tags are often the best overall indicator across the fishery of active effort, whether the vessel actually fished in an area or not.

Since the initial regulatory flexibility analysis in 2007, the lobster trap fishing effort in Area 2 and the Outer Cape Area shows a downward trend as the number of permit holders electing to fish in either the Outer Cape Area or Area 2 has continued to decrease. In 2007, 170 Federal lobster permit holders elected the Outer Cape Area, with only 38 of those purchasing trap tags for that area. In contrast, 112 permit holders elected the Outer Cape Area on their 2012 permit, and only 23 of those permit holders purchased traps. Similarly in Area 2, the number of permits electing Area 2 dropped from 431 in 2007 to 315 in 2012, with the number purchasing trap tags dropping from 182 to 148 when comparing 2007 to 2012. This potential decrease in effort may be attributed to deteriorating conditions in the SNE lobster stock and application of the Most Restrictive Rule wherein permit holders have to comply with the most restrictive measures in all areas designated.

Of the 148 lobster businesses engaged in the Area 2 trap fishery in 2012, 135 have been qualified by their state. Of the remaining 13 active Area 2 vessels, all may apply for Area 2 eligibility under the Federal limited access program, and some may qualify. Regardless, 91 percent of currently active vessels would likely qualify under the Federal program because they have already met the eligibility requirements of their state's program. Similarly, of the 23 active Outer Cape Area vessels, 21 have already been qualified by their state and would, therefore, likely qualify under this Federal action. Consequently, the vast majority of vessels currently participating in these affected management areas would be captured under this action.

The economic impacts of the limited entry program for the Outer Cape Area and Area 2 are uncertain. In the absence of action, and if a shift in effort were to occur, the most likely economic impact would be a dilution in profitability for current and future participants. Increasing the number of participating vessels and traps fished in either area may result in higher landings overall, but unless landings linearly increase with traps fished, landings, and average gross stock per vessel would be likely to go down. In effect, limited access would insulate the majority of current participating vessels from the external diseconomies that typify open access fisheries.

As noted previously, in addition to limited entry this action replaces maximum trap caps with individual trap allocations and would implement a tradable trap program. Conceptually, initial allocations would preserve the relative competitive position among qualifying lobster trap fishing businesses, but transferability would provide regulated lobster trap vessels with the flexibility to adjust trap allocations as economic conditions and business planning warrant.

The Trap Transfer Program differs from that of the Commission's recommended alternative in that once initial qualifications for trap allocations have been made in each management area the ability to purchase traps to fish in Area 2, 3, or the Outer Cape Area would extend to all Federal lobster permit holders, not just those whose Federal lobster permit qualified for limited entry. This program feature affords small lobster trap fishing businesses with the flexibility to not only scale their businesses up or down, but to acquire and set traps in any transferable trap management area. This feature has several economic advantages. Without this feature, under the no-action alternative, the only way an individual with a limited access lobster permit could fish in a different management area would be by purchasing someone else's qualifying permit and traps. This final rule implements a single Trap Transfer Program for all three transferable trap areas (Area 2, 3, and the Outer Cape Area). This feature reduces the administrative costs of running the Trap Transfer Program, but also simplifies the program for potential lobster trap fishery participants. However, while the purchase of less than a full complement of transferable traps would be allowable, the ability to fish traps would be impacted by enforcement of the Most Restrictive Rule. In cases where a trap allocation in a specific management area would be low, lobster fishing businesses electing to fish/utilize those traps in that management area would be bound or capped to that low

allocation of traps for all management areas they designate on their Federal lobster permit for the entire fishing year.

Chapter 9 – References

REFERENCES CHAPTER 9

59 Federal Register 28793. National Marine Fisheries Service (NMFS), "Designated Critical Habitat; Northern Right Whale; Final Rule," (3 June 1994), p. 28793.

59 Federal Register 31938. National Marine Fisheries Service (NMFS), "American Lobster Fishery; Final Rule," (21 June 1994), pp. 31938-31955.

64 Federal Register 29025. Environmental Protection Agency (EPA), "Environmental Impact Statements and Regulations; Availability of EPA Comments," (28 May 1999), p. 29025.

64 Federal Register 47756. National Marine Fisheries Service (NMFS), "Advance notice of proposed rulemaking; consideration of a control date for the American lobster fishery," (1 September 1999), pp. 47756-47758.

64 Federal Register 68228. National Marine Fisheries Service (NMFS), "American Lobster Fishery; Final Rule," (6 December 1999), pp. 68228- 68262.

66 Federal Register 14500. National Marine Fisheries Service (NMFS), "American Lobster Fishery; Final Rule," (13 March 2001), pp. 14500-14502.

66 Federal Register 23182. National Marine Fisheries Service (NMFS), "Magnuson-Stevens Fishery Conservation and Management Act Provisions; Fisheries of the Northeastern United States; Atlantic Deep-Sea Red Crab Fishery; Emergency Interim Rule; request for comments," (8 May 2001), pp. 23182-23185.

67 Federal Register 56800. National Marine Fisheries Service (NMFS), "Advance Notice of Proposed Rulemaking (ANPR), Notice of Intent (NOI) to combine rulemaking and prepare an Environmental Impact Statement (EIS); request for comments," (5 September 2002), pp. 56800-56804.

67 Federal Register 68128. Environmental Protection Agency (EPA), "Environmental Impact Statements; Notice of Availability," (8 November 2002), pp. 68128-68129.

68 Federal Register 14902. National Marine Fisheries Service (NMFS), "American Lobster Fishery; Final Rule," (27 March 2003), pp. 14902-14932.

68 Federal Register 14925. National Marine Fisheries Service (NMFS), "American Lobster Fishery, Final Rule," (27 March 2003), pp. 14925-14932.

70 Federal Register 24495. National Marine Fisheries Service (NMFS), "Atlantic Coastal Fisheries Cooperative Management Act Provisions; American Lobster Fishery; Advanced Notice of Proposed Rulemaking (ANPR), Notice of Intent (NOI) to combine rulemaking and prepare an Environmental Impact Statement (EIS); request for comments," (10 May 2005), pp. 24495-24497.

71 Federal Register 62657. Maritime Administration, DOT, "Northeast Gateway Energy Bridge, LLC, Liquefied Natural Gas Deepwater Port License Application; Final Application Public Hearings and Final Environmental Impact Statement," (26 October 2006), pp. 62657-62659.

71 Federal Register 64606. Maritime Administration, DOT, "Neptune LLC, Liquefied Natural Gas Deepwater Port License Application; Final Application Public Hearings and Final Environmental Impact Statement," (2 November 2006), pp. 64606-64608.

72 Federal Register 57104. National Marine Fisheries Service (NMFS), "Taking of Marine Mammals Incidental to Commercial Fishing Operations; Atlantic Large Whale Take Reduction Plan Regulations; Final Rule," (5 October 2007), pp. 57104-57194.

73 Federal Register 19171. National Marine Fisheries Service (NMFS), "Taking of Marine Mammals Incidental to Commercial Fishing Operations; Atlantic Large Whale Take Reduction Plan Regulations; Final Rule; Correction," (9 April 2008), p. 19171.

73 Federal Register 60173. National Marine Fisheries Service (NMFS), "Endangered Fish and Wildlife; Final Rule to Implement Speed Restrictions to Reduce the Threat of Ship Collisions With north Atlantic Right Whales; Final Rule," (10 October 2008), pp. 60173-60191.

73 Federal Register 73032. National Marine Fisheries Service (NMFS), "List of Fisheries for 2009; Final Rule," (1 December 2008), pp. 73032-73076.

74 Federal Register 67. National Marine Fisheries Service (NMFS), "Atlantic Coastal Fisheries Cooperative Management Act Provisions; American Lobster Fishery; Control Date for American Lobster; Advanced notice of proposed rulemaking; Consideration of a control date for the American lobster fishery," (2 January 2009), pp. 67-68.

74 Federal Register 29300. National Marine Fisheries Service (NMFS), "Endangered and Threatened Species; Designation of Critical Habitat for Atlantic Salmon (*Salmo salar*) Gulf of Maine Distinct Population Segment; Final Rule," (19 June, 2009), pp. 29300-29341.

74 Federal Register 37530. National Marine Fisheries Service (NMFS), "Atlantic Coastal Fisheries Cooperative Management Act Provisions; American Lobster Fishery; Final Rule," (29 July, 2009), pp. 37530-37551.

Able, K.W., K.L. Heck, M.P. Fahay, and C.T. Roman. (1988). Use of salt-marsh peat reefs by small juvenile lobsters on Cape Cod, Massachusetts. Estuaries,11:83–86.

Addison, J.T. (1999). Overview of Lobster stock assessment in the United Kingdom. Pp. 86-90 in U.S./Canadian Lobster Summit II, Lobster Stock Assessment: Towards Greater Understanding, Collaboration and Improvement. A New England Aquarium Aquatic Forum. 99-2. (M. Farrey, M. Mooney-Seus and H. Tausig, eds.), New England Aquarium Press.

Aiken, D.E. (1977). Molting and growth in decapod crustaceans with particular reference to the lobster (*Homarus americanus*). Div. Fish. Oceanogr. Circ. (Aust. CSIRO) No. 7, pp. 41-73.

Aiken, D.E., and Waddy, S.L. (1978). Space, density and growth of lobster (*Homarus americanus*). Proc. Annu. Meet.-World Maric. Soc. 9, 461-467.

Aiken, D.E. and Waddy, S.L. (1980). Reproductive biology in the biology and management of lobsters. (J.S. Cobb and B.F. Phillips eds.), Vol. I, p. 275.

Aiken, D.E., and Waddy, S.L. (1986). Environmental influence on recruitment of American lobster (*Homarus americanus*): a perspective. Can. J. Fish Aquat. Sci. 43:2258-2270.

Anderson, J.R. and Hart, R.M. (1979). Population biology of infectious disease. Part 1. Nature 280:361-367.

Atlantic Coastal Fisheries Cooperative Management Act (ACFMCA). (1993). 16 U.S.C. § 5101-5109; Title VIII of Pub. L. 103-206, as amended. Can also be found at: http://www.asmfc.org/legislation/ACFCMA.pdf.

Atlantic Coastal Fisheries Cooperative Management Act (ACFMCA). (1999a). Vessel Permits and Trap Tags, 50 C.F.R. § 697.4(a)(7). (1999). Can also be found at: http://ecfr.gpoaccess.gov/cgi/t/text/textidx?c=ecfr;sid=bc5a210590b3154f06f0dc5ad766af16;rgn=div5;view=text;node=50%3A9.0.1.1.5;idno=50;cc=ecfr#50:9.0.1.1.5.1.1.4.

Atlantic States Marine Fisheries Commission (ASMFC). (1997). Amendment 3 to the Interstate Fisheries Management Plan for American Lobster. Fishery Management Report No. 29 of the ASMFC. December, 1997.

Atlantic States Marine Fisheries Commission (ASMFC). (1999). Addendum I to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. Fishery Management Report No. 29a of the ASMFC. August 1999. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC) (2000a). American Lobster Stock Assessment Report. NO. 00-01.

Atlantic States Marine Fisheries Commission (ASMFC). (2000b). Evaluating Fishing Gear Impacts to Submerged Aquatic Vegetation and Determining Mitigation Strategies. ASMFC Habitat Series #5. July, 2000.

Atlantic States Marine Fisheries Commission (ASMFC). (2002a). Addendum III to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. Prepared by the Plan Review Team. Heather Stirratt, Chair. Approved Feb. 20, 2002. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2002b). Special Report No. 75 of the Atlantic States Marine Fisheries Commission, Proceedings of the American Lobster Transferable Trap Workshop, October 2002. Can also be found at: http://www.asmfc.org/publications/specialReports/sr75LobsterTransferableTrapWorkshop.pdf.

Atlantic States Marine Fisheries Commission (ASMFC). (2003). Addendum IV to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. December 2003. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2004a). Addendum V to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. March 2004. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2004b). Addendum VI to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2005). Addendum VII to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. November 2005. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2006a). American Lobster Stock Assessment Report for Peer Review. Stock Assessment Report No. 06-03 (Supplement). Can also be found at: http://www.asmfc.org/speciesDocuments/lobster/annualreports/stockassmtreports/americanLobsterStockAssessmentReport06.pdf.

Atlantic States Marine Fisheries Commission (ASMFC). (2006b). Technical Review of the Commission's Regression Analysis. Letter from ASMFC Executive Director John V. O'Shea to NMFS Regional Administrator Patricia Kurkul. October 11, 2006.

Atlantic States Marine Fisheries Commission (ASMFC). (2006c). Amendment 2 to the Interstate Fishery Management Plan for Atlantic Herring. Fishery Management Report No. 45 for the ASMFC. March 2006.

Atlantic States Marine Fisheries Commission (ASMFC). (2006d). Addendum IX to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. October 2006. Can also be found at: http://www.asmfc.org.

ASMFC TC (Atlantic States Marine Fisheries Commission Technical Committee). 2007. Special Report to the Atlantic Sturgeon Management Board: Estimation of Atlantic sturgeon bycatch in coastal Atlantic commercial fisheries of New England and the Mid-Atlantic. August 2007. 95 pp.

Atlantic States Marine Fisheries Commission (ASMFC). (2007). "White Paper" – Lobster History-Based Allocation and Transfer Issues Report to the ASMFC Lobster Management Board. October 2007.

Atlantic States Marine Fisheries Commission (ASMFC). (2008). Addendum XIII to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. May 2008. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2009a). American Lobster Stock Assessment Report for Peer Review. Stock Assessment Report No. 09-01 (Supplement). Can also be found at: http://www.asmfc.org/speciesDocuments/lobster/annualreports/stockassmtreports/2009LobsterStockAssessmentReport.pdf.

Atlantic States Marine Fisheries Commission (ASMFC). (2009b). 2008 Review of the Fishery Management Plan for Atlantic Sea Herring (*Clupea harengus harengus*). Prepared by the Atlantic Sea Herring Plan Review Team. Board Approved November 2009.

Atlantic States Marine Fisheries Commission (ASMFC). (2009c). Addendum XII to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. February 2009. Can also be found at: http://www. asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2009d). Addendum XIV to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. LCMA 3 Trap Transfer Program. May 5, 2009. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2009e). Addendum XV to Amendment 3 of the Interstate Fisheries Management Plan for American Lobster. LCMA 3 Trap Transfer Program. November 3, 2009. Can also be found at: http://www.asmfc.org.

Atlantic States Marine Fisheries Commission (ASMFC). (2010). News Release: ASMFC Atlantic Herring Section Sets Specifications for 2010-2012. For Immediate Release February 4, 2010.

ASMFC (Atlantic States Marine Fisheries Commission) Technical Committee. (2010). Technical Committee Report: *Recruitment Failure in the Southern New England Lobster Stock.* April 2010.

ASSRT (Atlantic Sturgeon Status Review Team). 2007. Status review of Atlantic sturgeon (Acipenser oxyrinchus oxyrinchus). National Marine Fisheries Service. February 23, 2007. 188 pp.

Attard, J., and Hudon C. (1987). Embryonic development and energetic investment in egg production in relation to size of female lobster (*Homarus americanus*). Can. J. Fish Aquat. Sci. 44:1157- 1164.

Balazs, G.H. (1985). Impact of ocean debris on marine turtles: entanglement and ingestion. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SEFSC-54:387-429.

Barlas, M.E. (1999). The distribution and abundance of harbor seals (*Phoca vitulina concolor)* and gray seals (*Halichoerus grypus*) in southern New England, winter 1998-summer 1999. M.A. thesis. Graduate School of Arts and Sciences, Boston University, Boston, MA. 52 pp.

Barlow, J., and P.J. Clapham. (1997). A new birth- interval approach to estimating demographic parameters of humpback whales. Ecology, 78: 535-546.

Barshaw, D.E. and Lavalli, K.L. (1988). Predation upon postlarval lobsters *Homarus americanus* by cunners *Tautogolabrus adspersus* and mud crabs *Neopanope sayi* on three different substrates: eelgrass, mud, and rock. Mar. Ecol. Progr. Ser. 48: 119-123.

Berube, M., A. Aguilar, D. Dendanto, F. Larsen, G. Notarbatolo di Sciara, R. Sears, J. Sigurjonsson, J. Urban-R, and P. Palsboll. (1998). Population genetic structure of North Atlantic, Mediterranean Sea and Sea of Cortez fin whales: analysis of mitochondrial and nuclear loci. Molecular ecology 7: 585-599.

Best, P.B., Bannister, J.L., Brownell, Jr., R.L., and Donovan, G.P. (eds.). (2001). Right whales: worldwide status. J. Cetacean Res. Manage. (Special Issue). 2. 309pp.

Biggers, W.J., and Laufer, H. (2004). Identification of juvenile hormone-active alkylphenols in the lobster *Homarus americanus* and marine sediments. Biol Bull Woods Hole, 206: 13-24.

Blaylock, R.A., J.W. Hain, L.J. Hansen, D.L. Palka, and G.T. Waring. (1995). U.S. Atlantic and Gulf of Mexico marine mammal stock assessments. NOAA Tech. Memo. NMFS-SEFSC-363. U.S. Department of Commerce, Washington, D.C. 211 pp.

Bologna, P.A. and R.S. Steneck. (1993). Kelp beds as habitat for American lobster *Homarus americanus*. Mar. Ecol. Progr. Ser. 100:127-134.

Bordner, C.E. and Conklin, D.E. (1981). Food consumption and growth of juvenile lobsters. Aquaculture 24:285-300.

Boulva, J. and I.A. McLaren. (1979). Biology of the harbor seal, *Phoca vitulina*, in eastern Canada, Bull. Fish. Res. Bd. Can. 200:1-24.

Briggs, P.T. and F.M. Mushacke. (1984). The American lobster in western Long Island Sound: movement, growth and mortality. N.Y. Fish and Game J. 31(1):21-37.

Butler, M. (2004). Center for Coastal Studies. M. Elliott: email correspondence.

Campbell, A. (1986). Migratory movements of ovigerous lobsters. *Homarus americanus*, Tagged off Grand Manan, Eastern Canada. Can. J. Fish. Aquat. Sci 43:2197-2205.

Campbell A., Graham, D.E., MacNichol, H.I., and Williamson, A.M. (1984). Movements of tagged lobsters released on the continental shelf from Georges Bank to Baccaro Bank, 1971-73. Can. Tech. Rep. Fish. Aquat. Sci. 1288, 16p.

Campbell, A. and Robinson, D.G. (1983). Reproductive potential of three American Lobster, *Homarus americanus* stocks in Canadian Maritimes. Can. J. Fish. Aquat. Sci. 40:1958-1967.

Campbell, A., and Stacko, A.B. (1985). Movement of tagged American lobsters, *Homarus americanus* off southwestern Nova Scotia. Can. J. Fish. Aquat. Sci. 42:229-238.

Capuzzo, J.M. and. Lancaster, B.A. (1979). The effects of diet on the growth energetics of postlarval lobsters *Homarus americanus*. Woods Hole Oceanogr. Inst. Tech.Rep. WHOI-79-55.

Carter, J.A., and Steele, D.H.. (1982). Attraction to and selection of prey by immature lobsters *Homarus americanus*. Can. J. Zool. 60:326-336.

Castell, J.D. and. Budson, S.D. (1974). Lobster nutrition: The effect on *Homarus americanus* of dietery protein levels. J. Fish. Res. Board Can. 31:1363-1370.

Caswell, H., M. Fujiwara, and S. Brault. (1999). Declining survival probability threatens the North Atlantic right whale. Proc. Nat. Acad. Sci. 96: 3308-3313.

CETAP. (1982). A characterization of marine mammals and turtles in the mid- and north Atlantic areas of the USA outer continental shelf. Cetacean and Turtle Assessment Program, University of Rhode Island. Final Report #AA551-CT8-48 to the Bureau of Land Management, Washington, DC, 538 pp.

Clapham, P., S., and C.A. Mayo. (1987). Reproduction and recruitment of individually identified humpback whales, *Megaptera novaeangliae,* observed in Massachusetts Bay, 1979-1985. Can. J. Zool. 65: 2853-2863.

Clapham, P., J., L.S. Baraff, C.A. Carlson, M.A. Christian, D.K. Mattila, C.A. Mayo, M.A. Murphy, and S. Pittman. (1993). Seasonal occurrence and annual return of humpback whales, *Megaptera novaeangliae,* in the southern Gulf of Maine. Can. J. Zoo. 71: 440- 443.

Clapham, P., S. Brault, H. Caswell, M. Fujiwara, S. Kraus, R. Pace and P. Wade. (2002). Report of the Working Group on Survival Estimation for North Atlantic Right Whales.

Clapham, P., Barlow, J., Bessinger, M., Cole, T., Mattila, D., Pace, R., Palka, D., Robbins, J. and Seton, R. (2003). Abundance and demographic parameters of humpback whales from the Gulf of Maine, and stock definition relative to the Scotian Shelf. Journal of Cetacean Research and Management,Vol. 5:13-22.

Clark, C.W. (1995). Application of U.S. Navy underwater hydrophone arrays for scientific research on whales. Reports of the International Whaling Commission 45: 210-212.

Clarke, R. (1954). Open boat whaling in the Azores: the history and present methods of a relic history. Discovery Rep. 26:281-354.

Coastal Zone Management Act of 1972. (2006). 16 U.S.C. §1451-1465 as amended by the Coastal Zone Protection Act of 1996, Pub L. 104-150. Can also be found at: http://coastalmanagement.noaa.gov/about/czma.html#section302.

Cobb, J.S. and Tamm, G.R. (1974). Social conditions increase intermolt period in juvenile lobsters. J. Fish. Res. Board Can. 32:141-143.

Cobb, S., and Wahle, R. (1994). Early life history and recruitment processes of clawed lobsters. Brill, E.J., Crustaceana. 67:1- 25.

Cobb, J.S., Wang, D., Richards, R.A., and Fogarty, M.J. (1986). Competition among lobsters and crabs and its possible effects in Narragansett Bay, Rhode Island. In N. Pacific Workshop on stock assessment and management of invertebrates. Edited by Jamieson, G.S. and Boume, N. Can. Spec. Publ. Fish. Aquat. Sci. 92:282-290.

Committee for Whaling Statistics. (1959-1983). International whaling statistics, volumes 41-91. Comm. Whaling Stat., Oslo, Nor., var. pagin.

Cooper, R.A., Shepard, A., Valentine, P., Uzmann, J.R., and Hulbert, A. (1987). Pre and post drilling benchmarks and monitoring data of ocean floor fauna, habitats, and contaminant loads on Georges Bank and its submarine canyons. NOAA Symp. Ser. For Undersea Res. 2:17-48.

Cooper R.A. and Uzmann, J.R. (1971). Migration and growth of deep-sea lobster, *Homarus americanus*. Science (Wash. D.C.) 171:288-290.

Cooper, R.A. and Uzmann, J.R. (1977). Ecology of juvenile and adult clawed lobsters, *Homarus americanus*, *Homarus gammarus*, and *Nephrops norvegicus*. Div. Fish Oceanogr. Circ. (Aust., CSIRO) 7: 187-208.

Cooper, R.A. and Uzmann, J.R. (1980). Ecology of juvenile and adult *Homarus americanus*. Pp. 97-142 in: The Biology and Management of Lobsters (J.S. Cobb and B.F. Phillips, eds.), Vol. II. Academic Press, New York.

Council on Environmental Quality (CEQ) Regulations for Implementing NEPA. (1969). 40 C.F.R. §1500-1508. Can also be found at: http://www.nepa.gov/nepa/regs/ceq/toc_ceq.htm.

Cowan, D.F. (1999). Method for assessing relative abundance, size distribution, and growth of recently settled and early juvenile lobsters (*Homarus americanus*) in the lower intertidal zone. J. Crust. Biol. 19(4):738-751.

Crossin, G. T., S. A. Al-Ayoub, S. H. Jury, W. H. Howell, & W. H. Watson. (1998). Behavioral thermoregulation in the American lobster *Homarus americanus.* J. Exp. Bio. 201: 365-374.

Dadswell, M. 2006. A review of the status of Atlantic sturgeon in Canada, with comparisons to populations in the United States and Europe. Fisheries 31: 218-229.

Davis, M.W. (2002). Key Principles for Understanding Fish Bycatch Discard Mortality. Canadian Journal of Fisheries and Aquatic Sciences, 59: 1834-1843.

DeHart, P.A.P. (2002). The distribution and abundance of harbor seals (*Phoca vitulina concolor)* in the Woods Hole region. M.A. thesis. Graduate School of Arts and Sciences, Boston University, Boston, MA. 88 pp.

Dicolo, J.A. and N. Friedman. (2012). Lobster glut slams prices: Some fishermen keep boats in port; outside Maine, no drop for consumers. Wall Street Journal, July 16, 2012.

Donovan, G.P. (1991). A review of IWC stock boundaries. Rep. Int. Whal. Comm., Spec. Iss. 13:39-63.

Dove, A. D. M., B. Allam, J. J. Powers, & M. S. Sokolowski. 2005. A prolonged thermal stress experiment on the American lobster Homarus americanus. J. Shell. Res.24: 761- 765.

Dovel, W. L. and T. J. Berggren. (1983). Atlantic sturgeon of the Hudson River estuary, New York. New York Fish and Game Journal 30: 140-172.

Draxler,A., R. Robohm, D. Wieczorek, D. Kapareiko, and S. Pitchford, 2005. Effect of habitat biochemicals on survival of lobster (Homarus americanus). J. Shellfish Research, 24(3):821- 824.

Dunham, P.W. and Skinner-Jacobs, D. (1978). Intermolt mating in the lobster, *Homarus americanus*. Mar. Behav. Physiol. 5:209-214.

Dunton, K.J., A. Jordaan, K.A. McKown, D.O. Conover, and M.G. Frisk. 2010. Abundance and distribution of Atlantic sturgeon (Acipenser oxyrinchus) within the Northwest Atlantic Ocean determined from five fishery-independent surveys. Fish. Bull. 108:450-465.

Elliott, Matthew. (2006). Seafood Watch. Seafood Report. American Lobster, *Homarus americanus*. Northeast Region. Final Report February 2, 2006. Monterey Bay Aquarium.

Endangered Species Act of 1973, 16 U.S.C. §1531-1544. (1973). Can also be found at: http://www.nmfs.noaa.gov/pr/pdfs/laws/esa.pdf.

Ennis, G.P. (1973). Food, feeding, and condition of lobsters, *Homarus americanus*, throughout the seasonal cycle in Bonavista Bay, Newfoundland. J. Fish. Res. Board Can. 230:1905-1909.

Ennis, G.P. (1991). Annual variation in egg production in a Newfoundland population of the American lobster, *Homarus americanus*. In Crustacean Issues Edited by F.R. Schram, Vol. 7, Crustacean Egg Production, A. Wenner and A. Kuris eds., pp. 291-299. Balkema, Rotterdam, The Netherlands.

Eno, NC, MacDonald DS, Kinnear JAM, Amos SC, Chapman CJ, Clark RA, Bunker FStPD, Munro C. (2001). Effects of crustacean traps on benthic fauna. ICES Journal of Marine Science 58: 11-20.

Environmental Review Procedures for Implementing the National Environmental Policy Act. (1999). NOAA Administrative Order Series 216-6. Can also be found at: http://www.nepa.noaa.gov/NAO216_6.pdf.

Epperly, S.P., J. Braun, and A. Veishlow. (1995). Sea turtles in North Carolina waters. Conservation Biology 9(2):384-394.

Estrella, B.T. and McKiernan, D.J. (1989). Catch-per-unit-effort and biological parameters from the Massachusetts coastal lobster, *Homarus americanus* resource: Description and Trends. NOAA Technical Report. NMFS 81, 21 pp.

Estrella, B.T. and Morrissey, T.D. (1997). Seasonal movement of offshore American lobster, *Homarus americanus*, tagged along the eastern shore of Cape Cod, Massachusetts. Fishery Bulletin 95:466-476(1997) 11 pp.

Fogarty, M. J. (1998). Implications of migration and larval interchange in American lobster stocks, spatial structure and resilience in Proceedings of the North Pacific Symposium on Invertebrate Stock Assessment and Management. Edited by G.S. Jamieson and A. Campbell. Can. Spec. Publ. Fish. Aquat. Sci. 125:273-283.

Fogarty, M.J., Borden, D.V.D. and Russell, H.J. (1980). Movements of tagged American lobster, *Homarus americanus*, off Rhode Island. Fish. Bull. 78:771-780.

Fogarty, M.J. and Idoine, J.S. (1988). Application of a yield and egg production model based on size to an offshore American lobster population. Trans. Am. Fish. Soc. 117:350-362.

Gendron, L. (2005). DFO Science, Fisheries biologist. M. Elliott. Quebec: phone conversation.

Gendron, L., P. Fradette, G. Godbout. (2001). The importance of rock crab (*Cancer irroratus*) for growth, condition and ovary development of adult American lobster (*Homarus americanus*), J. Exp. Mar. Biol. Ecol. 262, pp. 221-241.

Getchell, R.G. (1989). Bacterial shell disease in crustaceans: a review. J Shellfish Research 8(1): 1-6.

Gilbert, J.R., and J.L. Stein. (1981). Harbor seal populations and marine mammal fisheries interactions, 1981. Contract NA-80-FA-C-00029. NMFS, Northeast Fisheries Science Center, Woods Hole, MA. Annual report. 35 pp.

Gilbert, J.R., and N. Guldager. (1998). Status of harbor and gray seal populations in northern New England, Final Report to NMFS, NEFSC, Woods Hole, MA, Coop. Agree. 14-16-009-1557, 13 pp.

Gilbert, J.R. and K.M. Wynne (1983). Harbor seal populations and marine mammal-fisheries interactions, 1982. Contract NA-80-FA-C-00029 NMFS, Northeast Fisheries Science Center, Woods Hole, MA. 43 pp.

Gilbert, J.R., and K.M. Wynne (1984). Harbor seal populations and marine mammal fisheries

interactions, 1983. Contract NA-80-FA-C-00029. Third annual report. NMFS, Northeast Fisheries Science Center, Woods Hole, MA. 52 pp.

Gilbert, J.R., and K.M. Wynne. (1985). Harbor seal populations and fisheries interactions with marine mammals in New England. Interim report. NOAA NA-84-EAC-00070, NMFS, NEFSC, Woods Hole, MA, 15 pp.

Gilbert, J.R., and K.M. Wynne. (1987). Marine mammal interactions with New England gillnet fisheries, Final Report Contract No. NA-84-EAC-00070, NMFS, NEFSC, Woods Hole, MA, 21 pp.

Gilbert, J.R., G.T. Waring, K.M. Wynne and N. Guldager. (2005). Changes in abundance and distribution of harbor seals in Maine, 1981-2001. Mar. Mamm. Sci. 21: 519-535.

Glass, A.H., T.V.N. Cole, M. Garron. (2009). Mortality and serious injury determinations for baleen whale stocks along the United States eastern seaboard and adjacent Canadian Maritimes, 2003-2007 (2nd Edition). US Dept Commerce, Northeast Fisheries Science Center Reference Doc. 09-04; 19p.

Glenn, R. P. and T. L. Pugh. 2006. Epizootic shell disease in American lobster (Homarus americanus) in Massachusetts coastal waters: interactions of temperature, maturity, and intermolt duration. J. Crust. Bio. 26(4) 639-645.

Goodyear, J.D. (1996). Significance of feeding habits of North Atlantic Right Whales based on studies of diel behaviour, diving, food ingestion rates, and prey. Ph.D. Dissertation; University of Guelph, Canada.

Gulf of Maine Research Institute (GMRI). (2008). Taking the Pulse of the Lobster Industry: A Socioeconomic Survey of New England Lobster Fishermen. Eds. Laura Taylor Singer and Daniel S. Holland. Can also be found at: http://www.gmri.org/upload/files/gmri_lobster_report_lores.pdf.

Hain, J.H.W., M.J. Ratnaswamy, R.D. Kenney, and H.E. Winn. (1992). The fin whale, *Balaenoptera physalus*, in waters of the northeastern United States continental shelf. Reports of the International Whaling Commission 42: 653-669.

Hain, J.H.W., G.R. Carter, S.D. Krauss, C.A. Mayo, and H.E. Winn. (1982). Feeding behavior of the humpback whale, *Megaptera Novaeangliea*, in the western North Atlantic. Fishery Bulletin: 80(2):259-268.

Hamilton, P.K., and C.A. Mayo. (1990). Population characteristics of right whales (*Eubalaena glacialis*) observed in Cape Cod and Massachusetts Bays, 1978-1986. Reports of the International Whaling Commission, Special Issue No. 12: 203-208.

Hammond, P.S., K.Macleod, L. Burt, A. Cañadas, S. Lens, B.Mikkelsen, E. Rogan, B. Santos, A. Uriarte, O.Van Canneyt, and J.A Vázquez. Abundance of baleen whales in the European Atlantic. Paper SC/63/RMP24 presented to the IWC. Scientific Committee, June 2011, Tromsø, Norway (unpublished). 22pp.

Harding, G.C., and Trites, R.W. (1989). A further elaboration on dispersal of *Homarus americanus* larvae in the Gulf of Maine from Browns Bank, in response to comments by D.S. Pezzack. Can. J. Fish. Aquat. Sci. 46:1077-1078.

Hart, B.L. (1990). Behavioral adaptations to pathogens and parasites: five strategies. Neuroscience and Biobehavioral Reviews 14: 273-294.

Hartley, D., A. Whittingham, J. Kenney, T. Cole, and E. Pomfret. (2001). Large Whale Entanglement Report 2001. Report to the National Marine Fisheries Service, updated February 2003. 61 pp.

Haycock, C.R. and S.N. Mercer. (1984). Observations and notes on the abundance and distribution of cetaceans in the Eastern Bay of Fundy near Brier Island, Nova Scotia, in August and September 1984. Unpublished report.

Herrick, F.H. (1909). Natural history of the American lobster. Bulletin of the U.S. Fish Commission. 29: 149-408.

Holland, B.F., Jr., and G.F. Yelverton. (1973). Distribution and biological studies of anadromous fishes offshore North Carolina. Division of Commercial and Sports Fisheries, North Carolina Dept. of Natural and Economic Resources, Special Scientific Report No. 24. 130pp.

Holmsen, A.A. (1978). The Red Crab Industry: A report to the New England Fishery Management Council. Kingston, RI. 25 pp.

Holsbeek, L., C.R. Joiris, V. Debacker, I.B. Ali, P. Roose, J-P. Nelliseen, S. Gobert, J-M. Bouquegneau, and M. Bossicart. (1999). Heavy metals, organochlorines, and polycyclic aromatic hydrocarbons in sperm whales stranded in the southern North Sea during the 1994/1995 winter. Marine Pollution Bulletin, 38(4):304-313.

Hudon, C. (1987). Ecology and growth of post-larval and juvenile lobster, *Homarus americanus*, off Isle de la Madeleine (Quebec). Can J. Fish. Aquat. Sci. 44: 1855-1869.

Hughes, J.T., Sullivan, J., and Schlesser, R.A. (1972). Enhancement of lobster growth. Science 177:1110-1111.

Huntsman, A.G. (1923). Natural lobster breeding. Bull. Of the Biological Board of Canada. 5:1-11.

Huntsman, A.G. (1924). Limited factors for marine animals 2: resistance of larval lobster to extremes of temperature. Can. Biol. Fisheries. 2:91-93.

Incze, L. S., Wahle, R. A., and Cobb, J. S. (1997). Quantitative relationships between postlarval production and benthic recruitment in lobsters, *H. americanus*. Marine and Freshwater Research 48, 729–44.

International Whaling Commission (IWC). (1971). Report of the Special Meeting on Sperm Whale biology and stock assessments. Reports of the International Whaling Commission, 21:40-50.

International Whaling Commission (IWC). (1986). Report of the Workshop on the Status of Right Whales. Reports of the International Whaling Commission (Special Issue 10): 1-33.

International Whaling Commission (IWC). (1992). Report of the comprehensive assessment special meeting on North Atlantic fin whales. Rep. Int. Whal. Comm 42:595-644.

Johnson, A., Salvador, G., Kenney, J., Robbins, J., Kraus, S., Landry, S., and Clapham, P. (2005). Fishing gear involved in entanglements of right and humpback whales. Mar. Mamm. Sci. 21(4): 635-645.

Johnston, C. A., Ghioca, D., Tulbure, M., Bedford, B. L., Bourdaghs, M., Frieswyk, C. B., Vaccaro, L., Zedler, J. B. (2008). Partitioning vegetation response to anthropogenic stress to develop multi-taxa wetland indicators. Ecol. Appl. 18, 983–1001.

Katona, S. K., and J. A. Beard. (1990). Population size, migrations and feeding aggregations of the Humpback Whale, *Megaptera novaeangliae*, in the western North Atlantic Ocean. Rep. Int. Whal. Comm (special issue 12): 295-305.

Katona, S.K., V. Rough and D.T. Richardson. (1993). A field guide to whales, porpoises, and seals from Cape Cod to Newfoundland. *Smithsonian Institution Press*: Washington, DC, 316 pp.

Kelly, K.H. and J.R. Moring. (1986). Species profiles: Life histories and environmental requirements of coastal fishes and invertebrates (North Atlantic) – Atlantic herring. U.S. Fish Wildl. Serv. Biol. Rep. 82 (11.38). 22 p.

Kenney, M.K. (1994). Harbor seal population trends and habitat use in Maine. M.S. thesis. University of Maine, Orono, ME. 55 pp.

Kenney, R.D. (2002). North Atlantic, North Pacific and Southern Right Whales. pp. 806-813, In: W.F. Perrin, B. Würsig, and J.G.M. Thewissen (eds.). Encyclopedia of Marine Mammals. Academic Press, San Diego, CA.

Kenney, J., and D. Hartley. (2001). Draft large whale entanglement summary 1997-2001. Large whale entanglement report 2002. Report to the National Marine Fisheries Service, updated October 2001.

Kenney, R.D., M.A.M. Hyman, R.E. Owen, G.P. Scott, and H.E. Winn. (1986). Estimation of prey densities required by Western North Atlantic right whales. Mar. Mamm. Sci. 2(1): 1-13.

Kocik J, Lipsky C, Miller T, Rago P, Shepherd G. (2013). An Atlantic Sturgeon Population Index for ESA Management Analysis. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 13-06; 36 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026, or online at http://www.nefsc.noaa.gov/nefsc/publications/

Kraus, S.D., J. H. Prescott, and A. R. Knowlton. (1986). Wintering right whales (*Eubalaena glacialis*) along the Southeastern coast of the United, 1984-1986. New England Aquarium: 15pp.

Kraus, S.D., M.J. Crone, and A.R. Knowlton. (1988). The North Atlantic right whale. Pages 684-98 in W.J. Chandler, ed. Audbon wildlife report 1988/1989. Academic Press, San Diego, CA.

Kraus, S.D., P.K. Hamilton, R.D. Kenney, A.R. Knowlton, and C.K. Slay. (2001). Reproductive parameters of the North Atlantic right whale. J. Cetacean Res. Manage. 2: 231-236.

Krouse, J.S. (1973). Maturity, sex ratio, and size composition of the natural population of American lobster, *Homarus americanus*, along the Maine coast. Fishery Bull. 71:165-173.

Kynard, B. and M. Horgan. 2002. Ontogenetic behavior and migration of Atlantic sturgeon, Acipenser oxyrinchus oxyrinchus, and shortnose sturgeon, A. brevirostrum, with notes on social behavior. Environmental Behavior of Fishes 63: 137-150.

Laist, D.W., A.R. Knowlton, J.G. Mead, A.S. Collet, M. Podesta. (2001). Collisions between ships and whales. Marine Mammal Science, 17(1):35-75.

Laney, R.W., J.E. Hightower, B.R. Versak, M.F. Mangold, W.W. Cole Jr., and S.E. Winslow. 2007. Distribution, habitat use, and size of Atlantic sturgeon captured during cooperative winter tagging cruises, 1988-2006. In Anadromous sturgeons: habitats, threats, and management (J. Munro, D. Hatin, J.E. Hightower, K. McKown, K.J. Sulak, A.W. Kahnle, and F. Caron (eds.)), p. 167-182. Am. Fish. Soc. Symp. 56, Bethesda, MD.

Lavalli, K.L. (1988). Food capture in post-larval lobsters. Amer. Zool. 28(4):154A.

Lavalli, K.L. and Barshaw, D.E. (1986). Burrows protect postlarval lobsters *Homarus americanus* from predation by the non-burrowing cunner *Tautoglolabrus adspersus*, but not from the burrowing mud crab *Neopanope taxani*. Mar. Ecol. Prog. Ser. 32:13-16.

Laufer, H., Demir, N., Capulong, C., Pan, X., Biggers, W. (2005). Hormonal responses of lobsters to stresses of Long Island Sound. Long Island Sound Research Conference Proceedings. 7:41-43.

Lawton, P. and Lavalli, K.L. (1995). Postlarval, juvenile, adolescent and adult ecology in Biology of the lobster, *Homarus americanus*. Edited by: Factor, J.R. Pgs: 47 – 88 Academic Press, Inc.

Leatherwood, S., and R.R. Reeves. (1983). The Sierra Club handbook of whales and dolphins. Sierra Club Books, San Francisco, California. 302 pp.

Leffler, C.W. (1972). Some effects of temperature on the growth and metabolic rate of juvenile blue crabs, *Callinectes sapidus*, in the laboratory. Marine Biology 14:104-110.

Lincoln, D. (1998). Lobsters on the edge-essential lobster habitats in New England. Report prepared for Greenlite Consultants, Newton Highland, MA.

Lobster Prices Too Low for Harvesters' Taste. Aaron Smith, CNNMoney.com. March 4, 2010.

Looking for a Bargain Dinner? Try Lobster. Jon Birger, CNNMoney.com July 18, 2009.

Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA). (2007). 16 U.S.C. § 1801-1884; Pub. L. No. 94-265 as amended by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, Pub. L. No. 109-479. Can also be found at: http://www.nero.noaa.gov/sfd/ MSA_amended_20070112_FINAL.pdf.

Martin, A.R., G.P. Donovan, S. Leatherwood, et al. (1991). Whales and Dolphins, Bedford Editions Ltd., London, pp. 192, 1990.

Massachusetts Division of Marine Fisheries (MA DMF). (2008a). Reducing Trap Effort in the Lobster Conservation Management LCMA 2 Fishery through an Effort Control Plan. Comprehensive Status Report (May 2006 through August 31, 2008).

Massachusetts Division of Marine Fisheries (MA DMF). (2008b). Reducing Trap Effort in the Outer Cape Lobster Conservation Management Area Fishery through an Effort Control Plan. Comprehensive Status Report (December 2003 through July 2008).

Mayo, C. and M. Marx. (1990). Surface foraging behaviour of the North Atlantic Right Whale, *Eubalaena glacialis*, and associated zooplankton characteristics. Canadian Journal of Zoology, 68:2214-2220.

McDonnell, T. and J. West. Claws and Effect: Climate change turns lobsters into cannibals. Grist.org/climate-energy/claws-and-effect-climate-change-turns-lobsters-into-cannibals. July 24, 2013.

Miller, R. (2005). Department of Fisheries and Oceans, fisheries biologist. M. Elliott: phone conversation.

Mills, K.E., A.J. Pershing, C.J. Brown, Y. Chen, F.-S. Chiang, D.S. Holland, S. Lehuta, J.A. Nye, J.C. Sun, A.C. Thomas, and R. A. Wahle. 2013. Fisheries Management in a Changing Climate: Lessons from the 2012 Ocean Heat Wave in the Northwest Atlantic. Oceanography 26(2), http://dxdoi.org/10.5670/oceanog.2013.27.

Mitchell, E.D. (1991). Winter Records of the Minke Whale *(Balaenoptera acutorostrata* Lacepede 1804) in the Southern North Atlantic, Rep. Int. Whal. Commn., 41:455-457.

Mitchell, E., and D.G. Chapman. (1977). Preliminary assessment of stocks of northwest Atlantic sei whales *(Balaenoptera borealis*). Reports of the International Whaling Commission, Special Issue No. 1:117-120.

Mizroch, S.A. and A.E. York. (1984). Have pregnancy rates of Southern Hemisphere fin whales, *Balaenoptera physalus*, increased? Reports of the International Whaling Commission, Special Issue No. 6:401-410.

Morgan, Lance E., R. Chuenpagdee. (2003). Shifting Gears: Addressing the Collateral Impacts of Fishing Methods in U.S. Waters. PEW Science Series. Island Press, Washington, D.C.

Morreale, S.J. and E.A. Standora. (1993). Occurrence, movement, and behavior of the Kemp's ridley and other sea turtles in New York waters. Final Report April 1988 – March 1993. for the New York State Department of Wildlife Conservation Return a Gift Wildlife Program. Contract #C001984. 70pp.

Morreale, S.J., and E.A. Standora. (1998). Early life stage ecology of sea turtles in northeastern U.S. waters. NOAA Technical Memorandum NMFS-SEFSC-413:1-49.

Morreale, S.J., C.F. Smith, K. Durham, R.A. DiGiovanni, Jr., and A.A. Aguirre. (2005). Assessing health, status, and trends in northeastern sea turtle populations. Interim report. Sept. 2002 - Nov. 2004. Gloucester, Massachusetts: National Marine Fisheries Service.

Morrissey, T.D. (1971). Movements of tagged American lobster, *Homarus americanus*, liberated off Cape Cod, Massachusetts. Trans. Am. Fish. Soc. 100(1):117-120.

Murphy, Margaret A. (1995). Occurrence and group characteristics of minke whales, *Balaenoptera acutorostrata*, in Massachusetts Bay and Cape Cod Bay. Fishery Bulletin, 93:577-585.

Musick, J.A., and C.J. Limpus. (1997). Habitat utilization and migration in juvenile sea turtles. Pages 137-164 in P.L. Lutz and J.A. Musick, eds. The Biology of Sea Turtles. Boca Raton, Florida: CRC Press.

National Environmental Policy Act of 1969. (1969). 42 U.S.C. §4321-4347. Can also be found at: http://ceq. hss.doe.gov/nepa/regs/nepa/nepaeqia.htm.

National Marine Fisheries Service (NMFS). (1991a). Final recovery plan for the North Atlantic right whale (*Eubalaena glacialis*). Prepared by the Right Whale Recovery Team for the NMFS, Silver Spring, Maryland. 86 pp.

National Marine Fisheries Service (NMFS). (1991b). Final Recovery Plan for the Humpback Whale, *Megaptera novaeangliae*. Office of Protected Resources. Can also be found at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/whale_humpback.pdf.

National Marine Fisheries Service (NMFS). (1998a). Recovery Plan for the Shortnose Sturgeon (*Acipenser brevirostrum*). Prepared by the Shortnose Stergeon Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. 104 pages.

National Marine Fisheries Service (NMFS). (1998b). Unpublished. Draft recovery plans for the fin whale (*Balaenoptera physalus*) and sei whale (*Balaenoptera borealis*). Prepared by R.R. Reeves, G.K. Silber, and P.M. Payne for the National Marine Fisheries Service, Silver Spring, Maryland. July 1998.

National Marine Fisheries Service (NMFS). (1998c). Final Recovery Plan for the Shortnose Sturgeon, *Acipenser brevirostrum*. Shortnose Sturgeon Recovery Team. December 1998. Can also be found at: http://sero.nmfs.noaa.gov/pr/esa/Sturgeon/Stn%20Sturgeon/sns%20recovery%20plan.pdf.

National Marine Fisheries Service (NMFS). (2001a). Biological Opinion. Authorization of fisheries under the Federal Lobster Regulations. June 14, 2001.

National Marine Fisheries Service (NMFS). (2001b). Stock assessments of loggerhead and leatherback sea turtles and an assessment of the impact of the pelagic longline fishery on the loggerhead and leatherback sea turtles of the western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-455.

National Marine Fisheries Service (NMFS). (2002a). Final Supplemental Environmental Impact Statement (FEIS) Regulatory Impact Review and Regulatory Flexibility Analysis, Federal Lobster Management in the Exclusive Economic Zone. Northeast Region. October 30, 2002.

National Marine Fisheries Service (NMFS). (2002b). Guidelines for Assessment of the Social Impact of Fishery Management Actions. Can also be found at: http://www.nmfs.noaa.gov/sfa/reg_svcs/Council%20stuff/council%20orientation/2009%20Training/Website%20Files%20Training/Tab%20V%20%20Social%20Science/Handouts/Tab%20V1.GuidelinesAssessmentSocialImpact.pdf.

National Marine Fisheries Service (NMFS). (2003). Evaluating Bycatch: A National Approach to Standardized Bycatch Monitoring Programs [final draft report], National Marine Fisheries Service: 94.

National Marine Fisheries Service (NMFS). (2005). Recovery Plan for the North Atlantic Right Whale (*Eubalaena glacialis*). Revision. Original Version: December 1991, Revisions: July 2001, August 2004, Approved: 26 May 2005. Prepared by the Office of Protected Resources.

National Marine Fisheries Service (NMFS). (2007a). Notice to American Lobster Permit Holders Fishing in LCMA 2, 3 and Outer Cape Cod Lobster Conservation Management Areas. Letter from NMFS Regional Administrator Patricia Kurkul. June 12, 2007.

National Marine Fisheries Service (NMFS). (2007b). Comments on the American lobster history based effort control plan for Lobster Conservation Management LCMA 2. Letter from NMFS Regional Administrator Patricia Kurkul to ASMFC Executive Director John V. April 23, 2007.

National Marine Fisheries Service (NMFS). (2009a). Hawksbill Turtle (*Eretmochelys imbricate*). Available at http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.htm.

National Marine Fisheries Service (NMFS). (2009b). Fisheries of the United States 2008. Current Fisheries Statistics No. 2008. Silver Spring, Maryland. Published July 2009.

National Marine Fisheries Service (NMFS). (2009c). Federal American Lobster Management in the Exclusive Economic Zone Based Upon Management Measures Specified in Addendum X and Addendum XI to Amendment 3 of the Interstate Fishery Management Plan for American Lobster. Final Environmental Assessment Final Regulatory Impact Review and Final Regulatory Flexibility Analysis of Mandatory Federal Lobster Dealer Reporting and Broodstock Protection measures. Northeast Region. June 2009.

National Marine Fisheries Service Office of Science and Technology. (2009). Fisheries of the United States 2008. Current Fishery Statistics No. 2008. Can also be found at: http://www.st.nmfs.noaa.gov/st1/fus/fus08/fus_2008.pdf.

NMFS Office of Science and Technology. (2012). Fisheries of the United States 2011. 103 pp. Available at: http://www.st.nmfs.noaa.gov/st1/

NMFS Office of Science and Technology. (2013). Fisheries of the United States 2012. 123 pp. Available at: http://www.st.nmfs.noaa.gov/st1/

National Marine Fisheries Service. (2012). Endangered Species Act Section 7 Consultation on the Continued Implementation of Management Measures for the American Lobster Fishery [Consultation.No.F/NER/2012/01456] http://www.nero.noaa.gov/prot_res/section7/NMFSsignedBOs/2012AmericanLobsterBiOpFINAL080312.pdf

National Marine Fisheries Service, Northeast Fisheries Science Center Science Spotlight. Sea surface temperatures reach highest level in 150 years on Northeast Continental Shelf. April 25, 2013. www.nefsc.noaa.gov/press_release/2013/SciSpot/SS1304/

National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS). (2007a). Loggerhead Sea Turtle (*Caretta caretta*) 5 year review: summary and evaluation. National Marine Fisheries Service, Silver Spring, Maryland. 65 pp.

National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS). (2007b). Leatherback Sea Turtle (*Dermochelys coriacea*) 5 year review: summary and evaluation. National Marine Fisheries Service, Silver Spring, Maryland. 79 pp.

National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS). (2008). Recovery plan for the Northwest Atlantic population of the loggerhead turtle (*Caretta caretta*), Second revision. Washington, D.C.: National Marine Fisheries Service. 325 pp.

National Marine Sanctuaries (NMS). (2008). Stellwagen Bank National Marine Sanctuaries Draft Management Plan and Environmental Assessment. April 2008.

Neptune. (2006). Final Environmental Impact Statement/Environmental Impact Report for the Neptune LNG Deepwater Port License Application. United States Coast Guard.

New England Aquarium website, www.neaq.org, 2013.

New England Fishery Management Council (NEFMC). (2002). Fishery Management Plan for Deep-Sea Red Crab (*Chaceon quinquedens*). Volume I. March 2002.

New England Fishery Management Council (NEFMC). (2010). Deep-Sea Red Crab 2010 Fishing Year Specifications (March 1, 2010-February 28, 2011) and Stock Assessment and Fishery Evaluation (SAFE) Report. January 6, 2010. Can also be found at: http://www.nefmc.org/crab/.

North Atlantic Marine Mammal Commission (NAMMCO). (1998). Report of the Working Group on the Role of Minke Whales, Harp Seals and Hooded Seals in North Atlantic Ecosystems. In: NAMMCO Annual Report 1997, NAMMCO, Tromsø, Norway, pp. 125-146.

Northeast Fisheries Science Center (NEFSC). (2008). Community Profiles for the Northeast U.S. Fisheries. By Patricia M. Clay, Lisa L. Colburn, Julia Olson, Patricia Pinto da Silva, Sarah L. Smith, Azure Westwood, and Julie Ekstrom. November 24, 2008. Can also be found at: http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

Northeast Fisheries Science Center (NEFSC). (2002). Northeast Region Essential Habitat Steering Committee Workshop on the Effects of Fishing Gear on Marine Habitats off the Northeastern United States. October 23-25, 2001. Boston, Massachusetts. Northeast Fisheries Science Center Reference Document 02-01.

Northeast Utilities Service Company (NUSCO). (1999). Lobster studies. Pp. 11-34 in Monitoring the Marine Environment of Long Island Sound at Millstone Nuclear Power Station. Waterford, Connecticut. Annual Report 1998.

O'Neill, D.J. and Cobb, J.S. (1979). Some factors influencing the outcome of shelter competition in lobsters (*Homarus americanus*). Mar. Behav. Physio. 6:33-45.

Overholtz, WJ; Link, JS; Suslowicz, LE. (2000). Consumption of important pelagic fish and squid by predatory fish in the northeastern USA shelf ecosystem with some fishery comparisons. ICES J Mar Sci 57: 1147-1159.

Palma, A.T., Seneck, R.S. and Wilson, C. (1999). Settlement-driven, multiscale demographic patterns of large benthic decapods in the Gulf of Maine. J. Exp. Mar. Biol. Ecol. 241:107-136.

Payne, P.M., D.N. Wiley, S.B. Young, S. Pittman, P.J. Clapham, and J.W.Jossi. (1990). Recent fluctuations in the abundance of baleen whales in the southern Gulf of Maine in relation to changes in selected prey. Fish. Bull. 88 (4): 687-696.

Payne, P.M. and L.A. Selzer. (1989). The distribution, abundance and selected prey of the harbor seal, *Phoca vitulina concolor*, in southern New England. Mar. Mamm. Sci. 5(2): 173-192.

Pearce, J., and N. Balcom. (2005). The 1999 Long Island Sound lobster mortality event: Findings of the Comprehensive Research Initiative. Journal of Shellfish Research 24:691-697.

Perry, S.L., D.P. DeMaster, and G.K. Silber. (1999). The Sperm Whale In: The great whales: History and status of six species listed as endangered under the U.S. Endangered Species Act of 1973. Mar. Fish. Rev. Special Edition. 61(1): 59-74.

Pezzack, D. (2005). Department of Fisheries and Oceans, fisheries biologist. M. Elliott: phone conversation.

Phillips, B.F., and Sastry, A.N. (1980). Larval ecology In The biology and management of lobster. Edited by: J.S. Cobb and B.F. Phillips, Vol. 2, pp.11-57. Academic Press, New York.

Porter, T. Soft shell lobsters so soon? It's a mystery in Maine. The Salt, National Public Radio, www.npr.org. May 26, 2012.

Prescott, R.L. (1988). Leatherbacks in Cape Cod Bay, Massachusetts, 1977-1987, p 83-84 In: B.A. Schroeder (comp.), Proceedings of the Eighth Annual Workshop on Sea Turtle Conservation and Biology. NOAA Technical Memorandum NMFS-SEFC-214.

Pritchard, P.C.H. (1982). Nesting of the leatherback turtle, *Dermochelys coriacea*, in Pacific, Mexico, with a new estimate of the world population status. Copeia 1982: 741-747.

Reeves, R., and E. Mitchell. (1988). History of whaling in and near North Carolina. NOAA Tech. Rep. NMFS 65:28pp.

Reid, R.N., L.M. Cargnelli, S.J. Griesbach, D.B. Packer, D.L. Johnson, C.A. Zettin, W.W. Morse and P.L. Berrien. (1999). Essential Fish Habitat Source Document: Atlantic herring, *Clupea harengus*, life history and habitat characteristics. NOAA Technical Memorandum. NMFS-NE-126.

Richards, R.A. (1992). Habitat selection and predator avoidance: ontogenetic shifts in Habitat use by the Jonah crab Cancer borealis. J. Exp.Mar.Biol.Ecol. 156:187-197.

Richards, R.A., and Cobb, J.S. (1986). Competition for shelter between lobsters (*Homarus americanus*) and jonah crabs (*Cancer borealis*): effects of relative size. Can.J.Fish.Aquat.Sci. 43:250-2258.

Richards, R.A., Cobb, J.S., and Fogarty, M.J. (1983). Effects of behavioral interactions on the catchability of American lobster, *Homarus americanus* and two species of Cancer crabs. Fish. Bull. 81:51-60.

Robbins, J., and D. Mattila. (1999). Monitoring entanglement scars on the caudal peduncle of Gulf of Maine humpback whales. Report to the National Marine Fisheries Service. Order No. 40EANF800288. 15 pp.

Robbins, J., and D. K. Mattila. (2000). Monitoring entanglement scars on the caudal peduncle of Gulf of Maine humpback whales: 1997-1999. Center for Coastal Studies. Order number 40ENNF900253. 24 p.

Rough, V. (1995). Gray seals in Nantucket Sound, Massachusetts, winter and spring, 1994. Final report to Marine Mammal Commission. Contract T10155615 28 pp.

Saila S.B., and Flowers, J.M. (1968). Movements and behavior of berried female lobsters displaced from offshore areas to Narragansett Bay, Rhode Island. J. Cons. Perm. Int. Explor. Mer 31(3):342-351.

Sainsbury, J.C. (1971). Commercial Fishing Methods, an Introduction to Vessels and Gear. London, Fishing News (Books) Ltd., 119 p.

Schevill, W.E., W.A. Watkins, and K.E. Moore. (1986). Status of *Eubalaena glacialis* off Cape Cod. Reports of the International Whaling Commission, Special Issue No. 10: 79-82.

Schick, Robert S., P.N. Halpin, A.J. Read, C.K. Slay, S.D. Kraus, B.R. Mate, M.F. Baumgartner, J/J. Roberts, B.D. Best, C.P. Good, S.R. Loarie, J.S. Clark. (2009). Striking the right balance in right whale conservation. NRC Research Press Website at cjfas.nrc.ca. J21103.

Sea Turtle Disentanglement Network (STDN). (2009). Northeast Region Sea Turtle Disentanglement Network Summary of Entanglement/Disentanglement Data from 2002-2008. Unpublished report compiled by NMFS NERO. 11 pp.

Sears, R., F.W. Wenzel, and J.M. Williamson. (1981). Behavior and distribution observations of Cetacea along the Quebec north shore (Mingan Islands), summer-fall 1981. Unpublished report, Mingan Island Cetacean Study, Montreal, 72 pp.

Sears, R. (2002). Blue whale, *Balaenoptera nusculus*. Pages 112-116 in W.F. Perrin, B. Wursig, and J.G.M. Thewissen, eds. Encyclopedia of Marine Mammals. San Diego: Academic Press.

Seipt, I., P.J. Clapham, C.A. Mayo, and M.P. Hawvermale. (1990). Population characteristics of individually identified fin whales, *Balaenoptera physalus*, in Massachusetts Bay. Fish. Bull. 88:271-278.

Sheehy, M.R.J., Shelton, P.M.J., Wickins, J.F., Belchier, M. and E. Gaten. (1996). Ageing in the European lobster, *Homarus gammarus* by the lipofuscin in its eyestalk ganglia. Mar. Ecol Prog. Ser. 143:99-111.

Sheehy, M.R.J. and Bannister, R.C.A. (2002). Year-class detection reveals climatic modulation of settlement strength in the European lobster, *Homarus gammarus*. Can. J. Fish. Aquat. Sci. 59:1132-1143.

Sherburne, S.W. and Bean, L.L. (1991). Mortalities of impounded and feral Maine lobsters, *Homarus americanus*, caused by protozoan ciliate, Mugardia, with initial prevalence data from ten locations along the Maine coast and one offshore area. J. Shell. Res. 10(2):315-326.

Shoop, C.R., and R.D. Kenney. (1992). Seasonal distributions and abundance of loggerhead and leatherback sea turtles in waters of the northeastern United States. Herpetological Monographs 6:43-67.

Short, F.T., Matso, K., Hoven, H.M., Whitten, J., Burdick, D.M., and Short, C.A. (2001). Lobster use of eelgrass habitat in the Piscataqua River on the New Hampshire/Maine border, USA. Estuaries 24(2):277-284.

Schroeder, C.L. (2000). Population status and distribution of the harbor seal in Rhode Island waters. M.S. thesis. University of Rhode Island, Kingston, RI. 197 pp.

Somers, B. (2013). Lobster Shell Disease Fact Sheet. University of Rhode Island Sea Grant. http://seagrant.gso.uri.edu/factsheets/lobster_shell_disease.html.

Southeast Fisheries Science Center (SEFSC). (2001). Stock assessments of loggerhead and leatherback sea turtles and an assessment of the impact of the pelagic longline fishery on the loggerhead and leatherback sea turtles of the Western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-455. 343 pp.

Southeast Fisheries Science Center (SEFSC). (2009). An assessment of loggerhead sea turtles to estimate impacts of mortality reductions on population dynamics. NMFS SEFSC Contribution PRD-08/09-14. 45 pp.

Spotila, J.R., A.E. Dunham, A.J. Leslie, A.C. Steyermark, P.T. Plotkin and F.V. Paladino. (1996). Worldwide population decline of *Dermochelys coriacea*: are leatherback turtles going extinct? Chelonian Conservation and Biology 2: 209-222.

Stein, A. B., K. D. Friedland, and M. Sutherland. (2004a). Atlantic sturgeon marine bycatch and mortality on the continental shelf of the Northeast United States. North American Journal of Fisheries Management 24: 171-183.

Stein, A.B., K. D. Friedland, and M. Sutherland. 2004b. Atlantic sturgeon marine distribution and habitat use along the northeastern coast of the United States. Transaction of the American Fisheries Society 133:527-537.

Steneck, R.S. (1989). The ecological ontogeny of lobsters: in situ studies with demographic Implications. In Proc. Lobster Life History Workshop, Edited by: I. Kornfield. Orono, ME. 1:30-33.

Steneck, R.S. and Wilson, C. (1998). Why are there so many lobsters in Penobscot Bay? Pp. 72-75 in: Rim of the Gulf – Restoring Estuaries in the Gulf of Maine (D.D. Platt, ed.), The Island Institute, Rockland, ME.

Stevick, P. T., Palsbøll, P. J., Smith, T. D., Bravington, M. V. & Hammond, P. S. (2001). Errors in identification using natural markings: rates, sources, and effects on capture-recapture estimates of abundance. Canadian Journal of Fisheries and Aquatic Sciences 58, 1861–1870.

Stevick P.T., J. Allen, P.J. Clapham, N. Friday, S.K. Katona, F. Larsen, J. Lien, D.K. Matilla, P.J. Palsboll, J. Sigurjonsson, T.D. Smith, N. Oien, P.S. Hammond. 2003. North Atlantic humpback whale abundance and rate of increase four decades after protection from whaling. Marine Ecology Progress Series. 258:263-273.

Stewart, J.E. (1980). Diseases In The biology and management of lobsters Vol. 1. Physiology and Behavior. Edited by J.S. Cobb and B.F. Phillips. Pgs. 301-344. Academic Press, New York.

Stewart, J.E. and Squires, H. J. (1968). Adverse conditions as inhibitors of ecdysis in the lobster, *Homarus americanus*. J. Fish Res. Board Can. 25:1763-1774.

Stone, S.L.,T.A. Lowery, J.D. Field, C.D.Williams, D.M. Nelson, S.H. Jury, M.E. Monaco and L. Andreasen. (1994). Distribution and abundance of fishes and invertebrates in Mid-Atlantic estuaries. ELMR Rep. No. 12. Silver Spring, Maryland: NOAA/NOS Strategic Environmental Assessments Division.

Talbot, P. and Helluy, S. (1995). Reproduction and embryonic development, In The biology of the lobster. J. Factor, ed. Pp. 177-216. Academic Press.

The White House Council on Environmental Quality. (2009). Interim Framework for Effective Coastal and Marine Spatial Planning. Interagency Ocean Policy Task Force. December 9, 2009. Can also be found at: http://www.whitehouse.gov/sites/default/files/microsites/091209-Interim-CMSP-Framework-Task-Force.pdf.

Thunberg, E.M. (2007). Demographic and economic trends in the northeastern United States lobster (*Homarus americanus*) fishery, 1970-2005. U.S. Department of Commerce. Northeast Fisheries Science Center Reference Document 07-17, 64 pp.

Turtle Expert Working Group (TEWG). (2000). Assessment update for the Kemp's ridley and loggerhead sea turtle populations in the western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-444:1-115.

Turtle Expert Working Group (TEWG). (2007). An assessment of the leatherback turtle population in the Atlantic Ocean. NOAA Technical Memorandum NMFS-SEFSC-555, 116 pp.

Turtle Expert Working Group (TEWG). (2007). An assessment of the leatherback turtle population in the Atlantic Ocean. NOAA Technical Memorandum NMFS-SEFSC-555, 116 pp.

U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). (1992). Recovery plan for the Kemp's ridley sea turtle (*Lepidochelys kempii*). St. Petersburg, Florida: National Marine Fisheries Service. 40 pp.

Uzmann, J.R, Cooper, R.A. and Pecci, K.J. (1977). Migration and dispersion of tagged lobsters, *Homarus americanus* on the New England continental shelf. NOAA Tech. Rep. NMFS SSRF-705.

Van Engel, W.A. (1980). Maturity and fecundity in the American lobster, *Homarus americanus*. A review. Can. Tech. Rep. Fish. Aquat. Sci. 932:51-58.

Van Olst, J.C., Carlberg J.M. and Hughes, J.T. (1980). Aquaculture. In The Biology and Management of Lobsters, J.S. Cobb and B.F. Phillips eds., Vol. 2, pp. 333- 384. Academic Press, New York.

Waddy, S.L. and Aiken, D.E. (1990). Intermolt insemination, an alternative mating strategy for the American lobster. Can. J. Fish. Aquat. Sci. 47:2402-2406.

Waddy, S.L., Aiken, D.E. and deKleijn, D.P.V. (1995). Control of growth and Reproduction In The biology of the lobster. J. Factor, ed. Pp. 217-266. Academic Press.

Wade, P. R., and R. P. Angliss. (1997). Guidelines for assessing marine mammal stocks: Report of the GAMMS Workshop, April 3-5, 1996, Seattle, Washington. NOAA Tech Memo NMFS-OPR-12. US DOC, Washington, DC. 93pp.

Wahle, R.A. (1992). Body-size dependent anti-predator mechanisms of the American lobster. Oikos, 65:52- 60.

Wahle, R.A., M. Gibson, and M.J. Fogarty. (2009). Distinguishing disease impacts from larval supply effects in a lobster fishery collapse. Marine Ecology Progress Series 376:185-192, http://dx.doi.org/10.3354/meps07803.

Wahle, R.A. and Steneck, R.S. (1991). Recruitment habitats and nursery grounds of the American lobster, *Homarus americanus*: A demographic bottleneck? Mar. Ecol. Prog Ser. 69, 231-243.

Wahle, R.A. and Steneck, R.S. (1992). Habitat restrictions in early benthic life: Experiments on habitat selection and it situ predation with the Amercian lobster. J. Exp. Mar. Biol. Ecol. 157:91-114.

Waldman, J. R., J. T. Hart, and I. I. Wirgin. (1996). Stock composition of the New York Bight Atlantic sturgeon fishery based on analysis of mitochondrial DNA. Transactions of the American Fisheries Society 125: 364-371.

Ward, Nathalie. (1995). Stellwagen Bank: A Guide to the Whales, Sea Birds, and Marine Life of the Stellwagen Bank National Marine Sanctuary. pp. 157-158. Down East Books. Camden, ME.

Waring, G.T., C.P. Fairfield, C.M. Ruhsam, and M. Sano. (1993). Sperm whales associated with Gulf Stream features off the northeastern USA shelf. Fish. Oceanogr. 2:101-105.

Waring, G.T., J.M. Quintal, and C.P. Fairfield (eds.). (2002). U.S. Atlantic and Gulf of Mexico marine mammal stock assessments – 2002, NOAA Technical Memorandum NOAA Fisheries- NE-169.

Waring GT, Josephson E, Maze-Foley K, Rosel, PE, editors. 2012. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments -- 2011. NOAA Tech Memo NMFS NE 221; 319 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026, or online at http://www.nefsc.noaa.gov/nefsc/publications/

Waring, G.T., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.). 2011. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments - 2011. NOAA Technical Memorandum NMFS-NE-221:1-319.

Waring, G.T., R.M. Pace, J.M. Quintal, C.P. Fairfield, and K. Maze-Foley (eds.). (2003). U.S. Atlantic and Gulf of Mexico marine mammal stock assessments – 2003, NOAA Technical Memorandum NOAA-NE-182.

Waring, G.T., and R.M. Pace, J.M. Quintal, C.P.Fairfield and K. Maze-Foley. (2004). U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2003. NOAA Tech Memo. NMFS-NE-182. 287 pp.

Waring, G.T., E. Josephson, C.P. Fairfield, and K. Maze-Foley (eds.). (2006). U.S. Atlantic and Gulf of Mexico marine mammal stock assessments – 2005, NOAA Technical Memorandum NOAA-NE-194.

Waring, G.T., E. Josephson, K. Maze-Foley, P.E. Rosel (eds.). (2009). U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2009. NOAA Tech Memo NMFS NE 213; 528 p.

Watkins, W. A. (1986). Whale reactions to human activities in Cape Cod waters. Marine Mammal Science 2(4):251–262.

Watkins,W. A., and W. E. Schevill. (1979). Aerial observations of feeding behavior in four baleen whales, *Eubalaena glacialis*, *Balaenoptera borealis*, *Megaptera novaeangliae*, *Balaenoptera physalus*. J. Mammal. 60(1): 155-163.

Watkins, W.A., and W.E. Schevill. (1982). Observations of right whales (*Eubalaena glacialis*) in Cape Cod waters. Fish. Bull. 80(4): 875-880.

Weinrich, M. T., M. R. Schilling, and C. R. Belt. (1992). Evidence of aquisition of a novel feeding behaviour: lobtail feeding in humpback whales, *Megaptera novaeangliae*. Anim. Behav. 44: 1059-1072.

Weiss, H.M. (1970). The diet and feeding behavior of the lobster, *Homarus americanus*, In Long Island Sound Ph.D. Dissertation. University of Connecticut, Storrs.

Whitehead, H. (2002). Estimates of the current global population size and historical trajectory for sperm whales. Mar. Ecol. Prog. Ser. 242:295-304.

Whittingham, A., D. Hartley, J. Kenney, T. Cole, and E. Pomfret. (2005a). Large whale entanglement report 2002. Report to the National Marine Fisheries Service, updated March 2005.

Whittingham, A., M. Garron, J. Kenney, and D. Hartley. (2005b). Large whale entanglement report 2003. Report to the National Marine Fisheries Service, updated June 2005.

Wiley, D.N., R.A. Asmutis, T.D. Pitchford, and D.P. Gannon. (1995). Stranding and mortality of humpback whales, *Megaptera novaengliae*, in the mid-Atlantic and southeast United States, 1985-1992. Fish. Bull., U.S. 93:196-205.

Winn, H.E., C.A. Price, and P.W. Sorensen. (1986). The distributional biology of the right whale (*Eubalaena glacialis*) in the western North Atlantic. Reports of the International Whaling Commission, Special Issue No. 10:129-138.

Witherington, B., Florida Fish and Wildlife Conservation Commission, Florida Marine Research Institute, St. Petersburg, FL, personal communication to Barbara Shroeder, National Marine Fisheries Service, Protected Resources Division, Silver Spring, MD, and Dennis Klemm, National Marine Fisheries Service, Southeast Regional Office, St. Petersburg, FL, April 24, 2004.

Wolff, T. (1978). Maximum size of lobsters (*Homarus*) (*Decapoda, Nephropidae*). Crustaceana. 34:1-14.

Worden, M., C. Clark, M. Conaway, and S. Qadri, 2006. Temperature dependence of cardiac performance in the lobster Homarus americanus. J. Experimental Biology, 209:1024-1034.

Wynne, K. and Schwartz, M. (1999). Guide to marine mammals and turtles of the U.S. Atlantic and Gulf of Mexico. Rhode Island Sea Grant, Narragansett. 115pp.

Index: Final Environmental Impact Statement

Addenda

Addendum III…….*1-8, 4-63, 1-9, 2-3, 2-8*

Addendum IV…….. *1-8, 2-14, 2-22, 4-63, 4-69*

Addendum VII……..… *ES-13, 1-9, 1-10, 2-15 to 2-22, 4-52*

Addendum XII……ES-3, *ES-6, 2-3 to 2-5, 2-8, 2-20, 4-7*

Addendum XIII……*1-8, 2-8, 2-13, 4-18, 4-24, 4-65*

Addendum XVII……..*ES-4, 1-9, 2-4 and 2-5, 5-3*

Addendum XVIII……*1-9, 2-4 and 2-5, 4-11 and 4-12, 4-53 to 4-57, 5-3*

Addendum XIX……...*1-10, 2-4, 2-22, 5-3*

Addendum XXI……...*ES-4, 1-10, 2-5, 5-3*

Addendum XXII……*ES-4, 1-10, 2-5, 4-12, 5-3*

Advanced Notice of Proposed Rulemaking (ANPR)…… *1-10, 4-11, 4-54, 5-2*

Allocation……..*ES-5, 2-7, 2-10, 2-14, 2-16 and 2-17*

Alternatives…….*ES-4*

LCMA 2 Limited Access Alternatives……*ES-5 and ES-6, 2-14 to 2-19, 4-31 to 4-35*

OCC LCMA Limited Access Alternatives……*ES-5, 2-7 to 2-13, 4-13 to 4-16*

Individual Trap Transfer (ITT) Alternatives……...*ES-6, 2-20 to 2-26, 4-50 to 4-55*

Appeals…….*4-10*

LCMA 2 Appeals…….....*2-11 and 2-12*

OCC LCMA Appeals……...……*2-18 and 2-19*

Application……..*2-23, 4-4 to 4-6, 4-64, 4-72*

Atlantic Coastal Act (ACA)……...*ES-1, 1-1, 1-10, 6-9*

Atlantic Large Whale Take Reduction Plan (ALWTRP)…….*5-5*

Atlantic States Marine Fisheries Commission (ASMFC)……...*ES-1, 1-1*

Biological Opinion……...*3-42, 6-7*

Bycatch……....*3-36 and 3-37, 3-60 and 3-61, 4-39, 6-5*

Coastal Zone Management Area (CZMA)……...….*1-11, 6-1*

Climate Change……*3-35 and 3-36, 5-7*

Confirmation of Permit History (CPH)……....*ES-16, 4-56*

Conservation Tax…….*ES-2, ES-15, ES-18, 1-3, 4-52, 4-69, 4-75, 5-3*

Database

See trap tag database

Draft Environmental Impact Statement (DEIS)……..….*1-9, 1-10, 3-8*

Economic Impact……....*ES-12, ES-14, 4-78 to 4-82, 5-13, 5-17, 5-26*

Index: Final Environmental Impact Statement

Eligibility…….*ES-5*

Endangered Species Act (ESA)……*6-7*

Essential Fish Habitat (EFH)……..*5-7 and 5-7, 6-5*

Executive Order (E.O.)……..*6-6 and 6-7*

Fishery Management Plan (Lobster)……...*1-1, 5-3*

Full Business Transfer……..…….*2-24 and 2-25, 4-75*

Individual Transferable Trap (ITT) Program……*1-3*

Glut (Lobster Supply Glut)……*3-36*

Lobster Price…….*3-7 to 3-11*

Lobster Landings…….*3-6 and 3-7*

Marine Mammal Protection Plan (MMPA)……*1-11, 3-42, 5-4, 6-7*

Magnuson Stevens Fishery Management Act (MSA)……...….*6-3*

Most Restrictive Rule……...……*4-9*

National Environmental Protection Act…….*6-8*

Outer Continental Shelf……..…….*3-39, 5-1*

Permits…….….*1-2 and 1-3*

Permit Transfers.....…..*4-75*

Potential Biological Removal (PBR)……..*3-45 to 3-53, 5-5*

Paperwork Reduction Act (PRA)…… ……...6-1

Qualification

See eligibility

Section 7 Consultation……..……*1-11, 3-42, 6-7*

Seasonal Closure (OCC LCMA)…… ……*4-18, 4-24, 4-29, 4-31, 4-68*

Shell Disease…….……*3-34 to 3-36, 5-7 to 5-8*

Social Impact Assessment…….*ES-10, ES-12, ES-14, ES-19, 3-12, 3-29, 4-83 to 4-92, 5-27*

Southern New England Recruitment Failure……..*1-6, 2-1, 4-38, 4-57, 5-3, 5-13*

Stock Areas (Lobster)…….*ES-1, 1-5*

Stock Assessment (2009)……..……*ES-3, 1-4 to 1-6, 2-1, 5-13*

Trap Haul Out

See seasonal closure

Trap Tag Database……...…..*ES-7, ES-15 and ES-16, 2-24 and 2-25, 4-6 and 4-7, 4-53*

Water Temperature…….…….*5-7*

Chapter 10 – Appendices

LIST OF APPENDICES CHAPTER 10

Appendix 1 - Addendum VI

Appendix 2 - Addendum VII

Appendix 3 - Addendum XII

Appendix 4 - Addendum XIII

Appendix 5 – Addendum XIV

Appendix 6 - Addendum XVIII

Appendix 7 - Public Scoping Comments (DEIS and Proposed Rule) for Proposed Effort Control Measures and NMFS's Response

Appendix 8 - Commission's Public Process on Addenda related to Limited Entry in LCMAs 2, 3, and OCC, and Individual Trap Transferability in these LCMAs

Appendix 9 - Notice to American Lobster Permit Holders Fishing in LCMA 2, 3, and OCC Lobster Conservation Management Areas

Appendix 10 – The Commission's "White Paper"

Appendix 11 – Technical Review of Regression Analysis

Appendix 12 – GMRI Survey

Appendix 13 - Trap Tag Tables

Appendix 14 - MA DMF documents - Reducing Trap Effort in the LCMA 2 and OCC Fisheries Through and Effort Control Plan - Comprehensive Status Reports

Appendix 15 – NMFS Comments on Draft Addendum XII

Appendix 16 – Letter from Patricia Kurkul to ASMFC

Appendix 17 – Community Profiles

Appendix 18 – Technical Committee Report: *Recruitment Failure in the SNE Lobster Stock*

Appendix 1

Addendum VI to Amendment 3 to the Interstate Fishery Management Plan for American Lobster

***ASMFC Vision Statement*:**
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

1.0 INTRODUCTION AND BACKGROUND

In December 2003, the Atlantic States Marine Fisheries Commission Lobster Board (Board) passed Addendum IV to Amendment 3 of the Interstate Fishery Management Plan for American Lobster. Within Addendum IV there is an Effort Control Plan for Lobster Conservation Management Area 2 (LCMA 2). When this Addendum passed, the Management Board formed a committee with representatives from the jurisdictions with Area 2 fishermen including Massachusetts, Rhode Island, Connecticut, New York, and NOAA Fisheries. This subcommittee was charged with developing an implementation plan for the Area 2 effort control plan to ensuring consistent implementation throughout all of the jurisdictions. Following several meetings, this committee outlined concerns with various aspects of the Area 2 effort control plan to the Board, including the need for additional detail in order to ensure consistent implementation.

The Board has concerns with the Area 2 effort control plan including the inability of several jurisdictions to implement portions of the plan. Specifically concerns were identified with the initial trap allocation scheme that is based solely on reported lobster landings within a specified qualification period. Under the existing Area 2 effort control plan, landings of one additional pound of lobster would result in qualified applicants receiving an allocation that would increase from a 100-trap allocation to an 800-trap allocation. In addition, preliminary analysis of the impacts of the proposed trap allocation scheme indicates it is ineffective at controlling trap growth over current levels. The plan as currently proposed would substantially increase the number of traps allocated to qualified applicants compared to the current number of traps reported fished at this time. In order for overall effort to decrease, the existing plan relies on permit and trap transfers. However, the 50% conservation tax associated with the initial permit and trap transfer process will likely discourage a significant number of transfers in the early years of the program. While these transfers will eventually decrease effort, it will likely take an extended period of time to see these effects. Restrictive vessel upgrade restrictions associated with the proposed permit and trap transfers are also likely to discourage transfers.

The Management Board has directed the jurisdictions with Area 2 permit holders to work with the Area 2 LCMT to modify components of the effort control plan so that all jurisdictions are capable of implementing and a plan that will not allow effort to increase if and when the resource recovers in Area 2.

2.0 MANAGEMENT MEASURES:

2.1 Area 2 Effort Control

Replace the Addendum IV Area 2 Effort Control Measures:
This Addendum replaces section 5.3.1 of Addendum IV to Amendment 3 of the Interstate Fishery Management Plan for American Lobster except with the language below.

Area 2 Permits:
There shall be no new Area 2 permits after December 31, 2003.

Area 2 Eligibility Period for Future Effort Control Program:

In order to qualify for an Area 2 permit endorsement, a permit holder must document landings between January 1, 1999 and December 31, 2003. This eligibility period will be included in the future effort control plan for this area.

Design a New Plan:
By the August 2005 Board Meeting, all jurisdictions with Area 2 permit holders and the Area 2 LCMT will develop a new effort control plan, which caps effort at or near current levels with the potential to adjust the levels based on the outcome of the upcoming stock assessment

3.0 RECOMMENDATIONS FOR ACTIONS IN FEDERAL WATERS

The Atlantic States Marine Fisheries Commission believes that the measures contained in Amendment #3 and subsequent addenda are necessary to limit the expansion of effort into the lobster fishery, to rebuild egg production to recommended levels and to address stock declines. ASMFC recommends that the federal government promulgate all necessary regulations to implement the measures contained in Sections 2 of this document.

4.0 COMPLIANCE

4.1 MANDATORY ELEMENTS OF A STATE PROGRAM

To be considered in compliance with Addendum VI, all state programs must include a regime of restrictions on American lobster fisheries consistent with the requirements of Section 2; except that a state may propose an alternative management program under Section 3.5 of Amendment 3, which, if approved by the Board, may be implemented as an alternative regulatory requirement for compliance.

4.2 REGULATORY REQUIREMENTS

Each state must submit its required American lobster regulatory program to the Commission through ASMFC staff for approval by the Board. A state may not adopt a less restrictive management program than contained in this Addendum, unless otherwise approved by the Board.

4.3 ADJUSTMENTS TO THE COMPLIANCE SCHEDULE

All states with Area 2 permit holders need to implement section 2 of this addendum in order to be in compliance with Amendment 3 to the American Lobster Fishery Management Plan.

This Addendum also withdrawals the required compliance deadline of July 1, 2004 for the Addendum IV Area 2 effort control plan (Section 5.3.1 of Addendum IV).

Appendix 2

Addendum VII to Amendment 3 to the Interstate Fishery Management Plan for American Lobster

***ASMFC Vision Statement*:**
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

November 2005

1.0 Statement of the Problem

In August of 2002, the Lobster Management Board asked the Technical Committee (TC) to advise the Board on the magnitude of problems in Area 2 as well as recommend an appropriate response. Board members expressed interest in TC review of trawl survey and sea sampling information to provide insight into the current situation of stock declines in Area 2 and to advise if the current Amendment and supporting addenda are sufficient to remedy the problem.

The October 2002 Technical Committee report indicated that landings had declined, the area survey indices had declined, and the incidence of shell disease was increasing. There was consensus among the TC that the current overfishing definition (F10%), in combination with the proposed management measures, were not sufficient to remedy the current stock declines observed in Area 2 and spawning stock biomass needed to be rebuilt. The Lobster TC recommended reducing fishing mortality in Area 2, reducing effort in Area 2, and continuing to work on a control rule that incorporates both f-based and biomass based reference points to offer better management advice to varying stock conditions.

2.0 Background

In February 2003, the Lobster Board took Emergency Action to increase the minimum gauge size for lobsters in Area 2 on an accelerated time scale and initiated action to rebuild the lobster stock in Area 2 in 2003 through Addendum IV.

Addendum IV included an interim benchmark goal based on survey information and a Total Allowable Landings to be used as a performance measure. This Addendum included an effort control program and gauge increases for Area 2. The Board had concerns with the Area 2 effort control plan including the inability of several jurisdictions to implement portions of the plan.

In February 2004, the Atlantic States Marine Fisheries Commission Lobster Board (Board) passed Addendum VI to Amendment 3 of the Interstate Fishery Management Plan for American Lobster. This addendum required all jurisdictions with Area 2 permit holders (MA, RI, CY, NY, & NJ) to work with the Area 2 LCMT to develop a new effort control plan. The plan would cap effort at or near current levels with the potential to adjust the levels based on the outcome of the upcoming stock assessment by the August 2005 Board Meeting. Addendum VI suspended implementation of a previously approved effort control plan for Area 2 found in Addendum IV.

The Board acted in response to concerns of the Area 2 Effort Control Plan Implementation Committee comprised of representatives from the jurisdictions with Area 2 fishermen including Massachusetts, Rhode Island, Connecticut, New York, and NOAA Fisheries. This committee found that several jurisdictions could not implement portions of the original plan. Moreover, preliminary analysis indicated the plan was ineffective at controlling trap growth over current levels. The specific problems identified in the previous plan were two-fold: the aggregate allocations were too liberal – far beyond the recent levels fished, and the allocation rules were considered arbitrary because fishermen were given either 100 or 800 traps if reported landings were more - or less - than 2,000 lbs. in a single year during a 5 year period: 1999-2003.

The Board, in two separate actions,[1] directed jurisdictions with Area 2 permit holders to work with the Area 2 LCMT to modify components of the effort control plan so that all jurisdictions will be capable of implementing the plan specifics and to ensure that it will not allow effort to increase if and when the resource recovers in Area 2. Board members from RI & MA have been clear in their intent to craft a plan that would capture the attrition seen in the fishery in the past five years. Rhode Island fishery statistics show a 45% decrease in traps fished and a 34% decrease in the number of fishermen fishing traps since 1999. Analogous data from Massachusetts show a 37% decrease in traps fished and the same decrease (34%) in the number of fishermen fishing traps since 1999. NY and CT data are not readily available but similar trends are expected (Figures 1 and 2).

It should be noted that LCMT members and industry representatives throughout the development of Addendum IV (2002 - 2003) had urged the Board not to adopt a proposed cap on landings, a 1.14 million lbs. quota. They urged the Board to consider the conservation benefits of reduced fishing effort attributable to fishermen leaving the industry or the LMA, and the down-sizing of many fishing operations due to declining catches and profits. Most permit holders do not fish their current allowed maximum trap limit of 800 traps. Table 1 demonstrates the degree of latent effort in the fishery.

3.0 Introduction

The purpose of this management plan is to establish a multi-state effort control program for Lobster Conservation Management Area 2 that governs traps fished in state and federal waters to cap effort (traps fished) at recent levels and allows adjustments in traps based on future stock conditions. This plan attempts to capture the attrition from the fishery, caused by stock decline, thereby preventing a return of overall fishing levels to historic highs of the late 1990's.

This plan limits participation to permit holders who have been active in the fishery in recent years, creates permit-holder specific trap limits that are unique and based on reported traps fished and landings, and establishes a transfer program that allows the transfer of trap allocations with a conservation "tax". Limiting access and allocating a set number of traps will also allow managers to more precisely quantify the universe of known effort in Area 2 and thus facilitate overall management of the resource.

A significant concern in any effort control involves the issue of activating latent effort – i.e., the so-called "pregnant boat syndrome" wherein a single lobster operation with a single fishing history but dual state and federal permits, might split those permits between two entities therein doubling effort. This plan address this issue by ensuring that a single fishing history will result

[1] *From the August 2004 Board meeting:*
Motion to draft Addendum VI to modify the effort control plan 5.3.1 of addendum IV for Area 2. The states shall work with the Area 2 LCMT and consider an effort control plan that creates a mechanism for trap reduction in the short term to reduce fishing effort. This plan addendum shall be presented at the November annual meeting to the Board.
Motion made by Mr. McKiernan; seconded by Mr. Gibson. Motion carries.
From the November 2004 Board meeting:
Move to add under section 2.0 of Addendum 6 which states, "by the August 2005 Board Meeting, all jurisdictions with Area 2 permit holders and the area 2 LCMT will develop a new effort control plan, which caps effort at or near current levels with the potential to adjust the levels based on the outcome of the upcoming stock assessment.
Motion by Mr. Lapointe; seconded by Mr. Gibson. Motion carries.

in no more than one trap allocation regardless of whether that single history was created by a dual permit holder.

4.0 Management Measures

4.1 Area 2 Effort Control
This addendum replaces the Addendum VI Area 2 Effort Control measures in section 2.1 of Addendum VI to Amendment 3 of the Interstate Fishery Management Plan for American Lobster.

4.1.1 Mandatory Elements
4.1.1.1. Qualification for Area 2 Permits. (*This replaces section 5.3.1 Qualification for Area 2 Permit Holders of Addendum VI to Amendment 3 of the Interstate Fishery Management Plan for American Lobster.)*

a) Moratorium on new permits for commercial fishing of lobster traps in Area 2. No person shall land lobster taken by pots from Area 2 in any state unless that person has been issued an Area 2 pot allocation by their home state.

b) Standards for qualification:

i. Moratorium on permit splitting accomplished through the establishment of a new joint state/federal licensing scheme that identifies each fishing operation as a combination of the individual permit holder at the state level and the federally permitted vessel.

ii. No vessel or permit holder shall hold more than one allocation that corresponds to a single fishing history- The purpose of this section is to prevent trap proliferation that might occur through permit splitting or stacking. That is, a dual state and federal permit holder acting as a single operation might qualify and receive an allocation on both permits under the same fishing history. If those dual permits were subsequently split and allowed to fish the full allocation under each permit, or if the permit allocations were allowed to be combined, then there exists the potential to double fishing effort.

iii. Nothing shall prevent the owner of two or more vessels that have trap allocations assigned to them based on separate fishing histories from owning or transferring or acquiring a vessel with its assigned fishing history or transferring trap allocation to another vessel or permit holder eligible to fish in Area 2.

iv. Nothing shall prevent a holder of a federal permit without a pot allocation from acquiring pots from an allocation holder once a transferability program is accepted and implemented.

c) There will be a coordinating committee to review appeals and proposed resolutions developed by the management agency of a permit holder's home state. The purpose of this committee is to facilitate communication and coordination, which is expected to result in more consistent decisions amongst the decision making entities. The coordination committee may provide comment to alert a home state of any concerns with the proposed solution for consistency with similar decisions in the other states. The federal government shall have the opportunity to sit on this committee so that it may provide its perspective on these issues. The decision of the home state or federal agency shall be the final determination on allocations.

4.1.1.2. Trap Allocation Authority-*Assign primary authority to states to oversee trap allocations to its permit holders.*

a) States shall process and determine trap allocations for eligible permit holders. For dual permit holders, to better ensure consistency across jurisdictions, states shall forward all proposed allocations to NMFS for its consideration, along with its rationale in setting the allocation at the proposed level.
b) States and NMFS shall ensure vessels or permit holders do not receive duplicate allocations for the same catch history from different jurisdictions.
c) In the event of a discrepancy between agency proposed allocations for Area 2, the dual permit holder is restricted to fishing the lesser of the two allocations. This scenario of a fisherman with different Area 2 permit allocations is distinct from and does not implicate the scenario of a multi-area fisherman having different allocations in those different areas. The Commission has already addressed the principle of allocating pots to fishermen with multiple elected areas in section 3.2 of Addendum IV and nothing in this section of proposed Addendum VII is inconsistent with that previously decided section in Addendum IV.

4.1.1.3 Establish Area 2 fishery-wide overall Trap Allocation Cap.

This cap shall be subject to Board approval and constitutes the maximum number of traps allocated among all permit holders fishing in Area 2 from states of RI, MA, CT, NY, and NJ, and any other state with verifiable landings based on the documentation criteria established. The Trap Allocation Cap includes traps granted through any appeal process established by the Addendum.

4.1.1.4. Compliance
States shall incorporate trap levels and fishery performance into the Annual Lobster Compliance report due to ASMFC's Plan Review Team on March 1.

4.1.1.5. Data Disputes
Permit holders can request corrections to qualifying data if errors are found attributable to data entry and mathematical errors in logs. However, state-issued recall-log catch reports and/or logbooks signed by the permit holder are considered the best available data.

Permit holders who had submitted catch reports for the performance period signed under the pains of perjury will not be allowed to furnish additional catch/effort data that is inconsistent with records already furnished to state and federal government.

Appeals would only be accepted for a finite period (to be determined by each jurisdiction) after the program has been approved and notification has been sent to permit holders.

4.2.1 Optional Elements
4.2.1.1 Trap Allocation- *Devises a trap allocation system that grants participants fishing authorization for a specific trap number that is commensurate with their recent fishery performance in traps and landings. Permit holders will be prequalified in 2006 for their 2007 allocation. Appeals pursuant to this plan shall occur in 2006. This period is necessary to address convoluted permit histories and develop rules to regulate transfer of trap allocations.*

Each permit holder's unique fishing history determines his or her initial trap allocation. Acceptable documentation for verifying recent fishery performance (both pounds landed and traps fished) complement the federal requirements used recently for Areas 3, 4, and 5 (See Appendix A). Landings must have occurred at a port located in a state adjacent to Area 2 (i.e., Massachusetts, Rhode Island, Connecticut, and New York). *The purpose in restricting landings to an adjacent port is to ensure that only those fishers who actually fished in Area 2 – as opposed to the many who designated Area 2 on their permit but never fished there –will be eligible to qualify. Physical, geographical and landings data, and anecdotal information, dictates that Area 2 fishers historically landed in adjacent ports.*

Participants are required to submit further information as requested by the allocation authority should discrepancies arise among documentation for qualification and allocation. Any permit holder who submits fraudulent documentation may have the allocation permanently revoked.

Grant initial Trap Allocation based on highest value of Effective Traps Fished, during <u>2001-2003</u>.

"Effective Traps Fished" is the lower value of 1) the maximum number of traps calculated or reported fished for a year; and 2) the predicted number of traps that is required to catch the reported poundage of lobsters for a year. This allocation program is expected to result in an initial aggregate trap allocation that would exceed 2003 aggregate traps fished by about 23%. To avoid the "single-year" effect on trap allocation, the maximum "effective" traps for the 3 years is used. In no case would an individual's initial trap allocation exceed their maximum number of traps fished during the performance period. An individual's Initial Trap Allocation is determined as follows:

1. "Predicted Traps Fished" are calculated for 2001, 2002, and 2003 from their total landings in each of those years using the established regression relationship for LMA Area 2 (Figure 3 & Table 2). The Board's preference would be to use only landings from Area 2, however, much of the landings data available does not universally contain sufficient resolution to determine where the landed lobster were caught. Consequently, a permit holder's total landings during the time period constitutes the best available information across all management jurisdictions and are the authorized basis for meeting the purposes of this plan.

2. Predicted Traps Fished and a State's most accurate Calculated or Reported Traps Fished is compared for each year and the lower value would be the "Effective Traps Fished"
3. Trap Allocation is the highest value of the three annual "Effective Traps Fished" values.

4.2.1.2. Trap Reductions

<u>Issue One</u>

If overall Initial Trap Allocations exceed the Board-approved Trap Allocation Cap, reduce trap allocation (in subsequent years) reducing each permit holder's trap allocation by a specific percentage to reach the Trap Allocation Cap.

Issue Two
If, after a stock assessment is completed, further trap reductions are warranted each permit holder's trap allocation would be reduced by a percentage (fishery – wide) to meet trap allocation goals.

4.2.1.3. Transferability
Allow transferability of trap allocations among permit holders to increase or decrease the scale of their business.

States shall develop a transferability program after initial allocations have been finalized. In addition, states shall develop an interstate transfer program for permit holders seeking to transfer permits and traps between states. These interstate transfers are allowed once NMFS accomplished complementary rules.

4.2.1.4. Monopoly Clauses -*An anti-monopoly clause is intended to prevent entities from controlling excessive numbers of permits or traps.*

No single company or individual may own, or share ownership of, more than 2 qualified LCMA 2 federal permits. However, those individuals who have more than 2 permits in December 2003 may retain the number they had at that time but may not own or share ownership of any additional permits.

4.2.1.5. Appeal for Medical/Military Hardships
Permit holders who meet the qualifications in Appendix B may request their fishing performance for the years 1999-2000 be considered in qualifying for the initial trap allocation.

4.2.1.6. Minimum Size
The Minimum Size for Area 2 is 3-3/8" carapace length.
Future addenda or plan amendments may require adjustments to minimum gauge sizes pending stock assessment results.

5.0 Recommendations for Actions in Federal Waters

The Atlantic States Marine Fisheries Commission believes that the measures contained in Amendment #3 and Addenda I-VII are necessary to limit the expansion of effort into the lobster fishery, to rebuild egg production to recommended levels and to address stock declines. ASMFC recommends that the federal government promulgate all necessary regulations to implement the measures contained in Sections 4 of this document.

Appendix 2

Table 1. Frequency of maximum traps fished (per fishermen) among Area 2 lobstermen in MA (1999-2004) & RI (1999-2003).[2]

	Count of Permit Holders from Massachusetts			
Range of Traps	2001	2002	2003	2004
0 (DNF)	162	150	169	186
1 - 100	50	47	40	43
101 - 200	24	22	20	13
201 - 300	13	19	21	20
301 - 400	19	15	21	11
401 - 500	9	12	4	8
501 - 600	4	4	5	2
601 - 700	3	4	2	2
701 - 800	21	32	24	20
> 800	1	1	0	1
Total	306	306	306	306

	Count of Permit Holders from Rhode Island		
Range of Traps	2001	2002	2003
0 (DNF)	1124	1156	1212
1 - 100	144	131	115
101 - 200	41	35	29
201 - 300	24	23	13
301 - 400	15	19	12
401 - 500	15	12	15
501 - 600	13	5	9
601 - 700	6	8	8
701 - 800	100	100	76
> 800	11	4	4
Total	1493	1493	1493[3]

[2] Note that this is a retrospective summary of traps fished by current (2004) permit holders, thus total number of permit holders does not vary inter-annually in RI and MA, respectively.

[3] The most recent (June 26, 2005) analysis by RI officials on the status of eligible permit holders, recalculated the number of permit holders eligible to remain in the fishery (reported lobster landings with traps during 2001-2003), lowering the count from 622 to 404. Permit holders who failed to renew their permit will likely not be eligible to remain in the fishery.

Appendix 2

Table 2. Regression output tables for 5-year ('99-'03) and 3-year ('01-'03) periods showing predicted traps fished for given levels of annual landings.

Pounds Landed	Predicted Traps		Pounds Landed	Predicted Traps		Pounds Landed	Predicted Traps
0	0		3,000	398		6,000	623
100	44		3,100	407		6,100	630
200	69		3,200	415		6,200	637
300	90		3,300	423		6,300	643
400	108		3,400	432		6,400	650
500	125		3,500	440		6,500	657
600	140		3,600	448		6,600	663
700	155		3,700	456		6,700	670
800	169		3,800	464		6,800	676
900	183		3,900	472		6,900	683
1,000	196		4,000	480		7,000	689
1,100	208		4,100	487		7,100	695
1,200	220		4,200	495		7,200	702
1,300	232		4,300	503		7,300	708
1,400	243		4,400	510		7,400	714
1,500	254		4,500	518		7,500	720
1,600	265		4,600	525		7,600	727
1,700	276		4,700	532		7,700	733
1,800	286		4,800	540		7,800	739
1,900	296		4,900	547		7,900	745
2,000	306		5,000	554		8,000	751
2,100	316		5,100	561		8,100	757
2,200	326		5,200	568		8,200	763
2,300	335		5,300	575		8,300	769
2,400	345		5,400	582		8,400	775
2,500	354		5,500	589		8,500	781
2,600	363		5,600	596		8,600	787
2,700	372		5,700	603		8,700	793
2,800	381		5,800	610		8,800	799
2,900	389		5,900	617		8,900	800

Appendix 2

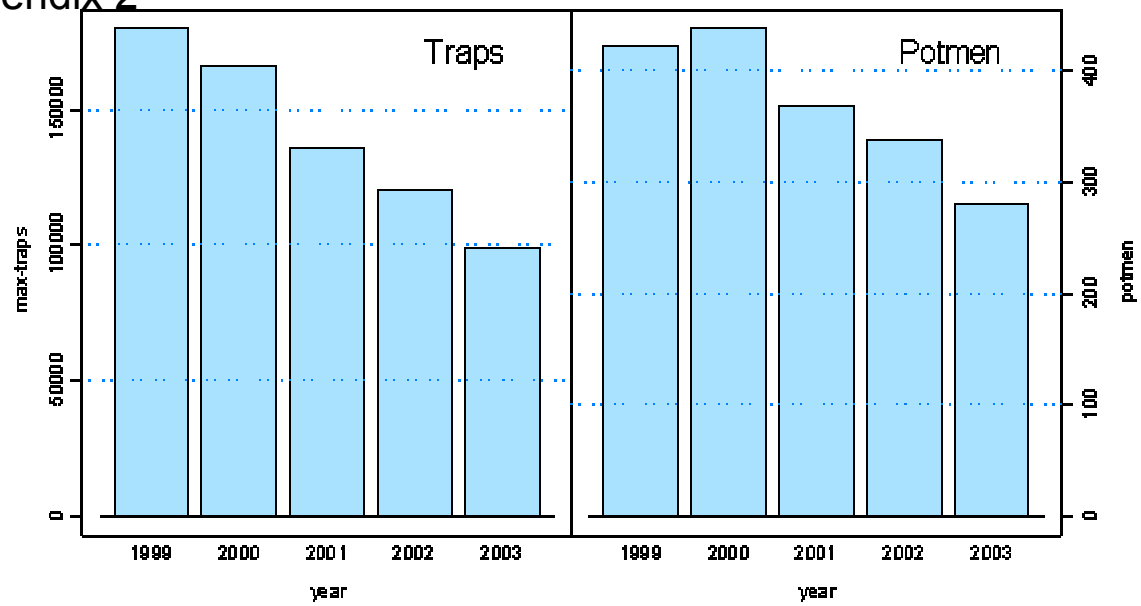


Figure 1. Attrition in RI Lobster Trap Fishery: 1999-2003.

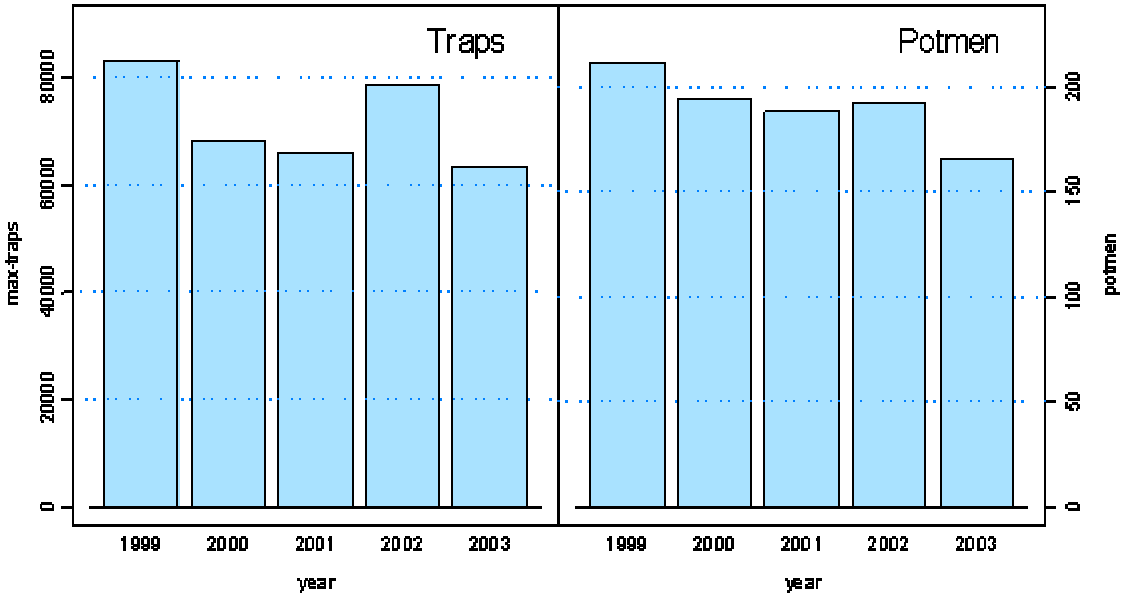


Figure 2. Attrition in MA Southern waters lobster trap fishery: 1999-2003.[4] See footnote below regarding data accuracy.

[4] Note that MA historical counts of traps fished and number of fishermen depicted here is an estimate from MA catch reports and may include some fishing beyond LMA 2, including Areas 3 and Outer Cape Cod. Data were selected for fishermen who fish in MA statistical reporting areas that closely coincide with Area 2 but not exclusively in Area 2. Since 2004, MA lobster trap fishermen are required to select a single LMA so more recent counts of traps (44,361) and fishermen (137) are considered more accurate.

Appendix 2

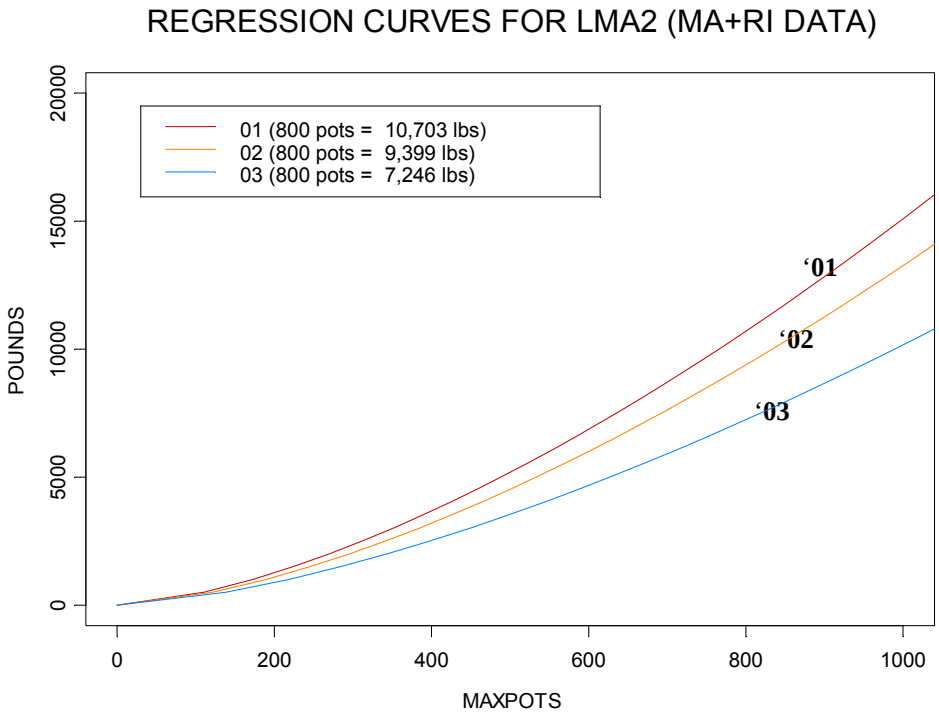


Figure 3. Regression curves depicting the relationship between traps fished and pounds landed in each year between 1999 – 2003 depicting an annual decrease in catch rates.

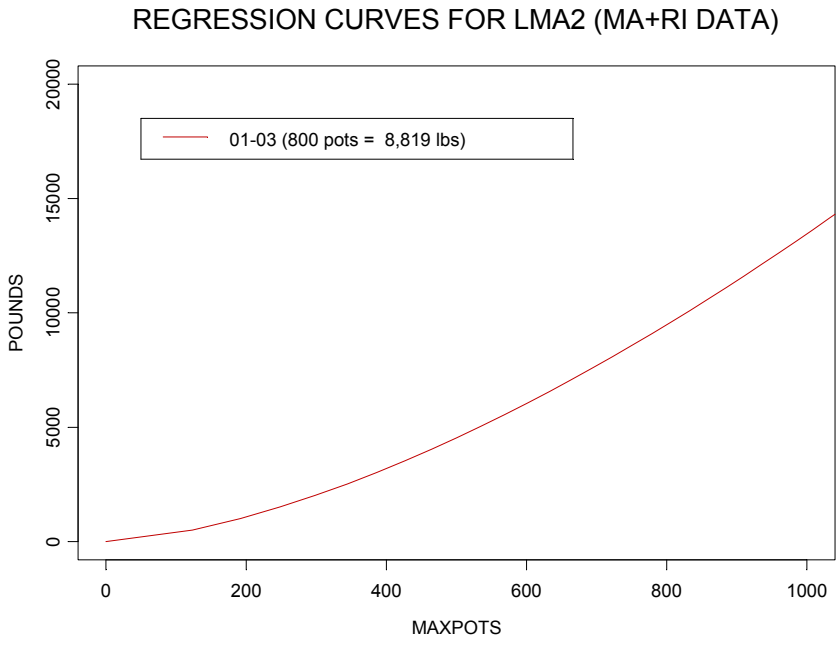


Figure 4. Regression curves depicting the relationship between traps fished and pounds landed. Data are combined into a 5-year data set (1999-2003) and then selected for only the three most recent years (2001-2003). Data are combined for RI and MA.

Appendix 2

Appendix A

Proposed Hierarchy of Documentation for Allocating Traps:

For pounds landed

One or more of the following:

1. Official state reporting documentation showing pounds of lobster landed, including but not limited to

i. state report cards;
ii. state vessel interview forms;
iii. state sea sampling observer reports; &
iv. catch reports; or

2. Federal fishing trip report (NOAA Form 88-30); or
3. Federal Port Agent Vessel Interview forms (NOAA Form 88-30); or
4. Federal Sea sampling Observer Reports; or
5. Personal vessel logbooks; or
6. Sales receipts or landing slips.

For traps fished

One or more of the following:

1. Official state reporting documentation showing number of traps fished, including but not limited to

i. state report cards;
ii. state vessel interview forms;
iii. license application forms;
iv. state sea sampling observer reports;
v. catch reports; or

2. Federal fishing trip report (NOAA Form 88-30); or
3. Federal Port Agent Vessel Interview forms (NOAA Form 88-30); or
4. Federal Sea sampling Observer Reports;
5. Federal Fishing Vessel and Gear; or Damage Compensation Fund Reports (NOAA Form 88-176); or
6. Personal vessel logbooks; or
7. Tax returns and sales receipts.

Appendix B

PROPOSED APPROACH FOR ALTERNATIVE ACCESS TO THE AREA 2 LOBSTER FISHERY BASED ON LENGTHY INCAPACITATION DURING THE PROPOSED 2001-2003 QUALIFYING PERIOD

1) The qualifying period used to determine the allocation of traps is based on:
   A. A license holder must have landed lobsters with traps during any year from 1999-2003. This demonstrates recent participation in the fishery;
   B. A license holder must possess, and present to the state marine fisheries management agency, written documentation of a material incapacitation during the period 2001-2003, such documentation circa the date of the incapacitation and notarized at the time that the appeal is presented.
   C. Individuals who qualify under these requirements can use landings from any year or years (highest or the average) during the years 1999 and 2000 as the basis for their allocation, provided that the individual must also have landed lobsters with traps during 2004, and must have possessed a state or federal commercial fishing vessel registration and/or a state or federal commercial fishing license to land lobster continuously during the period 1999-2004.
   D. The regression equation used to determine individual trap allocations will be based on data for the year or years used by the applicant for his landings. (This means that higher landings are needed for the same number of traps if the year chosen is a more productive year.) The accuracy of the individual landings used to allocate traps will be verified by a State agency prior to that agency certifying an allocation of trap tags.

Definitions:

Material - the closest definition to a legal situation is "of importance to a case; relevant."

Incapacitation - to make legally ineligible; disqualify.

Note on usage in the context of this proposal: "material incapacitation" is intended to account for an event beyond the control of the license holder such as military service or a medical condition. It is not intended to account for a choice of the license holder to pursue other interests or to an irrelevant medical condition (e. g. a broken bone or short-term illness would not have incapacitated a person for three years).

Circa - approximately at the time of the event.

Appendix 3

Addendum XII to Amendment 3 to the Interstate Fishery Management Plan for American Lobster

***ASMFC Vision Statement*:**
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

Approved February 2009

Appendix 3

Table of Contents

1.0 Statement of the Problem 2
2.0 Background 3
2.1 History of Qualification and Allocation Plans 3
2.2 History of Most Restrictive Rule 5
2.3 History of Transferability 5
3.0 Foundational Principles 6
3.1 Principles Governing Permits 6
3.2 Principles Governing Transfers of Fishing History 6
4.0 Management Measures 7
4.1 Initial Qualification and Trap Allocations in LCMAs with History-based Allocation Programs (currently LCMA 2, 3, 4, 5, 6 and OCC): 7
4.2 Most Restrictive 8
4.3 The Effect of Permit & Trap Allocation Transferability on LCMAs with History-based Allocations (currently LCMAs 2, 3, 4, 5, 6 and OCC) 9
4.4 The Effect of Permit & Trap Allocation Transferability on LCMAs without History-based Allocations (currently LCMA 1) 12
4.5 Compliance 12
5.0 Recommendations for Actions in Federal Waters 13
6.0 Appendix 14
7.0 References 14

Executive Summary

Amendment 3 to the Interstate Fishery Management Plan (FMP) for American Lobster established limited entry controls on fishing effort in all Lobster Conservation Management Areas (LCMAs), except LCMA 1. These effort control plans have qualified permit holders to fish in each LCMA based on LCMA-specific rules regarding each permit's fishing history fishing within the LCMAs. Moreover, three of the plans have established transferability programs in which permit holders can transfer trap allocations among themselves. This Addendum addresses issues that arise when fishing privileges are transferred, either when whole businesses are transferred, when dual state/federal permits are split, or when individual trap allocations are transferred as part of a trap allocation transferability program. These challenges were identified by the agencies (state and federal) that administer permits and trap tag authorizations. Issues included are a centralized database to monitor permit and trap allocation transfers and minimizing impacts of transferable trap allocations on lobstermen and permit holders authorized to fish in LCMA 1, the only LCMA without a history-based effort control plan. The measures in this document are intended to consistently apply principles and guidelines necessary to govern the transfers of permits and trap allocations across all applicable lobster LCMAs.

1.0 Statement of the Problem

In December 1997, the Atlantic States Marine Fisheries Commission (Commission) approved 11 goals in Amendment 3. These goals sought not only to conserve the lobster stock at sustainable levels, but also to ensure flexibility, to promote economic efficiency, and to maintain existing social and cultural features of the industry where possible (ASMFC, 1997).

The Commission has sought to further the goals of the FMP by implementing history-based limited access programs in six of its seven LCMAs. All of these LCMA-specific limited access programs are similar in that they all attempt to cap expansion of fishing effort – first, by qualifying participants based upon the applicants ability to document past fishing in the LCMA and, second, by allocating some number of traps, also based upon the applicant's ability to document the level of past effort in the LCMA. Moreover, three of the LCMAs have introduced a third step, trap allocation transferability programs in which permit holders can transfer full or partial trap allocations among themselves, subject to a conservation tax resulting in an overall trap allocation reduction. These programs are desirable as a means to provide permit holders with opportunities to enhance efficiency, or respond to inadequate trap allocation by obtaining additional allocation from others scaling down or leaving the fishery.

Despite the overall similarity of the effort control plans, administration of six similar, but not identical, plans involving potential regulations by 12 states, from Maine to North Carolina and NOAA Fisheries, is obviously complex and challenging. Not only must all jurisdictions implement each addenda, but they must implement each addenda in a substantially identical fashion lest the overall integrity of the plan be compromised and the effectiveness of the measures be lost. Due to the complexity of this program, the development and ongoing operation of a transferable trap allocation tracking systems is identified as a fundamental requirement to the effective administration of this program.

To ensure the goals of these effort control plans are achieved and not compromised by transfers of permits or trap allocations, it is imperative the principles and guidelines established through this addendum govern the transfers of permits and trap allocations. These guidelines regulate those LCMAs that have transferability programs already established through previous addenda. These guidelines would also be used in an LCMA when establishing a transfer program in the future.

In order to ensure that the various LCMA-specific effort control plans remain cohesive and viable, and that one jurisdiction's interpretation of a plan does not undermine the implementation of another jurisdiction, this addendum does three things: First, it clarifies certain foundational principles present in the Commission's overall history-based trap allocation effort control plan. Second, it redefines the most restrictive rule. Third, it establishes management measures to ensure that history-based trap allocation effort control plans in the various LCMAs are implemented without undermining resource conservation efforts of neighboring jurisdictions or LCMAs.

2.0 Background

2.1 History of Qualification and Allocation Plans

Through various Addenda since 1999, history-based effort control programs have been established in LCMAs 2, 3, 4, 5, 6, and Outer Cape Cod (OCC), leaving only LCMA 1 where trap fishing is subject to a trap cap (800 traps with the exception of some New Hampshire LCMA fishermen with a conservation equivalent trap cap of up to 1200 traps in New Hampshire

state waters) not a permit-specific trap allocation based on past fishing performance. The following is a list of Addenda and their effects:

Year	Addendum	Affected LCMAs	Result
1999	I	LCMAs 3, 4, 5 & 6	LCMA-specific history-based allocation of traps
2002	III	Outer Cape Cod	History-based allocation of traps and transferability of trap allocation among permit holders, including a "Trap Tax" for Outer Cape Cod allocation transfers
2003	IV	LCMA 3	Further reduced LCMA 3 trap allocations and established transferability of trap allocation among permit holders.
2004	V&VI	LCMA 3	Established a maximum transferable trap cap and a "Trap Tax" for LCMA 3 trap allocation transfers.
2005	VII	LCMA 2	Established a history-based allocation of traps and transferability of allocation among permit holders
2006	IX	LCMA 2	Established a "Trap Tax" for LCMA 2 trap allocation transfers

All of the aforementioned LCMA-specific effort control programs seek to control fishing mortality by constraining current and future fishing effort within each LCMA to levels near or below historic levels. However, because trap allocations for each LCMA were based on different standards and eligibility periods, many permit holders may have allocations for more than one LCMA – that, when examined in aggregate, exceed the maximum number of traps that the permit holder had ever fished historically.

The Commission's effort control strategy has consistently followed the principle that a lobster fishing history cannot be stacked and double or triple counted. Enactment of the "most restrictive rule," and the effort control plan in Addendum I, are early examples of the application of this principle. For example, immediately after implementation of Amendment 3, a person fishing in both LCMA 2 and the OCC LCMA could fish a maximum total of 800 traps – not 800 in one LCMA, plus another 800 traps in the other. Addendum VII further expanded upon this principle when it stated that fishing histories accumulated by a single fishing entity on both a state permit and federal permit (i.e., a "dual permit holder") shall be treated as a single history for the purposes of trap allocation.

Although the Commission has continually followed and expanded upon the anti-stacking principle, it has not articulated the principle as a foundational element in any of its effort control addenda. Accordingly, the problem of the how to manage and track fishing history among entities that hold state and federal permits had not been addressed. "Dual permit holders" (permit holders authorized to fish in state waters by a state license and in federal waters with a vessel permitted to fish by NOAA Fisheries under one fishing operation) have a single indivisible

history under both state and federal permits. Addendum VII's statement about a single entity having a single history references this principle, but needs to go further to be of practical application (e.g., if it is a single history, where does the history go when a dual permit is split?). If not, the problem will become exacerbated if the dual permits are split and either permit/license is transferred with an expectation by the permit holder to retain its fishing history after the transfer.

2.2 History of Most Restrictive Rule

Amendment 3 indicated that multiple area fishermen must comply with the most restrictive management measures of all areas fished "…including the smallest number of traps allocated to them for each of the LCMA fished." The intention of the most restrictive rule was to allow multi-area fishermen to continue to fish in the areas they historically have while maintaining the conservation benefits unique to each area. NOAA Fisheries adopted this concept in regulations published in 1999.

The Commission revised its "Most Restrictive Rule" policy as it applies to trap allocations in Addendum IV (2003). Addendum IV applied the most restrictive rule on an LCMA trap cap basis without regard to the individual's allocation. Fishermen who designate multiple LCMAs on their permits are bound by the most restrictive management measures of those LCMAs' trap caps. They are allowed to fish the number of traps they are allocated in the most restrictive LCMA. In 2003, the Commission recommended that NOAA Fisheries similarly reverse the earlier Amendment 3 interpretation of the "Most Restrictive Rule," to the more liberal interpretation set forth in Addendum IV. NOAA Fisheries had identified concerns that the number of traps fished could increase above current levels under the interpretation set forth in Addendum IV, and did not implement the more liberal version. The potential for an increase in effort appeared problematic since the latest stock assessment suggested that the Southern New England stock is overfished and that effort needs to decrease or be constrained in all lobster stock areas. Moreover, the administrative and enforcement burden would be increased because permit holders with multiple LCMAs will no longer have a uniform set of trap tags.

The states of Maine through Connecticut operate under a Memorandum of Understanding (MOU) with NOAA Fisheries, which allow these states to authorize the issuance of trap tags to state and federal permit holders. NOAA Fisheries administers the trap tag authorization program for all other federal permit holders authorized to fish with traps in the federal waters. All federal permit holders must follow federal regulations regardless if they are fishing in state or federal waters.

2.3 History of Transferability

Effort control plans for LCMAs 3, 2, and OCC each include transferability provisions, although each has differing levels of detail. All of the transferability provisions are similar, but none are uniform and none are currently integrated. That is, all were crafted specific to the involved LCMA and without detailed consideration of how transferability would impact fishing privileges in other LCMAs. Further, none of the plans identify an administrative mechanism for the many jurisdictions to track an individual's trap allocation as trap allocations are bought and sold amongst fisherman.

Appendix 3

The Lobster Transferability Subcommittee conducted numerous meetings from March 2007 to September 2008 to advance implementation of the Area 2 History-based Limited Entry and Individual Transferable Trap Allocation Program as specified in Addendum VII. The committee continued to discuss challenges of the multiple jurisdictional issues of allocating traps to permit holders with state and federal permits and to refine solutions for the implementation of an Individual Transferable Trap Allocation Program as specified in Addenda VII and IX. In discussing the issues related to assignment of fishing history and trap transferability, it was determined that they could affect not only the LCMA 2 transfer program, but also any lobster transfer program for LCMAs with transferable trap programs (e.g. Area 3 and Outer Cape Cod) The discussions of these meetings provide the basis for the issues and management measures contained in this Addendum.

3.0 Foundational Principles

These principles are proposed to ensure uniform treatment of fishing history and the transfer of permits and trap allocations in and across LCMAs with History-based Allocations Programs (Currently LCMAs 2, 3, 4, 5, 6 and OCC)[1].

3.1 Principles Governing Permits

3.1.1 A lobster permit and its history can not be separated. When a permit holder transfers a permit the fishing history is also transferred.

3.1.2 A single fishing entity is considered to have established a single lobster fishing history even if that person is a dual permit holder fishing under a state and federal fishing permit. Fishing histories accumulated under dual state and federal permits can not be treated as separate histories and stacked for the purposes of qualification and allocation.

3.1.3 Lobster history accumulated under dual state/federal permits can not be divided and apportioned between the permits. Because records are imprecise (and in most cases, don't exist) to determine which part of a dual permit holder's catch was caught in state waters and which part was caught in the EEZ, a dual permit holder's fishing history is considered indivisible. If a dual permit holder splits his state and federal permits, the history is considered to have gone entirely with one permit or the other permit, but not have portions with both.

3.2 Principles Governing Transfers of Fishing History

Trap allocations are a reflection of fishing history. Just as a permit holder in the past could not double his traps fished to 1,600 simply because he seasonally fished 800 traps in LCMA 2 and 800 traps in the OCC, neither should that person now be able to gain the equivalent of double counting this history by treating transferable trap allocations in separate LCMAs as independent and cumulative. When any individual transfers (sells) trap allocations from any LCMA, his trap allocation in all other LCMAs is be reduced by that same number.

1 If LCMA 1 establishes a history-based allocation program, the principles adopted through this addendum would apply unless modified through a subsequent addendum.

4.0 Management Measures

For the measures in Section 4"dual permit holder" is a permit holder authorized to fish in state waters with a state license and in federal waters with a vessel permitted to fish by NOAA Fisheries

4.1 Initial Qualification and Trap Allocations in LCMAs with History-based Allocation Programs (currently LCMA 2, 3, 4, 5, 6 and OCC)1**:**

4.1.1 Affected states and NOAA Fisheries will work together to classify all permit holders assigned trap allocations in LCMAs 2, 3, 4, 5, 6 and OCC into one of three categories:

a) State-only;
b) Federal-only
c) Dual (both state and federal)

4.1.2 If a dual permit holder "splits" his/her permits by transferring either the federal or state permit to another entity, then the entire fishing history is to remain with the federal permit for the purposes of the initial qualification and allocation decision. Alternatively, a dual permit holder who permanently relinquishes or surrenders his/her federal lobster permit can allow his/her fishing history to be transferred to his state permit.

4.1.3 To prevent migration of trap allocations between state and federal waters, recipients who qualified for initial trap allocations based solely upon a) ownership of "only" a state license without owning a corresponding federal lobster vessel permit, or b) ownership of "only" a federal vessel permit without owning a state coastal lobster license, retain solely that historic access (i.e., shall be authorized to use trap allocation in state or federal waters, but not both). For example, a permit holder who received an initial trap allocation authorized for use in LCMA 2 based on fishing history conducted solely in federal waters under the authorization of a federal permit (i.e., they did not possess a state lobster permit) is authorized to fish his/her trap allocation exclusively in federal waters of LCMA 2.

To prevent migration of trap allocations from one state's waters to another, recipients who qualified for initial trap allocations based upon a) ownership of a state license or b) a state coastal lobster license, retain historic access solely in the state the license was originally issued (i.e., shall be authorized to use the trap allocation in only one state). For example, a permit holder who received an initial trap allocation authorized for use in Rhode Island waters of LCMA 2 based on fishing history conducted in Rhode Island waters under the authorization of a state permit, is only authorized to fish his/her state trap allocation in Rhode Island waters of LCMA 2, the allocation can not be fished in Massachusetts waters. This applies to both state-only and dual permit holders.

1 If LCMA 1 establishes a history-based allocation program, the principles adopted through this addendum would apply unless modified through a subsequent addendum.

4.2 Most Restrictive

This section replaces section 3.2 of Addendum IV to Amendment 3 of the American Lobster FMP.

The most restrictive rule is necessary to maintain the conservation benefits for each area management plan. Fishermen are allowed to place traps in multiple areas, but must comply with the most restrictive management measures of all areas fished, including the smallest number of traps for the areas selected. This is the current rule in federal waters: *NOAA Fisheries follows this under its regulations* 697.19(c). *Anyone with a federal permit must follow this rule regardless of where they fish.*

Example 1:

A lobster fisherman is permitted in both LCMA 2 and 3. This individual's LCMA 2 allocation is 800 traps and based on historical participation their LCMA 3 allocation is 300 traps. The overall trap cap in LCMA 2 is 800 traps and the overall trap cap in LCMA 3 is 2600 traps.

> *Most Restrictive Rule – Amendment 3 Interpretation:* The most restrictive rule compares the trap cap and/or allocation in each LCMA (800 in LCMA 2 vs. 300 in LCMA 3) and the fisherman is limited to the most restrictive trap cap/allocation. Due to the most restrictive rule, they are limited to a total of 300 traps throughout LCMA 2 and 3, if both LCMA 2 and 3 are elected on their permit.

Example 2:

A lobster fisherman is permitted in both LCMA 2 and 3. Their LCMA 2 allocation is 800 traps and based on historical participation his LCMA 3 allocation is 1200 traps. The overall trap cap in LCMA 2 is 800 traps and the overall trap cap in LCMA 3 is 2600 traps.

> *Most Restrictive Rule - Amendment 3 Interpretation:* The most restrictive rule compares the trap cap and/or allocation in each area (800 in LCMA 2 vs. 1200 in LCMA 3) and the fisherman is limited to the most restrictive trap cap and/or allocation, which is 800 traps. Due to the most restrictive rule, they are limited to a total of 800 traps throughout LCMA 2 and 3, if both LCMA 2 and 3 are elected on their permit.

Example 3:

A lobster fisherman is permitted in both LCMA 3 and 4. Based on historical participation, his LCMA 3 allocation is 1000 traps and based on historical participation his LCMA 4 allocation is 1200 traps. The overall trap cap in LCMA 3 is 2600 traps and the overall trap cap in LCMA 4 is 1440 traps.

> *Most Restrictive Rule - Amendment 3 Interpretation:* The most restrictive rule compares the trap cap and/or allocation in each area (1000 in LCMA 3 vs. 1200 in LCMA 4) and the fisherman is limited to the most restrictive trap cap and/or allocation, which is 1000 in LCMA 4. Due to the most restrictive rule, they are limited to a total of 1000 traps throughout LCMA 3 and 4, if both LCMA 3 and 4 are elected on their permit.

Example 4:

A lobster fisherman is permitted in both LCMA 3 and 4. Based on historical participation, his LCMA 3 allocation is 1600 traps and based on historical participation his LCMA 4 allocation is 1000 traps. The overall trap cap in LCMA 3 is 2600 traps and the overall trap cap in LCMA 4 is 1440 traps.

Most Restrictive Rule - Amendment 3 Interpretation: The most restrictive rule compares the trap cap and /or in each area (1600 in LCMA 3 vs. 1000 in LCMA 4) and the fisherman is limited to the most restrictive trap cap and/or allocation, which is 1440 in LCMA 4. Due to the most restrictive rule, they are limited to a total of 1000 traps throughout LCMA 3 and 4, if both LCMA 3 and 4 are elected on their permit.

Example	Hypothetical Allocation			Number of Traps Available to Fish Under Most Restrictive Rule
	LCMA 2	LCMA 3	LCMA 4	
One	800	300		300 in either LCMA 2 or 3
Two	800	1200		800 in either LCMA 2 or 3
Three		1000	1200	1000 in either LCMA 3 or 4
Four		1600	1000	1000 in either LCMA 3 or 4

4.3 The Effect of Permit & Trap Allocation Transferability on LCMAs with History-based Allocations (currently LCMAs 2, 3, 4, 5, 6 and OCC)2

NOTE: For purposes of Addendum XII, a "complete lobster fishing business" refers to the lobster permit(s) and all associated lobster trap allocations. Any other transfers (including the sale of "all" LCMA-specific transferable trap allocations but the retention of the lobster permit by the seller) would be defined as a "partial trap allocation." A transfer is defined as a change of ownership of a partial or full trap allocation. For example, the transfer of a "partial trap allocation" includes a lobsterman with a 1000 trap allocation in LCMA 3 that transfers all 1000 LCMA 3 traps, but retains the lobster permit. The transfer of the lobster permit(s) and the 1000 LCMA 3 traps would be a "complete lobster fishing business" sale.

4.3.1 Permit and Allocation Tracking (interjurisditional database)

4.3.1.1 State-Level Tracking

Subject to the standards developed by the Lobster Transfer Committee each state shall maintain records to track all lobster trap allocations and allocation transfers.

4.3.1.2 Interjurisdictional Tracking

Upon agreement of all participating states and NOAA Fisheries, a central database will be established to track all states' lobster permit holders, their allocations and transfers. If this tracking program were not funded, then transfers across jurisdictions or a transfer involving a dual permit holder, may not be possible, resulting in an ineffective transfer program and a diminished potential for trap reduction through a conservation tax.

2 If LCMA 1 establishes a history-based allocation program, the principles adopted through this addendum would apply unless modified through a subsequent addendum.

4.3.2 Conservation Tax on Transfers

4.3.2.1 Partial Trap Allocation Transfer Conservation Tax

For each transfer of a partial trap allocation, a conservation tax is applied and is based on the applicable LCMA-specific conservation tax. Conservation tax for LCMAs with transfer programs would be at least 10%. Taxes will be applied once all agencies have allocated traps and, in the case of dual permit holders those allocations are agreed to by the adjoining agencies. States may tax their state only license holders.

4.3.2.2 Complete Lobster Fishing Business Conservation Tax

Conservation tax is based on the conservation tax applicable for the LCMA(s) with a trap allocation transfer program (LCMA 2, 3, and OCC). For LCMA(s) without an approved trap allocation transfer program (LCMA 4, 5, 6), the conservation tax does not apply. In a situation where a permit with multiple LCMAs includes both transferable and non-transferable trap allocations, the tax applies only to trap allocations in LCMAs with a transfer tax program (LCMA 2, 3, and OCC). For information on how the tax would impact trap caps in LCMA 1, see Section 4.4. Taxes will be applied once all agencies have allocated traps and, in the case of dual permit holders those allocations are agreed to by the adjoining agencies. States may tax their state only license holders.

4.3.3 Measures Applicable to both Transfers of Complete Lobster Fishing Businesses and Partial Trap Allocations

NOTE: See Appendix for a matrix of allowable transfers as well as proposed transfers that would be allowed once NOAA Fisheries enacts complementary rules and regulations.

4.3.3.1 Controls on Transfers of Allocation and permits

To prevent migration of trap allocations between state and federal waters, recipients who qualified for initial trap allocations based solely upon a) ownership of “only” a state license without owning a corresponding federal lobster vessel permit, or b) ownership of “only” a federal vessel permit without owning a state coastal lobster license, can transfer solely that historic access (i.e., shall be authorized to transfer trap allocations in state or federal waters, but not both). For example, a permit holder who received an initial trap allocation authorized for use in LCMA 2 based on fishing history conducted solely in federal waters under the authorization of a federal permit (i.e., they did not possess a state lobster permit) is authorized to transfer his/her trap allocation exclusively to a federal permit holder of LCMA 2 (*See Appendix for a matrix of allowable transfers*).

To prevent migration of trap allocations between state waters, recipients who qualified for initial trap allocation from ownership of a state license or state coastal lobster license can transfer that historic access solely in the issuing state (i.e. shall be authorize to transfer the trap allocation in one state only; the allocation can not be transferred to be used in a different state’s waters). For example, a permit holder who received an initial trap allocation authorized for use in LCMA 2 based on fishing history conducted in Rhode Island waters under the

authorization of a state permit is only authorized to transfer his/her trap allocation for use in Rhode Island state waters of LCMA 2, the allocation can not be transferred to a LCMA 2 permit holder in Massachusetts waters. This applies to both state-only and dual permit holders. (*See Appendix for a matrix of allowable transfers)*

4.3.3.2 Trap allocations that are restricted with access to state or federal waters only (see 4.1.4) can not be transferred or in any way converted to allow migration between jurisdictions, including the sale of complete lobster fishing businesses.

4.3.3.3 The recipient of a partial trap allocation from a permit that that has a multi-LCMA trap allocation must choose only a single LCMA that the transferred trap allocation will be authorized to fish in; trap fishing privileges for the other LCMAs will be forfeited.

4.3.3.4 Any permit holder who transfers a partial or full trap allocation from any LCMA will have all other LCMA-specific trap allocations reduced/debited by the same amount of trap allocation transferred.

For example, a permit holder with a 400-trap allocation authorized in LCMA 2 and 1,200-trap allocation authorized in LCMA 3 who transfers 200 traps will be left with a 200 trap allocation authorized in LCMA 2 and a 1,000 trap allocation authorized in LCMA 3.

Allocation Holder's Current Allocation	Transfers	Allocation Holder's Final Trap Allocation	10 % Transfer Tax	Recipient's Trap Allocation
400 LCMA 2		200 LCMA 2		
1200 LCMA 3	200 LCMA 3	1000 LCMA 3	20	180 LCMA 3

4.3.3.5 Once a tracking system is developed and implemented, transfers of complete lobster fishing businesses or partial trap allocations involving multiple jurisdictions are approved by every involved jurisdiction (state(s) and/or NOAA Fisheries) before the transfer is finalized.

Consensus by all impacted jurisdictions is necessary for approval of a transfer. All jurisdictions have 30 days to affirm or disapprove a transfer. The centralized database facilitates this process.

4.3.4 Measures applicable solely to Transfer of Partial Trap Allocations

A transfer application is accepted throughout the year. All documentation must be submitted by October 30 in order to be considered for the following fishing year. Applications will not be reviewed and acted upon until December 1 and are effective at the beginning of the following fishing year. These dates are subject to change by Board action to accommodate review schedules and allocation of trap tags.

All LCMAs with transferability programs have the same timeframe since transfer of an allocation in one LCMA may affect the allocation that remains in the other LCMAs.

Trap allocations are only transferable. A transfer is defined as a change of ownership of a partial or full trap allocation. Trap allocations cannot be leased.

4.4 The Effect of Permit & Trap Allocation Transferability on LCMAs without History-based Allocations (currently LCMA 1)

LCMA 1 is the only LCMA that has not established a history-based allocation program. While states (ME, NH & MA) have varying degrees of limited entry, permit holders are subject to trap caps. Moreover, under Federal regulations, all federal permit holders are eligible to elect LCMA 1 and fish traps in that area.

As fishermen fail to qualify and are squeezed out of the other limited access areas, the potential for migration of effort into LCMA 1 exists. Further, by establishing a transfer program in these other areas, it is possible that additional effort (traps) may shift into the LCMA 1. For example, a permit holder transfers all of his LCMA 3 transferable trap allocation but retains the lobster permit, he/she may elect to fish in LCMA 1, or for permit holders who do not historically qualify for access into any history-based limited access LCMA, he/she may elect and begin to fish in LCMA 1.

A permit holder will no longer be authorized to elect to fish traps in LCMA 1, after any LCMA partial transferable trap allocation transfer has been made.

Seller Current Trap cap or Allocation	Transfers	Seller Final Trap Allocation	10 % Transfer Tax*	Buyer Trap Allocation
800 LCMA 1 Trap cap – not an allocation)		Ineligible to fish in LCMA 1		
400 LCMA 2		200 LCMA 2		
1200 LCMA 3 Allocation	200 LCMA 3	1000 LCMA 3	20	180 LCMA 3

4.5 Compliance

Agencies must send a notification to permit holders with their classification (state only, federal only, or dual) prior to the next round of trap tag orders as part of the addendum implementation plan.

States must incorporate in the annual compliance report a summary of permit holders, allocations, trap tags ordered, traps fished, within each LCMA and fishery performance into the annual lobster compliance report due to ASMFC's Plan Review Team on March 1. States will work cooperatively with NOAA Fisheries to summarize information for dual and federal only

permit holders. States will report to NOAA Fisheries and ASMFC's Plan Review Team a summary of trap allocations and transfers until the database is complete.

States will enact rules making it unlawful for any permit holder to order, possess or fish with trap tags designated for an LCMA not specifically authorized by a state in compliance with Plan amendments or addenda.

5.0 Recommendations for Actions in Federal Waters

The Atlantic States Marine Fisheries Commission believes that the measures contained in Amendment 3 and Addenda I-XII are necessary to limit the expansion of effort into the lobster fishery and to rebuild lobster stocks. The Commission recommends that NOAA Fisheries promulgate all necessary regulations to implement the measures contained in Section 4 of this document.

6.0 Appendix

Matrix of transfers allowed under current rules and those that would be allowed once NOAA Fisheries enacts complementary rules and regulations:

Current Rules

Holder	**Recipient** State-only*	Dual	Federal-only
State-only*	Yes*	no	no
Dual	no	no	no
Federal-only	no	no	no

Transfers that would be allowed after NMFS enacts complimentary rules & allocations

Holder	**Recipient** State-only	Dual	Federal-only
State-only	yes*	no	no
Dual	yes*	yes*	Yes^
Federal-only	no	no	yes

*** transfers apply to in-state permit transfers only; i.e., transfers between permit holders who hold allocations from separate state jurisdictions are not and may not be allowed. This applies to both state only and dual permit holders.**
^Ability to fish traps in state waters (any state) is lost

7.0 References

ASMFC. 1997. Amendment 3 to the Interstate Fishery Management Plan for American Lobster. FMR No. 29. 1997

Appendix 4

Addendum XIII to Amendment 3 to the Interstate Fishery Management Plan for American Lobster

***ASMFC Vision Statement*:**
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

May 2008

1.0 Statement of the Problem
Addendum III to Amendment 3 of the Interstate Fishery Management Plan for American Lobster was approved in February 2002 and mandated a 20% reduction in traps fished in Outer Cape Cod Lobster Conservation Management Area from 1998 levels of traps fished to help meet lobster egg production goals and objectives. Subsequently, the Commonwealth of Massachusetts submitted an alternative effort control plan for this LCMA and the Lobster Management Board formally approved that replacement plan in December of 2003. Because the essential details of the replacement plan were not codified in a formal Addendum this Addendum is proposed. Moreover, the original plan called for a 20% reduction in traps fished form the 1998 levels by 2008. While substantial progress has been made toward that goal, this Addendum drops the 2008 deadline to meet the 20% reduction due to improved stock conditions and the change to the biological reference points, specifically the overfishing definition.

2.0 Introduction
Addendum III to Amendment 3 of the Interstate Fishery Management Plan for American Lobster mandated a 20% reduction from 1998 levels of traps fished in the OCC LCMA to help meet lobster egg production goals and objectives. The 1998 baseline was calculated at 33,234 traps by tallying traps reported fished by commercial lobster permit holders on annual Massachusetts Division of Marine Fisheries (MA DMF) catch reports (see Appendix A).

The basis of the original plan crafted by the Outer Cape Lobster Conservation Management Team in 2001 was to meet region-specific Outer Cape conservation goals. The original effort control plan's basic principles were to identify coastal and offshore lobster permit holders who fished traps in the area (in 1999 or 2000), cap current levels of effort by granting each eligible permit holder a transferable trap allocation based on their history of landings as documented on catch reports, and preclude new effort from entering the area.

Massachusetts Division of Marine Fisheries submitted a conservation equivalency of the plan that replaced the plan in many aspects while attempting to accomplish the same objectives. Specifically this Addendum XII replaces sections 2.1.7.2 and 2.1.7.3 of Addendum III.

3.0 Background
The original effort control plan sought to identify coastal and offshore lobster permit holders who fished traps in the area (in 1999 or 2000), cap current levels of effort by granting each eligible permit holder a transferable trap allocation based on their history of landings as documented on catch reports, and preclude new effort from entering the area.

See Addendum III excerpt:

> ***2.1.7.2 Trap Reduction Schedule for Lobster Management Area Outer Cape (OCLMA)***
> .Beginning in 2002 and extending through 2008, a 20% reduction in the total number of traps allowed to be fished will occur in the Outer Cape lobster management area. An additional 5% reduction in the total number of traps allowed to be fished per year may be employed in 2006 and

2007, if necessary, to meet lobster egg production goals and objectives. In order to control the expansion of fishing effort, an overall total number of traps allowed to be fished in OC Lobster Management Area (OCLMA) has been established from the sum of individual maximum traps reported by each OCLMA lobster fisher on Massachusetts (MA) catch reports in the year 1998. A reduction of this total number of traps by 20% will be implemented and resulting individual trap allotments will be defined accordingly during the stock rebuilding period. The starting trap allotments for each lobster fisher in the year 2002 will be based on MA 2000 catch report statistics. Allotments will be debited thereafter as needed by MA Division of Marine Fisheries (DMF). Participants in the 2001 OC lobster tap fishery, who received a license through the MA DMF or waiting list provisions during 2001, and as a result, have no prior lobster fishing history (i.e. filed catch reports) in the OCLMA, will receive a trap allotment based on proof of documentation of the number of traps they fished during 2001. These allotments will be apportioned from a percentage of the overall trap cap, not to exceed 2% of the total. Those who received a transferred license with an OCLMA fishing history will receive a starting trap allotment based on that history.

2.1.7.3 Annual Trap Transfer Period and Passive Reductions

The annual trap transfer period will be January 1 – March 31. Trap tags may be transferred among OC lobster fishers to allow an individual business to build up or down within the maximum allowable 800 trap limit, however, a passive reduction in traps will occur with each trap transfer event at the rate of 10%. For example, if 100 trap tags are transferred to a fisher, the net transaction received by that lobster fisher will be 90 and the overall OC trap cap will be reduced accordingly. The trap cap may be adjusted downward over time through active and/or passive reduction measures until such time that the fishing mortality rate is reduced to a level below F10%.

Each time a lobster license is transferred to another lobster fisher within the OC the trap tag allowance associated with that license will be reduced by 10%. No new participants will be permitted to partake in the OC lobster fishery without receiving trap tags through a transfer from those fishing within the established total trap cap.

A trap haul-out period will occur from January 1 through March 31 each year to assist in the enforcement of the tap cap. There will be no lobster traps in the waters of the OC during this time period.

The Commonwealth of Massachusetts' alternative plan approved by the Board was similar in design and function to the original LCMT-developed plan except that the amended plan added an extra year (2001) to the eligibility period, and trap allocations would be based on each permit holder's unique fishing history using pounds landed as an input parameter in addition to traps reported fished during the years 2000 – 2002. The number of traps reported fished is not one of the agency's audit elements and therefore catch statistics of pounds harvested were considered more dependable than traps reported fished.

This addendum codifies those rule changes and further eliminates the 2008 deadlines to meet the 20% reduction in traps allowed to be fished.

A significant concern in any effort control involves the issue of doubling of effort when a single lobster operation that holds state and federal fishing permits might split those permits between two vessels – one continuing to fish in state waters and the other in federal waters – and therefore doubling fishing effort. This plan address this issue by ensuring that a single fishing history will result in no more than one trap allocation.

4.0 Management Measures

4.1 LCMA OCC Proposed Effort Control Plan

This addendum replaces the Addendum III OCC LCA Effort Control measures in section 2.1.7.2 & 2.1.7.3 of Addendum III to Amendment 3 of the Interstate Fishery Management Plan for American Lobster.

4.1.1. Qualification for Outer Cape Permits to fish lobster traps

a) Moratorium on new commercial permits to harvest lobster by use of pots and SCUBA in OCC LCMA. No person shall land lobster taken by pots from OCC LCMA in any state unless that person has been issued an OCC LCMA pot allocation under the provisions of these rules.
b) Eligibility shall be based on verifiable landings of lobster caught by traps or by hand using SCUBA gear from the OCC LCMA in any one year from 1999 – 2001 (Exception: those who received permits off a state managed "waiting list" in 2001 may appeal for an OCC LCMA Trap Allocation based on their 2002 fishing performance).

4.1.2. Trap Allocation Authority

a) State shall process and determine trap allocations for eligible permit holders. For dual permit holders, to better ensure consistency across jurisdictions, states (MA) shall forward all proposed allocations to NMFS for its consideration, along with its rationale in setting the allocation at the proposed level.
b) States (MA) and NMFS shall ensure vessels or permit holders do not receive duplicate allocations for the same catch history from different jurisdictions.
c) In the event of a discrepancy between agencies proposed allocations for OCC LCMA, the dual permit holder is restricted to fishing the lesser of the two allocations.

4.1.3. Trap Allocations

a) Trap allocations for use in the OCC LCMA shall be assigned based on the highest annual level of Effective Traps Fished during 2000, 2001 and 2002.
b) Effective Traps Fished shall be the lower value of the maximum number of traps reported fished for a given year compared to the predicted number of traps that is required to catch the reported poundage of lobsters for a given year during 2000, 20001 and 2002.
c) For coastal lobster permit holders who fished for lobster primarily by hand using SCUBA gear, Effective Traps Fished shall be the annual predicted number of traps that is associated with the permit holder's reported poundage of lobsters during the performance years 2000 – 2002.
d) The value for predicted number of traps shall be based on a MA DMF published analysis of traps fished and pounds landed for the OCC LCMA and that relationship is depicted in Figure 1.

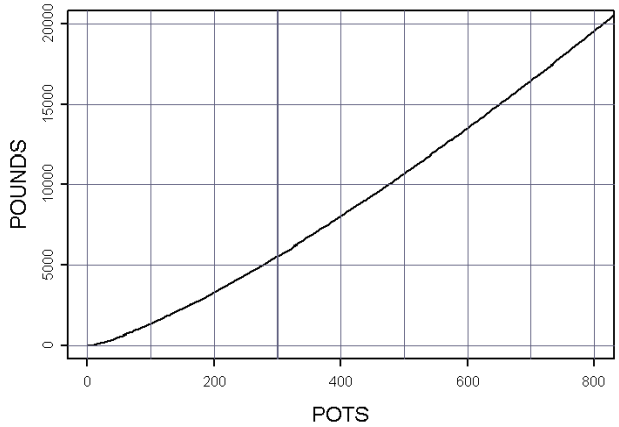


Figure 1. Relationship between pounds harvested and traps fished used to allocate Initial Trap Allocation. Data to calculate the relationship was obtained from Massachusetts catch reports from fishermen fishing primarily in the OCC LCMA during years (1997-2001).

e) It shall be unlawful to fish more than 800 traps aboard any vessel involved in the commercial lobster fishery in OCC LCMA, regardless of the number of fishermen holding coastal or offshore commercial lobster permits on board said vessel.
f) Appeals to eligibility or trap allocations shall only be considered based on technical data errors and/or miscalculations such as on catch reports.

4.1.4. Trap Reductions

The 2008 deadline to meet the goal of reducing by 20% the number of traps allowed to be fished is repealed by this Addendum. Moreover the additional 5% reduction in traps identified in section 2.1.7.2 of Addendum III if necessary given stock conditions are determined not to be necessary as of the date of this addendum. No further active trap reductions shall be enacted under this Addendum. Passive trap reductions shall continue when permit and trap allocations are transferred, until altered by a future addendum.

4.1.5. Transfer Programs - *Enable permits and/or trap allocations to be transferred.*

a) Fishermen with OCC LCMA trap allocations may transfer some or all of their allocation to other lobstermen in 50 trap increments.
b) Fishermen with a trap allocation less than 50 may transfer all of their allocation.
c) Any fisherman whose trap allocations declines below 50 traps after transfer shall have the remaining trap allocation and the permit retired.
d) All transfers are subject to a 10% trap tax.
e) A fisherman with authorized to fish in LCMA 1 or holding a permit and trap allocation for LCMA 2 issued in accordance with Addendum VII may receive an OCCLMA trap allocation via a transfer but shall no longer be

allowed to fish in LCMAs 1 or 2 and may only fish the OCCLMA trap allocation in the OCC LCMA.

f) Trap allocations may not be transferred out of the OCC LCMA.
g) Applications for trap allocation transfers must be received by a permit holder's home state November 30 of the previous fishing year.
h) Trap allocations based in part or whole upon SCUBA history shall be prohibited from transferring any part of their trap allocation except when transferring their commercial lobster permit.
i) Trap allocations based in part or whole upon SCUBA history shall be prohibited from transferring their trap allocation along with their commercial lobster permit until the permit has been actively fished for four of the last five years as evidenced by valid catch reports.. Catch history prior to the issuance of a trap allocation shall not apply towards fulfilling meeting actively fished requirements.

4.1.6. Trap Haul-out Period

Fishermen shall be required to remove all lobster traps from waters of the OCC LCMA during January 15th through March 15th. It shall be unlawful for any fisherman to fish, set, or abandon any lobster traps in the OCC LCMA during this seasonal closure.

4.2. Compliance

States shall incorporate trap levels and fishery performance into the Annual Lobster Compliance report due to ASMFC's Plan Review Team on March 1. State management programs with eligible permit holders for OCCLMA must have regulations to be in compliance with Amendment 3 to the American Lobster Fishery Management Plan.

5.0 Recommendations for Actions in Federal Waters

The Atlantic States Marine Fisheries Commission believes that the measures contained in Amendment 3 and Addenda I-XIII are necessary to limit the expansion of effort into the lobster fishery and to rebuild lobster stocks to recommended levels. ASMFC recommends that the Federal government promulgate all necessary regulations to implement the measures contained in Section 4 of this document.

Appendix 5

Addendum XIV to Amendment 3 to the Interstate Fishery Management Plan for American Lobster

LCMA 3 Trap Transfer Program

ASMFC Vision Statement:
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015

Approved May 5, 2009

1.0 Introduction
The Lobster Conservation Management Team (LCMT) for Lobster Conservation Management Area 3 (LCMA 3) recommended to the American Lobster Board (Board) that it consider changes to its transferable trap program. It recommended lowering the transfer trap cap and adjusting the conservation tax on transfers. In August 2008, the Board approved a motion to initiate the development of a draft addendum to Amendment 3 to the Interstate Fishery Management Plan (FMP) to alter the LCMA 3 transfer program including changes to conservation tax and trap cap. The Board approved the changes to the transfer program at the Spring 2009 Board meeting.

2.0 Statement of the Problem
Given the competitive nature of the fishery in LCMA 3, it is expected that once transferability is implemented, all fishing entities will elect to fish the highest number of traps in order to remain competitive. This could lead many who have never fished a larger allocation to buy up to the trap cap of 2,200 traps (under the previous regulation). There were concerns for increased costs and overhead and consolidation in a fishery where only a certain number of traps are allocated. The LCMT recommended that the Board lower the trap cap to address these concerns. The trend of the management process has been to fish fewer traps and the LCMT considered this a positive move toward the future. This Addendum lowers the trap transfer cap from 2,200 to 2,000 traps.

Previously the LCMA 3 conservation tax was based on the number of traps being transferred. The two-tiered tax system had caused confusion. There had been concern that a high conservation tax would deter transfers from occurring, thus reducing the conservation benefit of having a transfer tax. This Addendum modifies the program to a single conservation tax for partial allocation transfers within LCMA 3 and includes a conservation tax on the sale of a complete fishing operation.

3.0 Background
American Lobster Addendum IV to Amendment 3 outlines a transferable trap program for LCMA 3. This program allows LCMA 3 lobster fishermen to transfer trap tags to other lobster fishermen. Addendum V reconsidered and established a new overall trap cap and conservation taxes for transferring traps in LCMA 3. Draft Addendum XIII proposed to modify the overall trap cap and conservation tax on transfers but the Board did not take action on the LCMA 3 program in Addendum XIII and reconsidered the transfer program changes in draft Addendum XIV.

With LCMA 3 trap reductions, the overall traps have declined for each permit holder who holds permit-specific trap allocations. The maximum trap allocation for any LCMA 3 permit holder will be 1,945 traps (once all scheduled trap reductions are complete), lower than the previous transfer program cap of 2,200 traps.

It is expected that LCMA 3 trap allocations will be transferable once all agencies fully implement Addendum XII. There is a concern that once transferability has begun, permit holders may seek to maximize their trap allocations through transfers and the end result (after many years of transfers) will be fewer fishermen involved in the fishery and most fishing up to the limit of 2,200 traps. Given a fixed number of traps available in the fishery, any lowering of the trap cap (as proposed here) could result in more participants (if the expected trend toward

consolidation occurs). It may also allow for economic profitability through flexibility, and support creative options for future business planning.

The basis for the 2000 trap cap limit is to cap trap fishing levels (on a per vessel basis) to a level similar to those seen in the offshore waters in the 1990's when the FMP was established. Variable costs to run a lobster business are increasing (fuel, rope, bait), capping the maximum trap levels can promote economic efficiency. Consequently, this addendum attempts to meet two of the FMP's objectives:
1) Maintain existing social and cultural features of the industry wherever possible
2) Promote economic efficiency in harvesting and use of the resource

4.0 Management Measures
These measures replace Section 2.0 of Addendum V to Amendment 3.

All measures in this plan occur solely in federal waters.

4.1.1 LCMA 3 Transfer Tax

A conservation tax (passive reduction) of 20% is assessed for each partial transfer of traps in LCMA 3 (example: if 100 trap tags are transferred to a fisher, the net number of tags received by that fisher will be 80).

A conservation tax (passive reduction) of 10% is assessed for the sale of a complete fishing operation in LCMA 3.

4.1.2 LCMA 3 Trap Cap under Transfers

No individual/business with an allocation less than 2,000 traps can build their total trap allocation above 2,000 traps under a trap transfer program, regardless of historical participation.

4.2 Compliance

States shall be required to enact regulations instituting measures contained in section 4.0 of this document upon NOAA Fisheries completing rule making on Addendum XIV recommendations, not prior.

Agencies shall incorporate trap levels into the Annual Lobster Compliance report due to ASMFC's Plan Review Team on March 1 after regulations have been adopted.

5.0 Recommendations for Actions in Federal Waters
The Atlantic States Marine Fisheries Commission believes that the measures contained in Amendment 3 and Addenda I-XIV are necessary to limit the expansion of effort into the lobster fishery and to rebuild lobster stocks to recommended levels. The Commission recommends that NOAA Fisheries promulgate all necessary regulations to implement the measures contained in Section 4 of this document.

Appendix 6

Atlantic States Marine Fisheries Commission

ADDENDUM XVIII TO AMENDMENT 3 TO THE AMERICAN LOBSTER FISHERY MANAGEMENT PLAN

SOUTHERN NEW ENGLAND REDUCTIONS IN FISHING CAPACITY FOR LOBSTER CONSERVATION MANAGEMENT AREA 2 AND 3

ASMFC Vision Statement:
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015

Approved August 2012

Appendix 6

1.0 Introduction

The Atlantic States Marine Fisheries Commission (ASMFC) has coordinated interstate management of American lobster (*Homarus americanus)* from 0-3 miles offshore since 1997. American lobster is currently managed under Amendment 3 and Addenda I-XVII to the Fishery Management Plan (FMP). Management authority in the exclusive economic zone (EEZ) from 3-200 miles from shore lies with NOAA Fisheries. The management unit includes all coastal migratory stocks between Maine and North Carolina. Within the management unit there are three lobster stocks and seven management areas. The Southern New England (SNE) stock (subject of this Draft Addendum) includes all or part of six of the seven lobster management areas (LCMAs) (Appendix 1). There are nine states (Massachusetts to North Carolina) that regulate American lobster in state waters of the SNE stock, as well as regulate the landings of lobster in state ports.

While this Addendum is designed to address the single discrete SNE stock unit, past American Lobster Management Board (Board) actions were based on the management foundation established in Amendment 3 (1997), which established the current seven lobster management areas that are not aligned with the three lobster stock boundaries. LCMA-specific input controls (limited entry, trap limits, and biological measures) have been the primary management tools used by the Board to manage lobster fisheries under the FMP. Managers working to recover the SNE stock face significant challenges since they must confront the complexity of administering and integrating six different management regimes crafted primarily (and largely independently) by the Lobster Conservation Management Teams (LCMT's). To be effective, management actions must not only address the biological goals identified by the Board, but also acknowledge and attempt to mitigate the socio-economic impacts that may vary by LCMA, while ensuring that multiple regulatory jurisdictions have the capability to effectively implement the various management tools available in this fishery.

The Board initiated this draft Addendum to scale the SNE fishery to the size of the resource with an initial goal of reducing qualified trap allocation by at least 25 % over a five to ten year period of time. The goal may be different in each LCMA depending on the condition of the fishery and amount of unused traps in each area. The Board motions read: *Move to … As a second phase initiate Draft Addendum XIX to scale the SNE fishery to the size of the SNE resource. Options in the document will include recommendations from the LCMTs, TC and PDT. These options would include, but are not limited to, a minimum reduction in traps fished by 25% and move to proceed with Draft Addendum XVIII on LCMA 2 and 3 effort control programs to meet the terms of the second phase in the previously approved motion.*

The most recent transferability rules were established in addenda XII and XIV. This addendum proposed to modify some of those rules as well as establish additional guidelines. Proposed changes to current regulations are noted in section 3 of this document.

1.1 Statement of the Problem

Resource Issues

The SNE lobster stock is at a low level of abundance and is experiencing persistent recruitment failure caused by a combination of environmental drivers and continued fishing mortality (ASMFC, 2009). It is this recruitment failure that is preventing the SNE stock from rebuilding. This finding is supported by the 2009 Stock Assessment Peer Review Panel and the 2010 Center

for Independent Experts review of Technical Committee (TC) findings and conclusions articulated in the April 2010 report to the Board: "Recruitment Failure in Southern New England Lobster Stock.

Current abundance indices are at or near time series (1984 to 2009) lows (ASMFC 2009) and this condition has persisted since the early 2000s. In May 2009, the Board set interim threshold and target values well below those recommended by the TC in recognition that stock productivity has declined in the past decade. The Stock is overfished but overfishing is not occurring. Members of the Board and TC believe that environmental and ecosystem changes have reduced the resource's ability to rebuild to historical levels.

Management Issues

The Board initiated this draft addendum to scale the SNE fishery to the diminished size of the SNE resource, including an option that would result in a minimum reduction in traps allocated by 25%. This addendum proposes a consolidation program for LCMAs 2 and 3 to address latent effort (unfished allocation) and reductions in traps fished.

The limited entry programs for each LCMA had unique qualifying criteria and eligibility periods resulting in widely disparate levels of latent effort among the areas. Consequently, measures to remove latent effort from the fishery will need to be developed for each LCMA based on the current amount of latency and the unique qualifying criteria and eligibility periods used by each management jurisdiction. For trap limits to be effective in reducing harvest and rebuilding the stock, latent effort must first be addressed to prevent this effort from coming back into the fishery as the stock grows and catch rates increase. Without action being taken to remove latent effort from the fishery any effort to consolidate LCMA 2 and 3 will be undermined. It is anticipated that long-term reductions in traps fished will occur as a result of this addendum.

2.0 Background

The ASMFC Lobster Management Board has approved past addenda governing the LMCA 2 and 3 trap fishery that allocated traps to each permit holder based on past performance (LCMA 2 allocated traps in 2007 for state permit holders and LMCA 3 in 1999, Table 1). Once NOAA Fisheries allocates traps to LCMA 2, both LCMAs will have a finite number of traps that can be fished based on the total allocation of individuals qualified to fish in the areas. While difficult to calculate and confirm for all areas and jurisdictions, it is estimated that the effort control plans allocated more traps than were being fished at the time the allocation schemes were adopted. The effort control plan for Area 2 was adopted in the middle of the decade long decline in the fishery. Because the fishery was already seeing substantial attrition, the initial allocations in LCMA 2 and 3 created a pool of latent trap allocation that could be fished in the future. The number of fishermen and traps fished was substantially higher in the late 1990's and continues to decline through the present day. Nevertheless, the proportion of trap allocation that is unfished is significant and continues to grow (Table 2).

Table 1. Initial Trap Allocation approval for each LCMA

LCMA	ASMFC Approval	State Approval	NOAA Fisheries Approval
Area 2	2006	MA - 2006 RI - 2007 CT- 2006	Pending
Outer Cape Cod	2003	MA - 2003	Pending
Area 3	1999	N/A	2003
Area 4	1999	N/A	2003
Area 5	1999	N/A	2003

Table 2. Traps allocated and max traps fished for 2008-2010 for LCMA 2 and 3.

LCMA	**2008 Traps Allocated**	**2008 Max Traps Fished**	**2009 Traps Allocated**	**2009 Max Traps Fished**	**2010 Traps Allocated**	**2010 Max Traps Fished**
LCMA 2	178,376	107,003	175,117	107,886	177,120	104,603
LCMA 3	109,477	87,188	111,109	80,561	111,386	75,808

Data for LCMA 2 is limited to MA, RI, and CT fishermen; max traps fished is from state harvester reports. Data for LCMT 3 includes MA, RI, CT, NY, NJ, DE, MD, and VA. Max traps fished for MA and RI is from harvester reports for all other states data is from the total trap tags purchased.

The trap allocation programs for LCMA 2 and 3 also contained provisions which allowed transfers of trap allocation among eligible permit holders to mitigate some the negative effects of trap allocation schemes. These programs are called ITT's: Individual Transferable Trap programs. However, despite the desire for trap allocation transfers, they have yet to be fully enacted, primarily because NOAA Fisheries and Rhode Island DEM have met administrative challenges trying to implement these programs.

Through Addendum XII, it was understood by the Board and NOAA Fisheries that before transfers would be allowed or resumed two things must occur: 1) NOAA Fisheries must adopt complementary rules to allocate traps for federal permit holders in LCMA 2 and Outer Cape Cod (OCC) and 2) a joint state/federal database must be created to track trap allocations and transfers among the permit holders for these three areas. NOAA Fisheries is currently in rulemaking to consider federal rules that would allow trap allocation transfers among LCMA 2, 3, and OCC permit holders, as well as establish complementary LCMA 2 and OCC trap allocations for federal permit holders in these areas. It is expected that the trap allocation transfers could happen for the 2013 fishing season. When the program commences, industry members anticipate a rash of transfers that could in fact raise the effort level (traps fished) in the fisheries – despite the 10% conservation tax to be placed on transfers in LCMA 2, 3, and OCC. If the net result is increased effort, then conservation goals would be compromised, at least temporarily. The joint state/federal database is scheduled to be completed in 2012.

The effort control plans in LCMA 2 and 3 resulted in some amount of effort reduction at the permit holder level and at the aggregate fleet level. Many permit holders in LMCA 2 received an allocation of traps that was less than the level of traps they fished prior to allocation. The LCMA 2 plan relied on a combination of traps fished and poundage to allocate traps. Some permit holders with relatively low landings received a trap allocation that was lower than their reported traps fished. Until the allocation transfer program is created these permit holders are frozen at their allocation level without any means to increase their allocation. Meanwhile many LCMA 3 permit holders have seen their trap allocation reduced by a series of addenda (Addendum I and IV), that imposed differential trap cuts on Area 3 fishermen based on the size of the original allocation. Fishermen with lower allocations were cut 10 %, while others with very high allocations were being cut up to 40%. As a general rule, most Area 3 fishermen had their historic allocations cut by approximately 30%.

Despite the scaling down achieved through the effort control plans, many in the industry fear the soon-to-be-approved transferability program could result in a flurry of transfers that will spike fishing effort. Therefore, an effort reduction proposal was put forth to the Board by LCMT 2 and 3 to mitigate some of the anticipated unintended consequences of trap allocation transferability programs that are expected to come “on-line” in the months ahead. The proposal establishes long-term effort reductions (allocated traps) in the LCMA’s that feature excessive permits and trap allocations, especially in SNE where the stock is declining. The proposal creates a framework that allows for LCMA-specific long-term reductions in trap allocations with constraints on how quickly a permit holder can build up their trap allocation after a transfer occurs. If enacted, these cuts in trap allocation are designed to eliminate latent trap allocations and reduce the number of traps actually fished. Industry members who envision improvements in the economics of the fishery are willing to undertake these trap reductions as long as the relief valve of trap allocation transfer is available to maintain a profitable fishery for the remaining participants.

SNE fishermen recognize that the decline in lobster abundance and the potential for future offshore industrial development could constrain the fishable areas and reduce future landings to unforeseen low levels. In the absence of government funds to remove permits or trap allocation from the available pool, industry developed a proposal that is essentially a self-funded buy-out. Consolidation is likely to occur as permit holders respond to the annual trap allocation cuts by obtaining trap allocation from those permit holders who downsize their operations or leave the fishery.

Management tools being considered

Trap Allocations

Trap allocations are the only aspect of the current regulations that provide a means and mechanism to allow the consolidation of the industry. The industry will need to be reduced commensurate with the available resource in SNE, which is estimated at 50 % of its historic level according to the last assessment. The Board will update this value when the next assessment is complete in 2014. Industry members feel it is critical to maintain the economic viability of a downsized fleet, therefore, it is necessary to gradually consolidate fishing rights on fewer vessels.

In order to facilitate the downsizing process, each allocation of qualified traps will need to be reduced. This would be effective when trap transferability is fully implemented by all management agencies, allowing some members of the industry to sell their allocations of qualified traps and exit the fishery, and allowing others to purchase traps and maintain full allocations. The current maximum trap cap is 800 traps in LCMA 2 and 2000 traps in LCMA 3.

Trap Banking
Trap allocation banking will allow a permit holder to obtain trap allocation from other permit holder in excess of the individual trap limit on an area specific basis. This additional allocation may not be fished until activated by the permit holder's governing agency. This provision will enhance the ability of a lobster business owner to plan for their future. For example, banked traps could be activated, up to the maximum individual trap allocation, if a permit holder's trap allocation was reduced in the future, instead of trying to buy additional allocation the year the reductions occurred. Entities will also be able to obtain trap allocation in a single transaction vs. making numerous small transactions each year, which will reduce the administrative burden for the management agencies and industry.

Controlled Growth
While LCMT's have expressed a desire to have flexibility to scale businesses in a predicable manner in order to survive the exploitation reductions that are needed to rebuild the stock, the industry has also voiced the concern that they do not want the industry to change too rapidly. This includes both the process of purchasing traps (increasing and decreasing traps). In order to balance these two conflicting concerns the addendum includes a provision that would limit the rate of trap increases that may result from the implementation of trap transferability, this which is termed "controlled growth". Controlled growth is intended to allow an entity to annually move traps from their trap allocation bank account, and add them to their allocation of active traps at a predictable rate. The controlled growth limitation is specific for each LCMA.

3.0 Management Program

3.1 LCMA 2
The following measures are for LCMA 2 only

3.1.1 Active trap reduction
A. Initial Trap reduction
Trap allocation will be reduced in year one by 25%. Trap allocation reductions are from the original allocation that was given to the fishermen in 2007 for state-only permit holders and for federal permit holders the cut is to the allocation accepted by the permit holder after NOAA Fisheries completes its allocations (it is expected to be complete before the 2013 fishing year). In addition, any other allocation that was obtained by the permit holder subsequent to the initial allocation is also cut.

> Example: If an individual's allocation was 800 traps after a 25% reduction their allocation would be 600 traps, 200 traps will be retired for conservation purposes

B. Annual Trap reduction:
Trap allocations will be reduced each year by 5% each year over a period of 5 years. The annual trap allocation reduction is assessed on both active and banked trap allocations with the annual trap reduction being permanently retired for conservation purposes. Since an initial trap reduction of 25% will be completed in year one (section 3.1.1), the annual trap reductions will start in year 2 and continue through year 6 (total of 5 years of annual cuts)

Example: The following example shows the reductions that would occur if an individual started with an 800 trap allocation

Year	Starting Allocation	% reduction	New Allocation	# traps retired for conservation
Year 1	800	25%	600	200
Year 2	600	5%	570	30
Year 3	570	5%	541	29
Year 4	541	5%	514	27
Year 5	514	5%	488	26
Year 6	488	5%	464	24

3.2 LCMA 3 Management
The following measures are for LCMA 3 only.

3.2.1 Annual Trap reduction:
Trap allocation will be reduced each year by 5%. Trap allocation will be reduced from the current (2012) permit trap allocation. The annual trap allocation cut will be assessed on both active and banked trap allocations, be LCMA specific, with the annual trap reduction being permanently retired for conservation purposes.

Example of a 5% reduction of trap allocation for 5 years for an individual with a starting allocation of 2000 traps

Year	Starting Allocation	% reduction	New Allocation	# traps retired for conservation
Year 1	2000	5%	100	1900
Year 2	1900	5%	95	1805
Year 3	1805	5%	90	1715
Year 4	1715	5%	86	1629
Year 5	1629	5%	81	1548

4.0 Annual Review and Adjustment Process
As part of the annual plan review process the ASMFC Lobster Board will review the performance of this program to ensure that it is meeting the goals of the program. The review will consider the number of traps transferred, the rate of transfer, degree of consolidation taking place, etc in each area.

States will be required to submit to ASMF the following information for the most recent fishing year on July 1

- Number of allocated traps for LMCA 2 and 3
- Number of traps transferred for LCMA 2 and 3
- The rate of transfer for LCMA 2 and 3
- Maximum number of traps fished for LMCA 2 and 3
- The degree of consolidation for LCMA 2 and 3

4.1 Compliance

The compliance schedule will take the following format:

All states must implement Addendum XVIII through their approved management programs in the same fishing year that NOAA Fisheries implements transferability and trap reduction rules. The Commission will notify states of specific dates for compliance when an official timeframe has been release from NOAA Fisheries on the rule-making process.

5.0 Recommendation for Federal Waters

The SNE lobster resource has been reduced to very low levels. The Atlantic States Marine Fisheries Commission believes that additional fishery restrictions are necessary to prevent further depletion of the resource.

The Atlantic States Marine Fisheries Commission believes that the measures contained in Amendment 3 and Addenda I-XVIII are necessary to limit the expansion of effort into the lobster fishery and to rebuild lobster stocks to recommended levels. ASMFC recommends that the Federal government promulgate all necessary regulations to implement the measures contained in Section 3 and 4 of this document.

6.0 References

ASMFC. 2009. Stock Assessment Report No. 09-01.

ASMFC. 2010. SNE Exploitation Reduction No. 10-120.

Appendix 7

Comments and Responses to DEIS

Comment 1: One individual expressed their displeasure on the length of time it has taken to implement this rulemaking.

Response: NMFS understands and, to an extent, even shares in this frustration. It is important to understand, however, that lobster rules are not made in isolation. Changing circumstances in the fishery have necessitated a slower, more deliberate pace. For example, since receiving the Commission's first rulemaking recommendation, the Commission has declared an emergency on an area lobster stock (the Southern New England (SNE) lobster stock in 2003). Then, in 2010 the Commission declared a lobster recruitment crisis on that same lobster stock. The Commission and commentators alike urged NMFS to delay its rulemaking process until the crisis was better understood. Further, the Commission's rulemaking recommendations have themselves changed: The Outer Cape Plan, initially approved in Addendum III in 2002, was amended by Addendum XIII in 2008. The Area 2 Plan was approved in 2003 (Addendum IV), rescinded in 2006 (Addendum VI), and a new plan approved in later that year (Addendum VII). Important details to all plans (including transferability) were not added until 2009 (Addendum XII). Ultimately, given the ever-changing context, NMFS has been forced to proceed in a more cautious, deliberate fashion, which although perhaps frustrating in the time it takes, nevertheless appears to be the most prudent approach.

Comment 2: A number of commenters noted that NMFS was "several years behind" in implementing the Commission's Plan and urged that NMFS proceed with this rulemaking, as its measures were already being implemented in state waters and compatible measures are needed in Federal waters.

Response: NMFS understands that implementation delays by the states and NMFS can make it more difficult for the Commission to plan new measures to respond to new crises. Lobster management is not a static process; new issues are always arising. Often, by the time the Commission completes one part of its Lobster Plan, additions, edits, and amendments to that same part are already in development. In fact, the Commission's Lobster Plan sometimes builds upon itself so quickly that new Plan measures are sometimes adopted that depend on earlier Plan measures, which have not yet been analyzed, much less adopted, by NMFS. Nevertheless, a speedy response is not always the best response. A balance needs to be struck because hastily crafted plans can have unintended and unwelcome consequences. Quite often, in attempting to more speedily address lobster issues, the Commission's Lobster Board left out important plan details to be addressed at some later date. For example, although the Commission recommended the rudiments of its Outer Cape Area limited access program and trap transferability in 2002 and the Area 2 limited access program in 2004, critically important details were not added until later (see e.g.: Addendum V–2004; Addendum VII–2005, Addendum IX–2006, Addenda XII & XIV–2009). Fortunately, the later added details were within the scope of what had been originally proposed (limited access program based upon past participation in the fishery) and thus NMFS did not need to start the rulemaking over. Now that those added details are known, and now that the SNE stock crisis is better understood, NMFS is better able to proceed with this rulemaking.

Comment 3: In public meetings of the SNE stock crisis and Addendum XVII deliberations in 2010 and 2011, the Commission's Lobster Board noted that the SNE stock crisis introduced tremendous uncertainty into lobster management, which complicated and delayed complementary Federal rulemaking until the crisis was better understood and the potential Commission response became clearer.

Response: NMFS agrees and notes that the originally recommended Lobster Board response to the SNE crisis in 2010 suggested a 5-year moratorium on lobster fishing—an option some on the Board described as a "nuclear option" because of its potential to put many fishers out of business and radically change the character of the SNE fishery. To proceed with this rulemaking at such a time seemed counter-productive and ill-advised (e.g., would potentially qualified permit holders even bother to apply for entry into a fishery in the midst of a 5-year moratorium?). As such, NMFS felt it imprudent to proceed with this rulemaking in the face of such widely varied and uncertain responses. The Commission, however, now has a strategy to respond to the SNE lobster stock crisis and approved the first phase of that response in February 2012 (Addendum XVII). The second phase of the response is identified in draft Addendum XVIII. Accordingly, NMFS now has a better understanding of the state of the fishery—both biologically and managerially— and the agency is able to continue on with its rulemaking.

Comment 4: One industry representative indicated that concerns over the SNE lobster stock made it difficult to comment on "where transferability should be going or how it should end up." They urged that NMFS proceed cautiously with this rulemaking.

Response: NMFS agrees and notes that the commenter's recommendation was repeated by members of the public during past Commission Lobster Board meetings. It was not possible to proceed more quickly given the number of additions that the Commission made to its plan and given the potential plan changes that the Commission were contemplating as recently as 2012. Nevertheless, delays are always a concern insofar as they have the potential to render a rulemaking stale and cause stakeholders to disengage from the process. NMFS, however, does not consider that to have happened here. Throughout this process, stakeholders have been continually reminded of the proposed measures, be it through the numerous agency Federal Register Notices, or reminders in permit holder letters, or through the agency's DEIS public hearings conducted in the Northeast in 2010. Additionally, the limited access and transferability plans have been reported steadily in the news media. The recent SNE stock recruitment failure generated tremendous interest in this rulemaking, not only from the lobster industry, but from their representatives in government, managers, non-governmental organizations, and the public in general. In addition, most of the affected Outer Cape Area and Area 2 Federal Lobster permit holders recently underwent a similar limited access program application process with their state permits. Accordingly, NMFS asserts that this rulemaking remains fresh and current with the stakeholders actively engaged. The delays, while frustrating, were unavoidable and necessary to draft a workable proposed rule.

Comment 5: Numerous commenters, both in writing and at the DEIS public hearings, supported the rule's proposed limited access measures, and further urged that NMFS enact rules that mirror the states' rules as closely as possible to avoid regulatory disconnects.

Response: NMFS's DEIS analysis supports such comments. NMFS believes that creating an Area 2 and Outer Cape Area limited entry program that is substantially identical and coordinated with the Commission's limited entry program offers the most prudent way forward for the lobster fishery in those areas. In fact, failing to do so would likely create a mismatched and disconnected management program that could undermine and even threaten fisheries management in those areas. Regardless, despite the greatest efforts of NMFS, the Commission, and the states to have identical programs, some differences and some discrepancies will undoubtedly occur. NMFS's analysis, however, suggests that the number of disconnects will be few and have negligible social and environmental impacts. Nevertheless, this proposed rule includes additional elements, such as a Director's Appeal and a voluntary Trap Transfer Program, which would allow NMFS and the states to further coordinate and reconcile irregularities should they occur on individual permits. These additional elements are discussed in greater detail in Comment 20.

Comment 6: One state agency wrote in support of NMFS's proposed Trap Transfer Program and explained that such a program was critical to the success of the overall limited access plan. The state indicated that effort control plans sometimes resulted in fishermen being allocated far fewer traps than they desired or needed. The "relief valve" to accommodate some individual fisherman's need to increase trap allocation was the Trap Transfer Program.

Response: NMFS analyzed this issue in detail in its DEIS and agrees that its proposed Trap Transfer Program would allow individual lobster businesses the flexibility to scale their business up or down according to individual business plans. Obviously, not all lobster businesses fish the same number of traps. Although an increase in the number of traps fished may increase the amount of lobster harvested, it will also increase fishing costs, including costs for bait, fuel, and time to tend the additional traps. Each fishing business calculates the benefits and costs of fishing at certain trap levels when deciding how many traps to fish. In this proposed rule, however, initial trap allocations will be based on levels of participation during a qualification period that occurred in the past. The qualification period does not factor into what the lobster fisher is fishing presently or what the fisher may want to fish in the future. As a result, some vessels may receive allocations that do not reflect their current business plan, with some receiving higher trap numbers and others receiving lower. Transferability will make it possible for trades to take place, thereby allowing lobster fishers a better chance to scale their businesses to their most appropriate and economically viable level.

Comment 7: Numerous lobster fishers and lobster businesses commented in favor of NMFS's proposed Trap Transfer Program. They point out that failure to implement a Federal Trap Transfer Program will have serious negative consequences for the inter-jurisdictional management of the fishery. The Trap Transfer Program increases flexibility for lobster businesses and that benefit far outweighs the biological negative of increased trap production by breaking large inefficient trap allocations and transferring them to businesses that will make them more productive.

Response: NMFS analyzed this issue in its DEIS and concluded that the proposed Trap Transfer Program makes good sense and will be an overall benefit to the fishery. Specifically, the Trap Transfer Program would likely improve the overall economic efficiency of the lobster

industry by allowing businesses to scale up or down according to whatever trap number works best for their particular business. For example, some previously inactive traps, i.e., traps that were not being fished ("latent traps"), could be sold to individuals who would likely fish the traps more actively. Theoretically, doing so might increase effort in the area, although likely not on a scale that would produce negative impacts on the lobster population (see responses to Comments 13 and 14). NMFS's proposed rule, however, includes trap transfer taxes (which would retire 10 percent of the traps involved in any transfer) and trap caps on the number of traps a business could accumulate, to balance against the activation of latent effort. NMFS asserts that these protection measures mitigate the possibility for an increase in trap effort. NMFS further notes that Commission Addendum XVIII calls for further trap cuts in SNE, and provides an additional buffer against the possibility of increased effort due to the activation of previously latent traps.

Comment 8: Members of industry and the Commission asked that NMFS implement its Trap Transfer Program as soon as reasonably possible.

Response: NMFS considered many alternative start times before deciding that its preference is to start the program 120 days after the publication of the final rule. Many alternatives exist. On one extreme, NMFS could attempt to begin the Trap Transfer Program immediately in Area 3 (where trap allocations have already been decided), and then begin it in Area 2 and the Outer Cape Areas on a continuing, rolling basis as the permit holders are qualified. Such an alternative, while speedy, has significant down-sides. For example, were Area 3 to transfer traps before the other areas, it could create disconnect issues because many Area 3 traps will also likely be qualified into Area 2 and Outer Cape Area. Further, giving one group a head start over another group —especially allowing Area 2 and Outer Cape Area qualifiers to enter the program on a first come, first served basis—could create a race to transfer that might unduly advantage early qualifiers and skew market forces. At the other extreme is an alternative that delays the Trap Transfer Program until NMFS makes initial decisions on every Area 2 and Outer Cape Area application and/or appeal. Waiting would allow NMFS to start the Trap Transfer Program with all participants on equal terms, and would likely allow NMFS to proceed at a more deliberate, thoughtful, and less chaotic pace. However, NMFS's lobster limited access program experience in other areas (i.e., Areas 1, 3, 4, and 5) suggests that it often takes years to finish making decisions on all applications and all appeals. Delaying trap transfers until all limited access decisions are made would create unacceptable delays to permit holders relying on the Trap Transfer Program and to lobster managers who are waiting for the Trap Transfer Program so they can implement other lobster management measures.

Ultimately, NMFS proposes a middle ground alternative: Beginning the Trap Transfer Program in all three areas 120 days after the publication of the final rule. NMFS's lobster limited access program experience suggests that it will be able to process and complete the great majority of the applications in 120 days. This would allow the Trap Transfer Program to begin with a larger group of initial qualifiers and, thus, allow the program to proceed under more normal market conditions. Ultimately, however, the program's start time will be heavily dependent upon infrastructure being in place to properly account for and manage the transfers. At present, the ACCSP is in the process of developing a tracking system to account for all transfers. That system, however, has not yet been completed.

Comment 9: Numerous commenters were concerned about discrepancies between an individual's potential state and Federal trap allocations. These individuals supported NMFS's alternatives—such as the proposed voluntary Trap Transfer Program—that would synchronize state and Federal allocations. These commenters also uniformly agreed with the need for a centralized trap transfer data base so that all transfers could be catalogued and tracked by all relevant jurisdictions.

Response: NMFS agrees that it is critical to synchronize the state and Federal limited access and transferability programs to the greatest extent practicable. NMFS's DEIS analysis indicates that the threat presented by incongruent state and Federal regulatory programs is significant and real. This is, in fact, one of the many reasons in support of a Federal Trap Transfer Program—i.e., if the states allowed trap transfers (the states have already approved trap transferability programs of their own), but NMFS did not, then trying to follow and determine the number of traps on a state/Federal dually-permitted entity's allocation would quickly become an impossible task as that individual transferred his or her state allocation. NMFS's proposed Trap Transfer Program follows the trap transfer recommendations in the Commission addenda, including Addendum XII, and thus is substantially identical to the trap transfer programs of the states. To the extent that discrepancies occur, NMFS's Trap Transfer Program attempts to synchronize with the states by mandating that participants reconcile their state and Federal trap allocations before they are allowed to transfer traps. NMFS agrees that a centralized database is necessary to keep track of all transfers and the agency has actively advocated for such a database in Commission Lobster Board discussions.

Comment 10: Lobstermen at the DEIS public hearing in Narragansett, Rhode Island (June 2, 2010), expressed concern that management restrictions were going to cause this already aging industry to further lose its youth and vitality. As access to lobster permits and fishing areas becomes increasingly restricted (especially with that access being determined by fishing history that potentially occurred before younger fishers may have begun fishing in earnest), younger lobstermen have the potential to be squeezed out, both because they are newer and thus lack the history, and because they are younger and often lack the up-front capital to buy whole fishing operations.

Response: NMFS's proposed Trap Transfer Program should benefit young lobstermen such as those who commented at the DEIS public hearing in Narragansett, Rhode Island. The proposed Trap Transfer Program would allow participants to build up their businesses as time and capital allow (e.g., newer fishermen could start with smaller numbers of traps and build up) instead of having to incur the great expense of buying a whole, fully-established business all at once. In other words, any Federal lobster permit holder could buy into an area regardless of whether they initially qualified into that area (e.g., again, starting with a smaller, less expensive business plan that allows for expansion if necessary), which would allow younger individuals access to an area despite potentially lacking the requisite fishing history to initially qualify into that area.

Comment 11: Some people expressed concern at NMFS's DEIS public hearings that the proposed Trap Transfer Program might cause excessive consolidation of effort and allow

monopolies to form. Individuals also commented that NMFS should only allow Federal permit holders who have already been qualified into an area to buy and sell traps in that area.

Response: Well over 80 percent of the United States' harvest of American lobster comes from lobster management areas lacking transferable trap programs, such as Area 1. As such, even in the unlikely event that trap effort becomes so consolidated in Areas 2, 3, and the Outer Cape that a few entities control all traps—an impossibility under the proposed plan—those entities would still not be able to so control the markets as to constitute a monopoly. Regardless, NMFS's proposed Trap Transfer Program would maintain current trap caps (800 traps in Area 2 and the Outer Cape Area and 1,945 in Area 3), to prevent excessive trap accumulation. In addition, the proposed rule would allow any Federal lobster permit holder, not just Federal lobster permit holders who qualify into the area, to buy allocated traps, thereby increasing the pool of potential buyers so that buying power would not be consolidated in a smaller number of area qualifiers.

Comment 12: One lobsterman stated at the DEIS public hearing in Chatham, Massachusetts, that he opposed allowing lobster management area non-qualifiers to gain access into a lobster management area by buying traps that were allocated to that management area. Other lobstermen, however, suggest that individuals not qualified into an area should be allowed to purchase area qualified traps.

Response: NMFS proposes to allow non-qualifiers to purchase qualified area lobster traps. Doing so will increase the pool of potential buyers and thus better facilitate the economic advantages to both buyer (e.g., access to fishing the area at a level appropriate to their business model) and seller (e.g., a larger pool of potential buyers). Allowing non-qualifiers to purchase qualified traps will also help younger entrants into the fishery participate at an economically-viable level (see response to Comment 10). Additionally, allowing non-qualifiers to purchase qualified traps will help offset impacts to individuals who might have fished the area in the past, but failed to qualify, or qualified at a lower trap allocation. The proposed rule would not go so far as to suggest that any individual—even those without federal lobster permits—could purchase qualified traps and fish in the area. Thus, the number of potential participants is greater than if limited solely to area qualifiers, but would be limited, nonetheless. Specifically, the total number of possible participants is limited to individuals with Federal lobster permits (there are presently about 3,152 Federal lobster permit holders). Additionally, geographical, economic, and regulatory considerations would prevent those participants from concentrating in one area. Requiring a purchaser to have a Federal lobster permit makes sense and provides some counter-balance: It restricts the number of purchasers to a finite pool and would allow NMFS to maintain management through its permits rather than shifting to a trap-based management paradigm. Further, limiting participation in the Trap Transfer Program to Federal lobster permit holders helps ensure the social and industry characteristics of the fishery insofar as purchasers would be existing lobster fishers rather than the general public, thereby ensuring that potential purchasers have at least some understanding of the fishery.

Comment 13: Some commenters expressed concern, both in writing and at NMFS's DEIS public hearings, that trap transferability programs sometimes allow latent effort to be activated.

Response: This proposed rule would not increase effort. Critical to understanding this point is using the current lobster fishery as a proper frame of reference. At present, any of the 3,152 existing Federal lobster permit holders can fish in Area 2, in the Outer Cape Area, or in both areas. Further, every one of those 3,152 permit holders could fish any number of traps up to the current trap cap of 800 traps. Under the proposed rule, however, the number of potential trap fishery participants is expected to drop from 3,152 to 207 in Area 2, and to 26 in the Outer Cape Area. NMFS knows that the number of permit holders actually fishing in Area 2 and the Outer Cape Area is far less than 3,152, but nevertheless, restricting access to approximately 233 permit holders (207 in Area 2 and 26 in the Outer Cape Area) based upon past fishing history represents a massive reduction in potential effort. Further, of the 233 permit holders expected to qualify, many, if not most, will be allocated less than the full 800-trap allocation, because many fishers did not fish with every possible trap during the qualifying years. Accordingly, not only will the number of Area 2 and Outer Cape Area fishers be reduced, but the number of traps that the area qualifiers can fish will also be reduced. Even those who receive the maximum 800-trap allocation will, at most, receive an allocation equal to, but not greater than, the number of traps currently allowed. In other words, whereas the present regulations allow anybody to fish up to 800 traps in these areas, the proposed regulations will allow only certain qualifiers to fish up to 800 traps, with many qualifiers allocated at trap levels below those allowed today. Again, this allocation would be tied to actual fishing history and, thus, result in a further reduction in potential effort.

Unfettered trap transferability, however, does have the theoretical potential to slightly increase actual effort as unused, latent traps in one business are sold to a different lobster business which could fish them more actively. But, that increase would only be relative to the administratively-created fishery occurring immediately after permit holders are qualified and allocated, not as compared to effort as it exists on the water today. Notably, the proposed rule's post-qualification/allocation characterization does not represent today's actual effort either: It represents actual effort as it existed in the early 2000's. Some of the qualifiers would receive an allocation greater than they now fish, others smaller than they now fish. When the parties transfer traps back and forth to get to their current-day business models, some presently latent traps might become active. But, many of these activated latent traps would be doing nothing more than replacing currently active traps that were not allocated during the allocation process—at most, a zero-sum gain. Nevertheless, the proposed rule offers a number of measures to balance against the activation of latent effort including: Permanently retiring 10 percent of all traps involved in transfers (sometimes referred to as a "transfer tax" or "conservation tax"); requiring dually-permitted entities (those with both a state and Federal lobster permit) to reconcile inconsistent allocations by choosing the more restrictive number; and retaining trap caps on individual allocations. Accordingly, NMFS does not expect a great amount of latent effort to be activated through transfers, and asserts that its mitigation measures will offset any potential activation of latent effort.

Comment 14: Members of the public commented at the DEIS public hearings and in writing that latent traps should not be allowed to be transferred.

Response: Latent effort is potential effort. In the lobster fishery, latent effort represents the number of traps that could be fished, but that are not actually being fished at a specific point in time. For the purposes of this proposed rule, the specific point of time is the qualification/allocation time period set forth in the Commission's Lobster Plan. The Commission's Lobster Plan calculates trap allocation based upon a scientific regression formula to ensure that trap allocation correlates with fishing activity. Accordingly, every trap initially allocated can be considered active—or at least was active during the qualifying years chosen in the Commission's Lobster Plan. If, however, the commenters are suggesting that NMFS further restrict transfers of traps that have become latent since the qualification/allocation time period, then NMFS must point out the many problems with such a suggestion. First, although the commenters generally speak about latency, they have not provided a specific time period within which to determine latency. Latency is not static. It changes year-to-year, month-to-month, and even day-to-day. Traps that are active one month might become inactive the next and then reactivated the third month. Without a temporal context, latency cannot be determined with any degree of specificity. Second, even if a time period was given, there is no mandatory record-keeping to easily determine which traps were active at any given time and which traps were not. In other words, because it is seldom possible to precisely determine whether a trap is active or latent (or partially active/partially latent) it is extraordinarily difficult to craft a management program that allows only the transfer of active traps while preventing transfers of latent traps. Third, even were NMFS to somehow determine a trap's activity level in recent seasons, restricting its transfer would result in disconnects with the states because there is no restriction on the transfer of latent traps in the Commission's Lobster Plan. Ultimately, NMFS concludes that the Commission's Lobster Plan does a good job of preventing latent traps from being activated. To the extent that latency nevertheless exists, NMFS asserts that mitigation measures such as the 10 percent retirement of trap transfers will compensate for potential latent trap activation (see response to Comment 13).

Comment 15: One Outer Cape Area trap fisherman commented in a DEIS public hearing that if non-qualifiers could buy traps in the Outer Cape Area, then non-qualified gill-netters would buy small amounts of traps just to enter the area, but fish for lobster with gillnets.

Response: An individual's ability to fish for lobster is derived from his or her permit, not from the traps. The proposed rule would not change this. As a result, anybody fishing for lobster in the Outer Cape Area still must possess a Federal lobster permit. Therefore, the commenter's scenario would not occur under this proposed rule. That is, a Federal lobster permit holder would not need to buy traps as a ruse to get into the area because that permit holder could fish for lobster in the area with gillnets without a trap allocation if they already had a Federal lobster permit. If a person does not have a Federal lobster permit, only then would he or she not be allowed to participate in the proposed Trap Transfer Program to buy Outer Cape Area traps.

Comment 16: One industry group suggested that only traps that fished within the SNE area be transferrable within the SNE area.

Response: Areas 2, 3, and the Outer Cape all overlap multiple lobster stock areas. To further divide those lobster management areas by stock area would be akin to creating new sub-

management areas, which is something the Commission's Lobster Plan neither does nor contemplates. Additionally, existing documentation lacks sufficient clarity and precision to determine which stock area, within a given management area, a trap has been fished. Consequently, NMFS has determined that this suggestion cannot be implemented, and even if it were, it would likely result in inconsistencies with the Commission's Lobster Plan.

Comment 17: One organization representing Area 3 lobstermen recommended that Addendum XIII's 2,000-trap cap for Area 3 remain in place, although the commenters acknowledged that trap caps can and should be adjusted in later addenda. One lobsterman and his counsel opposed Addendum XIII's Area 3 2,000-trap cap as being too low and argued that upon allocating, and thus establishing, the total number of Area 3 traps in the qualification process, there is little reason to set individual trap caps on permits, especially a cap as low as 2,000 traps.

Response: At present, trap caps exist in every LCMA. In Area 2 and the Outer Cape Area, the cap is 800 traps. In Area 3, the highest trap cap is 1,945 traps. NMFS does not propose to change these limits in this proposed rule. First, most fishers have been fishing within the existing traps caps for over a decade. In May 2000, the Area 2 and Outer Cape Area trap caps were established at 800 traps and the Area 3 trap cap was set at 1,800 traps. After the initial Area 3 qualification and allocation process in 2003, the Area 3 trap cap jumped to 2,656 traps (very few permit holders qualified at that level), but was subject to a graduated yearly decrease so that no Area 3 fisher now deploys 2,000 traps, and most have an allocation far below that cap. Accordingly, failure to increase the cap in this rulemaking should not create any new impact on lobster businesses. Second, the mitigation provided by the Trap Transfer Program for lower allocations remains, regardless of the trap cap. Finally, and of great importance, the trap caps and their impacts on newer, more novel lobster management measures, such as controlled growth and banking, are being analyzed in great detail in draft addenda that have yet to be approved by the Commission's Lobster Board. Accordingly, it would be premature and imprudent to change trap caps in the Federal lobster regulations before having the opportunity to analyze and incorporate the proposals in the Commission's Addendum XVIII. NMFS intends to address the trap cap issue in a rulemaking that follows this present rulemaking.

Comment 18: One Area 2 lobsterman commented that he had a medical condition that drastically curtailed his lobster fishing activity during the qualifying years, and that he favored an appeal process that would allow him to qualify for access into Area 2, with a trap allocation reflecting his trap fishing history prior to his medical condition.

Response: NMFS's proposed rule contains provisions for hardship appeals in Area 2 based upon certain limited situations, such as situations in which medical incapacity or military service prevented a Federal lobster permit holder from fishing for lobster in 2001, 2002, and 2003. NMFS acknowledges the difficulties that such an appeal creates. Specifically, appeals based upon hardship can be extraordinarily subjective. What constitutes a hardship to one individual might not be so to another, and vice-versa. And short of hiring medical experts and cross-examination in a trial-type hearing—an expensive, resource intensive, and subjective process—it can be difficult to glean the applicant's state-of-mind to determine whether the matter truly prevented him or her from fishing. Accordingly, such appeals are difficult to

manage by regulation and potentially introduce an exception that can threaten to engulf the rule. Lobster management, however, is a bottom to top process. In this case, the Area 2 lobster fishing industry, as well as the Commission's Lobster Board, decided after lengthy public input and debate that a limited medical hardship appeal was appropriate for Area 2. Further, Rhode Island allowed this type of appeal in its qualification process and found it manageable and just. In proposing a hardship appeal provision here, NMFS gives weight to the lobster management process, and the experience of the industry and Board in making the proposal and finds the rationale for their appeal to be reasonable.

Comment 19: An Area 2 commenter suggested that NMFS provide for a medical appeal that mirrored Rhode Island's medical appeal so that there would not be a discrepancy between his state and Federal trap allocation. He claimed that he fished state and Federal waters as a single entity and that a trap discrepancy between his state and Federal allocations would disrupt his business.

Response: Commission Addenda VII (2005) and XII (2009) both establish the premise that a single fishing operation will be considered to have developed a single indivisible fishing history even if that history was established under jointly held state and Federal fishing permits. NMFS's DEIS further acknowledged the importance of this premise and discussed the problems created by regulatory disconnects if a state and NMFS were to make inconsistent qualification and allocation decisions on that single fishing history. As a result, NMFS's proposed rule attempts to align itself with the regulatory processes already established by the states, including the appeals process set forth by Rhode Island, to the greatest extent practicable, acknowledging, of course, the difficulties in creating a Federal regulation that is consistent with state regulations that are themselves not always completely aligned.

Comment 20: Members of the public, lobstermen, the Massachusetts Lobstermen's Association, state and Federal legislators, as well as the Massachusetts Division of Marine Fisheries were concerned about unavoidable regulatory disconnects between NMFS and the states and urged NMFS to address these discrepancies in an appeals process or by grandfathering in earlier trap transfers.

Response: NMFS analyzed this issue in detail in the DEIS and shares these concerns. For this reason, NMFS introduces a Director's Appeal in this proposed rule. The Director's Appeal would allow states to petition NMFS for comparable trap allocations on behalf of Area 2 and Outer Cape Area applicants denied by NMFS. The appeal would be available only to Area 2 and Outer Cape Area participants for whom a state has already granted access. The Director's Appeal would allow more effort to qualify and enter the EEZ than would otherwise occur. NMFS, however, does not expect this potential additional effort to negatively impact the fishery. First, the number of appeals is limited to individuals who have already qualified under their state permit. These individuals, therefore, are already exerting fishing pressure on the lobster stock, albeit limited to state waters. Second, the DEIS analysis suggests strong correlation between state qualifiers and potential Federal qualifiers so, although some disconnects will likely occur, the DEIS predicts that the number will be relatively low. Finally, even if NMFS encounters a greater-than-predicted number of Director's Appeals, NMFS nevertheless concludes that synchronicity is so crucial as to be the overriding factor in proposing the appeal. To the extent

that the extra qualified effort becomes a problem, which given the scale of the fishery seems unlikely, this effort can be further reduced in future Commission addenda rule recommendations.

Comment 21: Members of the public, lobstermen, the Massachusetts Lobstermen's Association, state and Federal legislators, as well as the Massachusetts Division of Marine Fisheries, all indicate that Massachusetts allowed permit holders to transfer traps in the Outer Cape Area. As a result, even if NMFS were to allocate traps consistent with a state's initial allocation, the initial Federal allocation might not match the current state trap allocation because of the state allocation transfers that have subsequently occurred. The commenters recommend that NMFS grandfather in transactions that have already occurred, or adopt some other process to ensure that businesses with state and Federal permits have consistent allocations.

Response: NMFS agrees that the potential for disparate allocations amongst dually-licensed permit holders exists in any dually-administered allocation program. As a result, this proposed rule offers numerous safeguards without having to grandfather in earlier transactions. First, as discussed in response to Comment 20, NMFS's DEIS analysis suggests that the number of disconnects will be low. More recent Massachusetts Division of Marine Fisheries information confirms the DEIS conclusion and indicates that Massachusetts only allowed a negligible number of dually-permitted trap transfers (less than 1,000 traps) before freezing further transactions. Accordingly, NMFS expects that its proposed Director's Appeal will resolve most, if not all, of the problems. Additionally, although individuals with inconsistent allocations will not be forced to relinquish a state or Federal allocation, they will not be allowed to exacerbate the inconsistency by participating in the Federal Trap Transfer Program and transferring portions of the disparate trap allocations.

Comment 22: Massachusetts Division of Marine Fisheries, the Commission and members of the fishing industry commented in support of the Outer Cape Area January 15th to March 15th area closure.

Response: NMFS proposes to adopt the Commission's recommended closure and prohibit lobster traps in the Federal waters of the Outer Cape Area from January 15th to March 15th of each fishing year. There are numerous benefits to such a closure. Not only would it provide the lobster resource with a 2-month respite from fishing pressure, but the closure would also provide a bright-line enforcement standard: A 2-month period where no lobster trap can be legally set in the area. Thus, any traps encountered in the area during this time period would be either illegal or abandoned, and, in either case, can be easily removed by law enforcement agents. Removing illegal gear is important because it removes excess gear, which benefits lobster by decreasing effort on the resource. It also makes cheating (fishing a number of traps in excess of the allowable trap limit) harder to do, which benefits the vast majority of lobster fishers who abide by the regulations, and lends credence to the overall management process. Removing abandoned gear (also called "ghost gear") would benefit the lobster resource because abandoned gear still traps, and potentially kills, lobster. NMFS notes that Massachusetts currently is proposing to alter the dates of this 2-month winter closure to February 1st through March 31st. Ultimately, NMFS considers it more important that the involved state and Federal governments coordinate the dates of their 2-month Outer Cape Area closure, than for NMFS to stick to its presently proposed January 15th to March 15th timeframe. If Massachusetts implements this

proposed law, then NMFS will consider altering its proposed 2-month closure to correspond with the state law.

Comment 23: The Marine Mammal Commission commented that NMFS needs to be mindful of its responsibilities to consult under section 7 of the Endangered Species Act.

Response: NMFS is aware of its responsibilities under the Endangered Species Act and is in the process of consulting with its Protected Resources Division on this matter.

Comment 24: The Marine Mammal Commission was concerned that the proposed measures could alter the level and distribution of effort, particularly in Cape Cod Bay and the Great South Channel, which could increase entanglement risks for whales.

Response: As a preliminary matter, the proposed measures are specific to Area 2, Area 3, and the Outer Cape Area. The measures are not expected to increase lobster fishing effort in Cape Cod Bay, which is in Area 1 and to which lobster fishing access was limited by a final rule dated June 1, 2012 (77 FR 32420). As for the Great South Channel, this proposed rule has the potential to decrease whale entanglement. First, the proposed rule should not expand effort, but decrease effort, because it would limit lobster fishing access in Area 2 and the Outer Cape Area to approximately 233 permit holders (207 in Area 2 and 26 in the Outer Cape Area), as opposed to all 3,152 Federal lobster permit holders who can currently fish in Area 2 and the Outer Cape Area—including portions of the Great South Channel. Thus, the proposed rule would restrict effort shift because traps would be restricted to being fished only in those areas in which they have fished in the past. Second, the proposed rule would allow for a more precise quantification of fishing effort as it would allocate a finite number of lobster traps, which would allow managers to better manage the lobster resource in each area. Third, although an unfettered trap transferability program might have the potential to increase effort to the extent latent traps become transferred and activated, the proposed rule offers measures to minimize this risk. For example, NMFS does not propose to give all qualifiers a flat 800-trap allocation (which is the number of traps permit holders can currently fish). Instead, NMFS would establish their initial allocation at the level of their demonstrated fishing history, thus decreasing the prospects that latent traps will become activated through the allocation process. In addition, the proposed Trap Transfer Program has set trap caps and a 10 percent conservation tax per trap transfer. Finally, NMFS proposes that all lobster traps be removed from the Outer Cape Area—including involved areas of the Great South Channel—for a 2-month period in late winter. NMFS discusses these issues in greater detail in the DEIS and further discusses latency issues in its responses to Comments 7, 13, and 14.

Comment 25: The Marine Mammal Commission recommended that NMFS require Federal lobster permit holders to provide data on their fishing practices to help evaluate the risk of interactions with whales and the effectiveness of related management actions.

Response: Although the nature of the request is vague, NMFS interprets the intent of the comment to suggest that additional data would help whale conservation and lobster resource management. NMFS generally agrees, but notes that the Commission's Lobster Board has struggled with this issue and has not yet reached consensus on how to best accomplish data needs

in the fishery. The Board took an important step in Addendum X, which mandated lobster dealer reporting, and which NMFS implemented in 2009 (74 FR 37530). NMFS considers it important for the Lobster Board to provide direction so that all the managing states and Federal governments are operating in synergy. The Lobster Board did not recommend further lobster reporting in this action and, as a result, the request of the commenter is beyond the scope of this rulemaking. Nevertheless, better data and understanding of the fishery is expected to result from this action. Specifically, this action would allow Federal managers to more precisely know actual fishing effort in Area 2 and the Outer Cape Area, which should aid in both the management of lobster and conservation of whales. This action also requires the creation of a centralized lobster trap tracking system that might also provide better data and understanding of the fishery. The significance of the lobster trap tracking system is discussed in greater detail earlier in this proposed rule in the section entitled: ITT Program - NMFS's Response to Commission Recommendations and Proposed ITT Rule.

Comment 26: The Environmental Protection Agency noted that the DEIS discussed the significance of water temperature on lobster and suggested that the Final Environmental Impact Statement contain the most current science on how temperature affects lobster.

Response: NMFS intends for the Final Environmental Impact Statement to contain the best available scientific information.

Comment 27: One commentator suggested that leasing of traps be allowed in addition to being sold during the trap transferability process, because doing so would provide industry with greater flexibility.

Response: NMFS does not propose to add leasing traps to its Trap Transfer Program. The Commission did not recommend leasing when it proposed its trap transferability program and to do so without the Commission and states also doing so would increase the potential for disconnects amongst the states, Federal government, and industry.

Appendix 7

Comments and Responses to Proposed Rule

NMFS received a total of 17 comments relevant to this action. In response to the proposed rule, which solicited comments from June 12, 2013 through July 29, 2013, NMFS received multiple comments from seven persons or entities, which are broken down as follows: one from a Massachusetts lobsterman; one from a Rhode Island lobsterman; one from a New Jersey lobsterman; one from the Rhode Island Lobstermen's Association; one from the Atlantic Offshore Lobstermen's Association; one from the Maine Lobstermen's Association; and one from the Atlantic States Marine Fisheries Commission. All seven of these commenters supported the proposed rule. In addition to the comments received in direct response to the proposed rule, NMFS received a second comment letter from the Commission and a comment from a Board member who is the Director of the Connecticut Department of Environmental Protection. Both submissions were sent in response to a separate NMFS action and after the proposed rule comment period had closed. However, because the proposed rule comment period did not occur during one of the Commission's regularly scheduled Lobster Management Board (Board) meetings, the Board was not able to meet and discuss the proposed rule until after the comment period ended. With respect to this timing, and given the relevance of these comments to the final rule measures, the comments were considered in the development of this action and the NMFS responses are provided in this section. The specific comments and responses are as follows.

Comment 1: Two industry associations, the Commission, and one individual lobster fisher commented in support of a 10 percent allocation tax on full business transfers. A full business transfer refers to the transfer of a Federal lobster fishing permit and all of its trap allocation to another vessel. The Commission suggested that the transfer tax on full business transfers could result in less vertical lines in the water which could benefit right whales as well as assist in the rebuilding of the SNE lobster stock.

Response: NMFS will not require a 10 percent trap allocation reduction on full business transfers at this time. The Commission's Lobster Plan is presently not designed to accommodate such a measure. The measure presupposes that the transferring lobster permit holder will have an allocation to debit by 10 percent. That is the case in most lobster management areas, those for which qualified permit holders are allocated a number of traps based on their fishing history. It is not true, however, for Area 1, which is by far the largest lobster area in both terms of participants and business transfers conducted. Area 1 has only a trap cap and anyone with a Federal lobster permit which qualified for Area 1 may fish up to 800 traps in Area 1; therefore, there is no trap allocation to debit. NMFS's proposed rule specifically asked for comment on this issue and neither Maine nor the Commission asked NMFS to convert the Area 1 trap cap to an allocation. Nor did Maine indicate that it would change its trap cap in state waters to a trap allocation, which would be necessary to ensure consistency and prevent regulatory disconnects between Maine and NMFS. See response to Comment 5 for additional discussion of this issue.

In regard to the Commission's comments, the transfer tax, either on full or partial transfers, is a measure adopted to control latent effort and was not intended for use as a stock rebuilding tool. Further, since this final rule is not expected to increase trap effort, the trap reductions associated with a full business transfer tax are not likely to substantially reduce the jeopardy to marine mammals due to vertical lines, in fact, it may not reduce the number of

vertical lines at all. Trap reductions resulting from full business transfer taxes are not a measure under consideration in the proposed amendment to the Atlantic Large Whale Take Reduction Plan (78 FR 42654, July 16, 2013), wherein several options are under review with the express intent to reduce the potential harm to whales and other marine mammals due to vertical lines from lobster traps and other fixed gear. Again, when asked if the Commission wanted NMFS to covert trap caps to trap allocations in Area 1 in order to facilitate transfer debiting, the Commission declined to seek such.

Comment 2: One lobster fisher commented that failure to implement a full business transfer tax might lead to manipulation of a transfer to avoid the tax. The individual suggested taxing full business transfers only in the areas where transferability occurred.

Response: NMFS disagrees. Lobster permits are not area specific. Federal permit holders can choose to fish in any or all areas for which they are qualified. Permit holders change designations year-to-year; e.g., a permit holder might designate Areas 2 and 3 one year, Area 1 the next year, and non-trap (mobile gear) fishing the third. This ability to choose multiple areas and change them year-to-year highlights the interconnectedness of the areas and why management measures should not be considered in the vacuum of a single area. Limiting permit holders to a single area–in this instance, to separate out Area 1 fishers so that a transfer tax can occur in other areas–might simplify management and reduce opportunities to manipulate the system, but it would also restrict lobster business flexibility. On balance, NMFS has determined that the potential benefits of such a measure do not outweigh the cost in reduced flexibility.

Comment 3: One lobster fisher and one industry association commented that transfer taxes, such as a 10 percent tax on full business transfers, were a useful tool to prevent the activation of latent effort. A different association and different lobster fisher, however, suggested that past trap cuts and the future Addendum XVIII trap cuts created a relatively lean industry such that a significant activation of latent effort was unlikely.

Response: NMFS does not expect this final rule to increase effort and therefore, a tax on full business transfers is not necessary to prevent the activation of latent effort. Further, existing trap caps and the 10 percent trap transfer tax provide additional assurance that effort will not increase, as does the Commission's Addendum XVIII trap cuts that the states have implemented and which NMFS is proposing. See Advanced Notice of Proposed Rulemaking published in Federal Register volume 78, page 51131. NMFS discussed the issue of latent trap activation and trap transferability in detail in its proposed rule responses to Comments 7, 13, and 14 (78 FR 35217, June 12, 2013) and those responses remain relevant.

Comment 4: Two people commented in opposition to taxing full business transfers. One of the individuals stated that an owner should be able to transfer a permit in and out of Confirmation of Permit History (CPH) and amongst vessels owned by the person without the allocation being taxed. The other individual commented that the taxing of full business transfers could have unintended consequences insofar as an operative definition of "business" is unknown and might be interpreted to encompass transfers that industry would not want covered, such adding immediate family members as co-owners or incorporating the business.

Response: This final rule does not tax full business transfers.

Comment 5: One association supported NMFS's proposed Trap Transfer Program, but expressed concern that Program participants from Area 1 would have to forfeit their Area 1 permits. The association suggested that Area 1 permit holders be excluded from implementation of this initial phase of the transfer program, but that NMFS allow for future change to the rule in the event that Area 1 adopts permit-based allocations instead of the current trap cap.

Response: This final rule implements the Trap Transfer Program as proposed. As a preliminary matter, some of the commenter's characterizations are inaccurate. For example, Federal lobster permits are not assigned specific fishing areas; they can fish for traps in any area for which they have qualified, or fish with non-trap gear anywhere in the EEZ. As such, there is no such thing as a separate Federal "Area 1 permit." Further, the final rule would not automatically disqualify Area 1 participants upon entry into the Trap Transfer Program. Permit holders can purchase allocation and remain qualified for Area 1 and many may choose to do so (e.g., Area 1 individuals with a small Area 3 allocation may seek additional Area 3 allocation in order to designate Areas 1 and 3 on their license without the Most Restrictive Rule making such impossible). Area 1 qualifiers would, however, forfeit their Area 1 eligibility if they chose to sell traps. As discussed in the response to Comment 1, there is presently no way to debit Area 1 traps and prevent an expansion of fishing effort other than to altogether restrict that person from fishing in Area 1 in such a circumstance. On balance, NMFS asserts the Program benefits to Area 1 trap buyers outweigh the negatives to Area 1 trap sellers. Selling traps is optional and may, in some circumstances, represent the best course of action for an Area 1 business. The rule will allow Area 1 qualifiers to weigh the consequences, analyze what is best for them, and to act accordingly.

Comment 6: One business association and one lobster fisher opposed the proposed rule's treatment of multi-area trap history, commenting that transferred allocation should retain its history and that trap transfer recipients should be allowed to fish in any area for which that trap allocation qualified. A different association supported the proposed rule, commenting that the recipient of allocation with multi-area trap history should be required to choose a single area, but that the allocation's multi-area history be retained in the lobster database. The Commission wrote in favor of allowing those who purchase traps with multi-area history to fish the traps in all the areas for which they are qualified.

Response: This final rule allows recipients of trap allocations with multi-area history to retain and use that trap history to fish in multiple areas. This is a change from the proposed rule, which proposed that transfer recipients of multi-area allocation had to forever assign a single area to that allocation. The change provides lobster businesses with greater flexibility to potentially fish in multiple areas. The proposed version followed Commission Addendum XII, which recommended paring down a multi-area trap allocation to a single area. Addendum XII's recommendation was predicated on a perceived need to keep things simple for the Trap Tag Database. Since that time, however, the Atlantic Coastal Cooperative Statistics Program's (ACCSP) Lobster Trap Transfer Database subcommittee indicates that it can develop a database that can track multi-area trap allocation history. Given that new development, the Commission rescinded its Addendum XII recommendation on August 6, 2013, when it approved Addendum

XXI. Addendum XXI incorporates into the Lobster Plan a provision to allow the declaration of multi-area history for transferred traps. To be compatible, the final rule withdraws this proposed requirement and retains the status quo; i.e., trap fishers can fish traps in all the areas for which the trap has qualified.

Comment 7: Commenters universally supported the need for a centralized database that can keep track of all permit allocations and transfers. These commenters generally indicated that the database needs to be fully functional and tested before transferability can begin. One association went so far as to state that transferability cannot be expected to progress without it.

Response: NMFS agrees and has repeatedly stated at Commission Lobster Board meetings that a fully developed and properly functioning trap allocation database is a necessary prerequisite to any trap transfer program.

Comment 8: One lobster fisher commented that, although the database needs to be fully functioning prior to the start of a trap transferability program, the database should not be allowed to hold up the implementation of transferability and that NMFS should be forceful to make sure the database is completed and tested on time.

Response: NMFS agrees that the database must be fully functional prior to the start of the Trap Transfer Program and understands that the industry wants the trap transfer program in place as soon as possible. NMFS has been participating, along with state and industry representatives, in a working group to provide guidance to the ACCSP database team as they develop the trap transfer database. It remains unclear, however, when the database will be ready, and having a live trap transfer program in place without a fully completed and tested database would prove dysfunctional and ineffective. Consequently, NMFS faced the dilemma of publishing the final rule with a concrete timeline for transferability, which could prove to be inaccurate given the unknown timing of the database, or publishing the rule and deferring the implementation of the Trap Transfer Program until such time that the database is fully functional. Understanding the industry's desire for trap transferability, particularly in advance of the SNE trap cuts, NMFS chose the latter option.

Consequently, this final rule implements the program as proposed. In the near term, NMFS will begin the qualification and allocation process for Federal lobster permits in Area 2 and the Outer Cape Area. The final rule also sets forth the Trap Transfer Program. When the completion and release date of the database is known, NMFS will file a subsequent notice which will establish the timeline and effective dates for the Trap Transfer Program.

Comment 9: One lobster fisher commented that the Addendum XVIII trap cuts will potentially be devastating to industry and that they need the Trap Transfer Program to mitigate the trap cut impacts.

Response: This final rule establishes the Trap Transfer Program; however, the effective date for this program has been postponed pending the completion of the Trap Transfer Database. The proposed trap cuts are the subject of a separate rulemaking action, and NMFS intends to coordinate the timing of the Trap Transfer Program to allow fishermen to utilize it as a means of mitigating the potential economic effects of the proposed trap cuts.

Comment 10: Commenters universally supported the Trap Transfer Program and urged that it be implemented as soon as possible.

Response: NMFS agrees and intends to implement the Trap Transfer Program as soon as it is reasonable and practicable. Depending on when the Trap Transfer Database is ready to process trap transfers, NMFS intends to begin its Trap Transfer Program during the 2014 Federal fishing year, but the effective date of the transfers will not be until the start of the 2015 Federal fishing year. Before any Area 2 or Outer Cape Area transfers can take place, applicants must first apply, be qualified, and receive a trap allocation for those areas (Area 3 qualifiers already have set allocations). Next, individuals must opt into the program, states and NMFS will need to reconcile any disparate allocations, and the transfer market must be given at least minimal time so that interested sellers can find interested buyers. Trap transfer agreements will then need to be submitted, approved by multiple governments, and entered into the Trap Transfer Database, after which the buyer will need newly issued trap tags from the trap tag vendor. Pending completion of the Trap Transfer Database, NMFS has determined it can accomplish this by the close of the 2014 Federal fishing year, to take effect at the start of the 2015 Federal fishing year, but not sooner.

Comment 11: One association commented that trap cuts should precede transferability so that "inactive traps don't get reactivated."

Response: One potential benefit to having trap cuts precede transferability is that the trap cuts would remove effort–including potentially latent effort–before it could be transferred. However, NMFS does not expect the activation of latent effort to be a significant issue in this matter (see response to Comment 3). Given that latent effort is not expected to be significant, NMFS is implementing the Trap Transfer Program in this action; any trap reductions will be implemented through a separate rule-making.

Comment 12: One association said that trap cuts should happen after transferability, a different commenter offered that cutting traps whilst in transferability was also a viable option.

Response: Transferring traps before trap cuts negates the Trap Transfer Program's usefulness as mitigation. Businesses that need to fish at or near their area trap cap would never be able to do so. In this scenario, to whatever extent buyers purchased allocation up to the cap, the trap cuts would knock that allocation back down for the next fishing year. Transferring traps whilst in the midst of trap cuts is also problematic. The FEIS confirms that aligning buyers and sellers and their respective managing agencies is challenge enough—to introduce shifting allocation as a further variable presents a moving target for businesses and administrators that will make alignment more difficult and time consuming. Ultimately, NMFS believes the final rule allows for the Trap Transfer Program time such that possible trap cuts would neither undermine the Program, nor nullify the Program's potential as mitigation.

Comment 13: A number of commenters suggested that NMFS extend the trap tag expiration date and delay the issuance of trap tags beyond the new fishing year so that new trap allocations, trap cuts, and the next trap tag cycle can become linked.

Response: NMFS disagrees, and this final rule takes no steps to extend the trap tag expiration date or to delay the issuance of trap tags. Variables such as the trap tag ordering dates (February for Federal permit holders, December for Massachusetts, and other months for other states) and differing start dates to for the fishing year (May 1 for Federal permit holders, January 1 or July 1 for the states) illustrate the tremendous logistical challenge that exists to begin a new program in coordinated fashion. NMFS, however, does not believe that extending the trap tag expiration date will be necessary. Most commenters' desire to hurry transferability and/or to alter variables such as trap tag issuance is so lobster fishers will not be forced to endure trap cuts while waiting for the NMFS Trap Transfer Program to be finalized. Addendum XVIII states that trap cuts cannot be enacted until NMFS implements its transferability plan. The final rule anticipates that date to be the start of the 2015 Federal fishing year, which will provide sufficient time to account for trap cuts and process transferred trap allocation.

Comment 14: Numerous commenters supported allowing buyers to purchase allocation above an area trap cap, which would be unfishable, but which could be drawn upon and activated if trap cuts lowered a fisher's allocation below the cap.

Response: This concept–referred to as "trap banking" in earlier Commission documents–was approved for Area 2 in Addendum XXI in August 2013, and for Area 3 in Addendum XXII in October 2013. Because these actions were only decided upon recently, when the drafting of this final rule was nearing completion, NMFS was unable to conduct a thorough analysis of the "banking" measures, but plans to do so under a separate rulemaking. NMFS did, however, analyze the issue preliminarily in its FEIS and concluded that implementing the Trap Transfer Program without trap banking will not undermine the Trap Transfer Program, nor would it necessarily prevent trap banking from being added to the Program in the future if the Commission decided to recommend such.

Comment 15: One Association and one lobster fisher commented in support of increasing the Area 3 trap cap to 2,000 traps. The Commission's Lobster Board adopted the 2,000 trap cap for Area 3 in Addendum XIV to the Lobster Plan on May 5, 2009, and perpetuated this measure when it approved Addendum XXI on August 6, 2013. Addendum XXI adopted a five-year trap cap reduction schedule for Area 3 starting at 2,000 traps. Consequently, the Commission recommended that NMFS align the Area 3 trap cap to coincide with the 2,000 trap cap in the Lobster Plan.

Response: This final rule will not change the Area 3 trap cap in the Federal regulations which is currently at 1,945 traps. The FEIS for this action did not analyze the change in the trap cap for Area 3 and NMFS is analyzing this measure in concert with the trap reductions for Area 2 and Area 3, as well as the other measures adopted by the Commission in Addenda XVII and XVIII, which were intended to address the recruitment failure in the SNE lobster stock. NMFS asserts that the adoption of the 2,000 trap cap should be assessed within the context of the five-year trap cap reductions under Addendum XVIII, which are outside the scope of this rulemaking.

Comment 16: The Connecticut Department of Environmental Protection recommended that the trap transfer process be conducted in a manner that allows for the fair participation of all

citizens and should be done in an open forum and in conjunction with the Commission's Trap Transfer Database.

Response: NMFS desires its Trap Transfer Program to be open and accessible. The Program, however, is new and participant behavior and response is unknownable at this point. NMFS does not want to introduce variables that would engineer market behavior in response to a problem that may not exist. NMFS intends to monitor its Trap Transferability Program and agrees with the Commentator that the agency should, and will, work with the Commission to investigate ways to make available transferable trap allocations known and accessible to participants.

Comment 17: The Commission agreed that all Federal lobster permit holders be allowed to purchase transferable trap allocations for Areas 2, 3, and the Outer Cape Area.
Response: NMFS agrees and adopted this measure as part of the Trap Transfer Program to allow those Federal lobster permit holders who do not initially qualify for the trap fishery in these areas to obtain access through the purchase of transferable traps. Further, the participation of more potential buyers will provide more options for trap transfers which will improve the opportunities for lobstermen to customize the size of their businesses and take full advantage of the Program's opportunities to improve business flexibility. The potential for more transfers due to a larger participant pool may assist in reducing trap fishing effort through the transfer tax.

Appendix 8

Addendum IV

2001

- February, 2001: Technical Committee reviews the results of the coast wide trawl surveys
    - Results of the MA and RI trawl survey indicates a decline in the abundance of male and female pre-recruits

2002

- August 26, 2002: Lobster Board Meeting
    - Half day workshop on trap transferability
    - Board tasked the Technical Committee to detail the Area 2 issues by providing information on the following; a chronicle of the stock decline, a spatial extent of the stock decline, and a review of trawl survey data and sea sampling data
    - Technical Committee would then advise the Lobster Board as to whether the current addenda are able to address these issues
- October, 2002: Commercial Fisheries News Article
    - "Transferable lobster traps: The next step"
    - Discusses the option of trap transferability , discussing the ASMFC lobster trap transferability workshop held in August, and the options of trap transferability being discussed through the addendum process.
- November 20, 2002: Lobster Board Meeting
    - Technical Committee report presented, in which they concluded that the current addenda and overfishing definition would not be sufficient management tools to remedy the stock decline in Area 2
    - Technical Committee recommended: reduction in fishing mortality in Area 2, charge the Area 2 LCMT with developing management measures to reduce fishing effort, and modifications of the biomass-based and F-based reference points to the management measures
    - Subcommittee (MA, RI, CT, NY, NMFS) tasked with exploring trap transferability options

2003

- January, 2003: Subcommittee meets to discuss trap transferability options
- February, 2003: Lobster Board Meeting
    1. Area 2 LCMT proposed management measures to address Area 2 stock decline: increase in gauge size in July of 2003 and another increase in gauge size in December of 2003; zero tolerance v-notching; and to cap the Area 2 effort at the current level for the number of traps and number of fishermen under a limited access program (LAP) based on fishing history

2. Plan Review Team recommends Emergency Action to reduce fishing mortality
3. Board votes to take Emergency Action to address the stock decline in Area 2, with an increase in gauge size to 3-11/32", effective immediately, and 3-3/8" on July 1, 2003

- February 26, 2003: ASMFC Press Release
  1. Emergency Action taken in response the Area 2 stock decline
- March 17, 2003: ASMFC Press Release
  1. Public hearing Schedule (4 in total) on Addendum IV
- June 10, 2003: Lobster Board Meeting
  1. Escape Vent Size: Based on a study completed by MA DMF, it was determined that the current escape vent dimensions for one rectangular vent was not comparable to the dimensions of two circular vents with a diameter of 2.5 inches each. Therefore, the circular vent diameter was changes to 2-5/8 inches
  2. Most restrictive rule: The most restrictive rule is re-defined so that lobster permit holders with multiple areas are not adversely affected by having to abide by the most restrictive of their individual trap allocations for all areas elected on their permit
  3. Area 3 Management Measures: Increase in the active trap reductions for Area 3 and a transferable trap program
  4. Area 2 Management Measures:
     - Plan Development Team Area 2 proposals: keep the current overfishing definition, set targets to achieve a lower fishing mortality, quota with a hard Total Allowable Landings, seasonal and area closures, altering the existing conventional management measures, moratorium
     - Area 2 LCMT proposals: freeze entry into Area 2, individual trap allocations (based on historic landings: >1,000 lbs=800 traps and <1,000 lbs=100 traps); anyone who purchases a permit (through a transfer) after January 1, 2004, would be subject to a 400-trap limit (if the original qualifier received an 800-trap allocation) or a 50- trap limit (if the original qualifier received a 100-trap allocation); trap transferability option of one transfer per year with a 20% transfer tax per transfer; limit to the size that a vessel can upgrade, less than 15% of the size of the qualifying vessel.
     - Board voted to have the Plan Development Team do further analysis on each Area 2 management proposal, to include the LCMT proposal as well
- July 8, 2003: Board task to Technical Committee
  1. Technical Committee tasked with the development of a total allowable landings estimate that would lead to the rebuilding of the Area 2 stock
- July 15-16, 23, 2003: Technical Committee meetings
  1. Discuss Board recommendation to come up with a TAL estimate
- August 23, 2003: Technical Committee meeting

    1. Discuss Board recommendation to come up with a TAL estimate
- August 25-28, 2003: ASMFC Summer Meeting
    1. Board approved the following management measures to be included in draft Addendum IV: effort control via a LAP for Area 2, a total allowable landing, Area 2 gauge size increases, and an Individual Trap Transfer (ITT) program for Area 3
    2. Technical Committee Report: a benchmark of 1.14 million pounds for the total allowable landings should serve in the interim as the Board works through Addendum IV
    3. Board approved the draft Addendum IV for public comment
    4. Board votes to extend the Emergency Action by one year
- August 28, 2003: ASMFC Press Release
    1. Approval of draft Addendum IV for public comments
- September 26, 2003: ASMFC Press Release
    1. Public hearing Schedule (10 in total) on Addendum IV
- November 19, 2003: Advisory Panel Meeting
    1. Discuss the management measures outlined in draft Addendum IV as well as review the public comments on draft Addendum IV
- November 26, 2003: Deadline for public comments on Addendum IV
- November, 2003: Area 2 LCMT Meeting
    1. Discuss the management measures outlined in draft Addendum IV
- December, 2003: Lobster Board Meeting
    1. Based on public comments, modifications were made to draft Addendum IV: Target Total Allowable Landings would increase from 1.14 million pounds to 2.1 million pounds; LCMT LAP trap allocation would change so that landings history of 1-1,999 pounds would receive 100 traps, and landings history of 2,000 or more pounds would receive 800 traps
    2. Other motions voted on: increase the minimum Area 2 gauge size, the trap escape vent size for all areas, adopt the changes to the “most restrictive” definition, and implement a transferable trap program in Area 3.
    3. Board voted to adopt Addendum IV
- December 18, 2003: ASMFC Press Release
    1. Approval of Addendum IV
- January, 2004: Addendum IV becomes available to the public

Appendix 8

Addendum VI

2003

- November 20, 2002: Transferability subcommittee was created
- December, 2003: Lobster Board approves Addendum IV

2004

- May 17, 2004: The transferability subcommittee met to discuss the issues with transferability, particularly within the Area 2 effort control plan
- May 20, 2004: AP Meeting
    - In order to avoid splitting up the Area 2 effort control management measures, The AP ultimately decided that the best option would be for both the Lobster Board and NMFS to move forward with the implementation of the transferability program
- May 26, 2004: Lobster Board Meeting
    - The transferability subcommittee presented the issues that came up at their meeting on May 17th
    - the transferability subcommittee was concerned with the issue of "pregnant boat syndrome" (splitting of federal and state permits, which would double the number of traps)
    - NMFS informed the subcommittee that they would not be able to implement the transferability program immediately and in accordance with the compliance schedule
    - the states implementing the Area 2 transferability program would have difficulty in organizing a uniform transferability program based on the certain limitations of these states
    - Board voted on: (1) the states would move forward with the Area 2 and AOC effort control; (2) the withdrawal (from Addendum IV) of the recommendation that NMFS promulgate the Area 2, 3, and Outer Cape management measures; and (3) the transferability subcommittee would further outline the details about the initial allocation and transferability steps for the Area 2 effort control plan
- August 2, 2004: Transferability subcommittee meeting
    - The committee worked on allocation details, transferability details, and details concerning the issues with the "pregnant boat syndrome"
- August 17, 2004: Lobster Board Meeting
    - MA also expressed concern that the effort control measures of Area 2 would not be successful at reducing fishing effort because the allocation in itself would dramatically increase the number of traps in Area 2.

    - MA also explained that since the conservation tax for the first transfer is 50%, permit holders would not likely use the transferability program. Therefore, the goals of reducing some fishing effort through the passive reduction of a conservation tax may not work.
    - NMFS expressed to the Board that the initial allocation of 100 or 800 traps is one of their concerns as the qualification parameters vary by one trap, but the allocation varies by 700 traps
    - MA proposed that the Board allow the jurisdiction states of Area 2 be given the opportunity to meet with the Area 2 LCMT and discuss a substitute effort control plan to take place through an Addendum VI process
    - The Area 2 effort control measures in Addendum IV would be changed except for the eligibility period and the prohibition on the issuance of any new Area 2 permits
- September 1, 2004: Transferability subcommittee meeting
    - Goal: design a revised Area 2 effort control plan
    - Two Area 2 LCMT meeting scheduled for October
- September 8, 2004: Transferability subcommittee meeting
    - Continue working on a revised Area 2 effort control plan
- October 5, 2004: Area 2 LCMT Meeting
    - Discuss the issues of the initial Area 2 effort control plan
    - Discuss benefits of a revised plan
- October 21, 2004: Area 2 LCMT Meeting
    - Allow LCMT to comment on the revised plan for Area 2
- November 8-11, 2004: Annual ASMFC Meeting
    - the Board approved draft Addendum VI for public comments and public hearings, to take place in the upcoming months
- December 1, 2004: ASMFC Press Release
    - announced the release of draft Addendum VI for public comments
- December 7, 2004: Massachusetts hearing on draft Addendum VI
- December 13, 2004: Rhode Island hearing on draft Addendum VI
- January 7, 2004: Deadline to submit public comments on draft Addendum IV

2005

- February 8, 2005: Lobster Board Meeting
    - Board members reviewed the draft Addendum and public comments (ten comments were received during the comment period)
    - The jurisdictional states of Area 2 were directed to develop an Area 2 effort control plan in time for the Lobster Board meeting in August, 2005
- February 9, 2005: ASMFC Press Release
    - Approval of Addendum VI

Appendix 8

Addendum VII

2005

- February 8, 2005: Lobster Board Meeting
  - Lobster Board voted to approve Addendum VI to the American Lobster Interstate Fishery Management Plan, Amendment 3
  - Addendum VI withdraws the Area 2 effort control plan that was part of Addendum IV's management measures
  - The Addendum VI also states that the jurisdictional states of Area 2 would work with the Area 2 Lobster Conservation Management Team (LCMT) to develop an effort control plan that could be implemented by all jurisdictional states and NMFS to be ready at the Lobster Board meeting in August, 2005. An Area 2 effort control subcommittee was formed to include representatives from Massachusetts, Rhode Island, Connecticut, New York, NMFS, and the Area 2 LCMT.
- July 25, 2005: Letter to Lobster Board from subcommittee
  - Letter discussing the level of latent effort that currently exists within the MA and RI lobster industry, due to a decrease in fishing success and stock abundance
- May 9, 2005: Lobster Board Meeting
  - Area 2 effort control subcommittee presented their Area 2 effort control measures
  - The following measures were considered:
    - (1) a target allocation of lobster traps;
    - (2) historical data to be used for individual trap allocations; and
    - (3) a freeze on gauge size at 3-3/8 inches.
  - The subcommittee asked the Lobster Board to provide guidance on a target number of traps as they were directed to maintain traps at or near the total number of active traps in the 2003 qualifying year.
- August 17, 2005: Lobster Board Meeting
  - Subcommittee presented draft Addendum VII for the Board to review:
    - (1) qualification criteria for Area 2;
    - (2) elimination of permit splitting so that one entity, whether a dual permit holder or not, would receive one qualification and allocation for Area 2;
    - (3) an overall trap cap in Area 2, to take place after the individual traps are allocated;
    - (4) method of future trap reduction in the event that the total number of individual trap allocations exceeds the trap cap, taking into consideration the 25 percent increase of traps that was suggested by the Lobster Board;
    - (5) flexibility in the trap cap established to account for the results of the next stock assessment;

        - (6) trap transferability within the same state for partial trap transfers, and trap transferability between states for full business trap transfers;
        - (7) an anti-monopoly clause,
        - (8) exemptions from the qualification requirements based on military or medical hardships, and
        - (9) minimum gauge size to remain at 3-3/8 inches instead of the gauge size schedule that results in 3-1/2 inches on July 1, 2008.
    - Lobster Board voted to have draft Addendum VII to be released for public comment.
- September 6, 2012: ASMFC Press Release
    - Press release inviting the public to review and comment on draft Addendum VII
    - Dates and locations of public hearings in RI, MA, and CT
- September 28, 2005: Rhode Island public hearing on draft Addendum VII
    - 35 attendees
- October 3, 2012: Massachusetts public hearing on draft Addendum VII
    - 28 attendees
- October 5, 2012: Connecticut public hearing on draft Addendum VII
    - 1 attendee
- October 12, 2012: Deadline to submit public comments on draft Addendum VII
    - 6 comments were received through email
    - 13 letters were received
    - 3 form letters were received, one form letter had 47 signatures, one form letter had 38 signatures, and one form letter had 37 signatures
    - Total of 141 public comments
- October 31, 2012: Lobster Board Meeting
    - The subcommittee presented an edited version of draft Addendum VII to include clarification language based on the public's feedback. A newly drafted Addendum VII was dated October 27, 2012.
    - The Board then voted to approve Addendum VII with the following management measures:
        - (1) If the total number of allocated traps exceeds the trap cap, then each permit holder would have a decrease in traps based on an established percentage;
        - (2) individual trap transfers would be allowed, but interstate trap transfers could only take place after NMFS has implemented the recommended management measures;
        - (3) an anti-monopoly clause would restrict permit holders from acquiring more than two permits in their name unless the permit holder retained more than two permits prior to the year 2003;
        - (4) an appeals process by proof of medical and military hardship;

        - (5) a minimum gauge size of 3-3/8 inches; and
        - (6) 2001-2003 would serve as the qualifying years for the Area 2 permit qualification
        - (7) trap allocations would be determined by the highest number of "effective traps fished" from landing data
- November 3, 2005: ASMFC Press Release
    - Approval of Addendum VII
- December, 2005: Commercial Fisheries News Press Release
    - Discusses the Area 2 effort control plan with its provisions of moratorium on Area 2 permits, trap caps, individual allocations, trap transferability, and freeze on gauge increases. The article also mentions that the initial allocations would become effective in 2007.

Appendix 8

Addendum XII

2005

- October 31, 2005: Lobster Board Meeting
  - Addendum VII is approved by the Board
    - Area 2 effort control measures, specifically a limited access program for Area 2 lobster permit holders with 2001-2003 as the qualification years, as well as a trap transferability program in Area 2.
- November 8, 2005: ASMFC Press Release
  - Revealed the results of the 2005 stock assessment.
  - Based on the biological reference points recommended by the Plan Developmental Team, the stock assessment results indicated that the Southern New England lobster stock is depleted and that overfishing was taking place.
- January, 2006: Advisory Panel Report
  - The Southern New England stock is low and fishing mortality is high.
- May, 2006: Addendum VIII is approved
  - Establishes new biological reference points, based on the 2006 stock assessment.
- August 15, 2006: ASMFC Press Release
  - Area 2 trap transferability program to consider a percentage to use as a conservation tax through draft Addendum IX.
  - Landings data collection program initiated through a draft Addendum X
- October 23, 2006: ASMFC Press Release
  - Addendum IX is approved, and establishes a 10% conservation tax on trap transfers in Area 2
  - Draft Addendum X is approved for public comments, proposes a landings data collection program
- February, 2007: Addendum X is approved
  - Establishes management measures to improve the data used in stock assessments.
- May, 2007: Addendum XI is approved
  - Establishes a rebuilding timeframe for the Southern New England lobster stock.
- March 5, 2007: Massachusetts memo to trap transferability subcommittee
  - Identifies some of the inconsistencies between the existing trap transferability programs:
    - Dual permit holders with multiple area qualifications could split their state and federal permit as well as their area qualifications, and increase the overall traps in these qualified areas.
    - Massachusetts proposed that the most restrictive rule should apply to trap transfers and trap caps. The proposed most restrictive rule would modify the updated most restrictive rule that was established through Addendum IV. For example, if a permit holder decides to transfer his state or federal

permit to another individual, any traps retained by the original permit holder would have an equivalent reduction in the number of traps transferred to the new permit holder.

- March 8, 2007: Trap transferability subcommittee meeting
    - Discussed the implementation of the Area 2 limited access program and trap transferability program.
    - Some issues arose regarding trap transferability, which could affect Area 2 and other management areas with trap transferability.
- April, 2007: Trap transferability subcommittee draft White Paper document
    - The purpose of the white paper was to identify the drawbacks of the trap transferability program as it relates to Area 2, and how these flaws might also relate to other trap transferability program.
    - The trap transferability subcommittee intends to have a transferability program for Area 2 that can also be applied to other management areas.
    - As most states have implemented the trap transferability program, and NMFS has not yet implemented the trap transferability program, discrepancies exist between dual permit holders as they are given individual allocations at the state level, but NMFS does not recognize these individual trap allocations.
- May 8, 2007: Lobster Board Meeting
    - The trap transferability committee presented their draft white paper document.
    - Some of the transferability issues include:
        - permit splitting amongst dual permit holders,
        - initial trap qualification splitting amongst multi-area lobstermen,
        - effort shift between different lobster management areas, and
        - allocation disconnects that may exist between the states and NMFS.
    - The final White Paper would be presented at the upcoming lobster board meeting.
- August 10, 2007: Trap transferability subcommittee meeting
    - Work done to complete the white paper document
- August 13, 2007: Lobster Board Meeting
    - The trap transferability subcommittee presented an update on the white paper, which remained incomplete due to the complexity of the issues of trap transferability.
- October 29, 2007: Lobster Board Meeting
    - The trap transferability subcommittee presented their final white paper document, which identified some drawbacks of the trap transferability program, and also lists some recommendations for the lobster board to review and provide comments.
    - The following discrepancies were identified in the white paper:
        - (1) the state issues permits to the individual while NMFS issues permits to the fishing vessel;

        - (2) pregnant boat syndrome, in which a permit holder splits his permit and creates two fishing histories out of one fishing history;
        - (3) inconsistent state's implementation of the limited access programs and trap transfer programs could lead to enforcement issues;
        - (4) the splitting of one fishing entity, in which a permit holder splits his state and federal permit, but also splits his multiple-area qualifications, eliminating the most restrictive rule and increasing the number of traps in either area; and
        - (5) the need for a trap transfer tracking database to be accessible by all jurisdictional states and NMFS, in order to alleviate the tracking of permit histories as they change when a trap transfer transaction takes place.
    - The Board voted to incorporate the trap transferability subcommittee's White Paper document as the initial development of draft Addendum XII, in order to address the issues of trap transferability.
- October 29, 2007: ASMFC Press Release
    - Announces the initiation of draft Addendum XII, which proposes to establish some basic protocols for the implementation of a consistent trap transferability program, which could be applied to all the lobster management areas.
    - Draft Addendum XII intends to establish flexibility in the lobster fishery so that lobstermen can react to the various effort control plans, as well as maintain the conservation goals of the various effort control measures.
    - Draft Addendum XII is being prepared in time for the lobster board meeting in February, 2008.
- February 4, 2008: Lobster Board Meeting
    - Issues with trap transferability is addressed:
        - The initial allocation for the limited access programs differed depending on the lobster management area. For example, the qualifying years for the Area 2 limited access program was 2001 to 2003, and the qualifying years for the Area 3 limited access program was 1991-1997. As the qualifying years differed, permit holders could potentially be allocated a trap limit that is larger than any past year of fishing.
        - Due to differences in the timing of implementation of the limited access programs, trap transferability became delayed as all jurisdictional states and NMFS must first qualify and allocate traps in each area before allowing trap transfers to take place.
        - The issue of dual permit holders with a single fishing history was also discussed. In this case, the dual permit holder used both state and federal permits on the same vessel and would therefore receive one trap allocation. If that dual permit holder split his permits by selling either his state or federal permit, then it raises the question: Does the history go with

one of the permits? If yes, which permit would be entitled to the history? Or, does the history go with both permits? If the history goes with both permits, then the number of traps doubles. Draft Addendum XII proposes to have the single fishing history remain with the federal permit once a dual permit is split.

- Possibility of trap migration between state and federal waters by restricting the transfer of traps for state-only traps to remain in state waters and federal-only traps to remain in federal waters. For example, a Maine state-only permit holder would not be able to buy trap tags from a federal and use those traps to fish in the federal waters.
- The most restrictive rule definition was also discussed in draft Addendum XII: ASMFC uses the updated definition of the rule that was implemented through Addendum IV, while NMFS continues to use the most restrictive rule as defined in Amendment 3.
- The need for a centralized database to keep track of the trap transfers. In order to develop the centralized database, a source of funding would need to be identified.
- The trap transfer subcommittee also recommended that each transfer should have at least a ten percent conservation tax placed on the management area in which the trap transferability program exist, and that conservation tax could be increased, but would be LCMA-specific.
- Prior to the development and use of a centralized database, the trap transferability subcommittee proposed that transfers should only occur between state-only permit holders, and remain within each state. Once the database is developed, a representative from each state and NOAA would form a committee to manage the transfers of traps, and for multi-area permit holders, all representatives that have jurisdiction on the area/permit would have to agree on the trap transfer before it is allowed.
- Partial trap transfer for multi-area permit holders that would avoid an increase in traps. The original permit holder was bound by the most restrictive rule so that he did not independently fish his trap allocations for each area designated on his permit. Therefore, when transferring some of those traps to another permit holder, the original permit holder would receive a reduction in his retained traps by the number of transferred traps.
- Area 1 remains the one management area that has not implemented a limited access. Therefore, in order to avoid an increase in effort in Area 1, the trap cap of 800 in Area 1 would be treated as an allocation, so that if a permit holder elects to transfer a certain number of traps, his Area 1 allocation, for the purposes of transfers, would be reduced by that same

number. Effectively, all areas would then be treated the same in terms of multi-area partial transfers.
    - Board voted to approve draft Addendum XII for public comment.
    - The Board also voted to add language in the draft Addendum that would provide an estimate for the cost of implementing a trap transfer centralized database as well as the cost to maintain it. This would allow the public to comment on the costs as well as provide input on a source of funding.
- February 6, 2008:ASMFC Press Release
    - Approved draft Addendum XII for public comment.
- March 4, 2008: ASMFC Press Release
    - Listed the schedule of 11 public hearing dates concerning draft Addendum XII
- March 27, 2008: Advisory Panel (AP) Meeting
    - Discussion on draft Addendum XII:
        - AP supported the status quo option of the most restrictive rule so that the definition would remain the same, as implemented through Addendum IV.
        - AP also supported the need for a centralized database for trap tag transactions, and believed that the state and federal entities should cover the cost of implementing the program, while the fishing industry cover some of the costs associated with maintaining the database, but could not agree on whether the support from the industry should only apply to those permit holders with the ability to transfer, or whether the support should apply to the entire group of lobster permit holders.
        - AP also supported the 10 percent minimum transfer tax. The AP did not support the limitations of trap transfers with the state boundaries for all permit holders in the interim of the created centralized database. The AP believes that the restriction on trap transfers should apply to each lobster management area.
        - AP supported the restriction to disallow permit holders to elect Area 1 once they have participated in a trap transfer program.
- April 11, 2008: Deadline to submit public comments on draft Addendum XII
- April, 2008: Commercial Fishing News Press Release
    - Addendum XII and its trap transferability program.
    - The news article listed the upcoming public hearing dates, times, and locations concerning Addendum XII.
    - The news article also indicated that the executive director of the Maine Lobstermen's association wrote a memo to its members concerning Addendum XII's public hearings, as it would affect Area 1 permit holders if Area 1 were to implement a trap transferability program in the future.

    - The news article outlines some of the main issues with the trap transferability program, including the issue of finding a funding source for the centralized database.
- May 5, 2008: Lobster Board Meeting
    - All public comments submitted and discussed at the public hearings were reviewed, as well as the Advisory Panel Report.
    - In the interest of reaching a consensus on some of the more controversial issues of Addendum XII, it was suggested that the trap transferability subcommittee should be made a bit broader to include some of the differences of opinions could be worked out prior to the lobster board meeting in August, 2008.
- August 19, 2008: Lobster Board Meeting
    - The Commonwealth of Massachusetts (Massachusetts) representative presented some issues they would like the Board to address concerning the trap transferability program and some discrepancies that currently exist between the state and federal entities
    - Massachusetts had some reservations on the expectations set forth for the centralized database, and asked that the Board make some changes to simplify the goals of the database so that the transferability program can move forward.
    - Massachusetts also recommended that NMFS should move forward with the implementations of the management measures of Addendum VII, but that NMFS should adopt the initial allocation that the state of Massachusetts has already done so that the initial allocations are identical.
    - The Board decided that the document prepared by Massachusetts along with draft Addendum XII should be reviewed by the trap transferability subcommittee as well as the Advisory Panel, and brought before the Board at the annual ASMFC meeting.
- October, 2008: Commercial Fisheries News Press Release
    - The article summarized the discussions that took place at the lobster board meeting on August 19, 2008.
    - The article also summarized the next steps in the Addendum XII process, to include a meeting with the trap transferability subcommittee and an Advisory Panel conference call.
- October 21, 2008: Annual ASMFC Meeting
    - Draft Addendum XII was modified with significant changes that would require the draft addendum to be published for additional public comments.
    - Some of these changes included:
        - (1) state-only permit holders would be allowed to transfer among their state-only counterparts, dual permit holders would be allowed to transfer among their dual counterparts and within the same state;

        - (2) the addendum would adopt the most restrictive rule definition from Amendment 3, not Addendum IV;
        - (3) permit holders would no longer be allowed to elect Area 1 for trap fishing if they have participated in a trap transfer;
        - (4) the conservation tax would not apply to transfers until NMFS has implemented a trap transfer program; and
        - (5) dual permit holders splitting their permits through a transfer would have the permit history remain with the federal permit, unless the permit holder voluntarily relinquishes their federal permit, therefore allowing the history to remain with the state permit.
    - The trap transfer subcommittee also prepared a memo dated October 17, 2008, listing recommendations of trap transfer options that should be revisited once the transfer program has been implemented. This would include revisiting the definition of the most restrictive rule and also considering allowing transfers to occur across state waters and federal waters.
    - The Board voted to approve the newly drafted Addendum XII for public comments.
- October 23, 2008: ASMFC Press Release
    - Announced the approval of draft Addendum XII for additional public comments.
- February 2, 2009: Lobster Board Meeting
    - The public comments of draft Addendum XII were reviewed.
        - Two public comments were received, one comment supported the most restrictive rule as defined in Addendum IV, and one comment supported the most restrictive rule as defined in Amendment 3.
    - Board voted to approve Addendum XII.
- February 4, 2009: ASMFC Press Release
    - Announces the approval of Addendum XII.

Appendix 8

Addendum XIII

2000

- March, 2000: Stock Assessment Completed

2001

- February, 2001: Addendum II approved
    - Updated egg production rebuilding schedule for Area 2 and the Outer Cape, based on the results of the March 2000 Stock Assessment
- March 28, 2001: A control date of January 1, 2001 was set for the Outer Cape Limited Access Program
- April 3, 2001: Outer Cape LCMT Meeting
    - Voted in favor of a gauge increase and trap cap
- April 17, 2001: Outer Cape LCMT Meeting
    - Voted in favor of the years 1999 or 2000 to serve as the years to determine a maximum trap allowed, and the highest of those numbers would be reduced by 20%
- October 2001: ASMFC approves Draft Addendum III for public comment, to include the Outer Cape measures outlined below:
    - Outer Cape becomes Limited Entry, with 1999 and 2000 as qualification years
    - Initial Trap Allocation based on landings from 2000 or 2001
    - Trap transferability program in the Outer Cape, with an annual trap transfer period of January 1 through March 31
    - Passive transfer tax of 10% per transaction
    - Trap haul out period of January 1 through March 31
    - Closed area
- November 2001: States Schedule Public Meetings (6 in total) on Draft Addendum III
- November 2001-December 31, 2001: Public comment period for Draft Addendum III

2002

- January 17, 2002: Technical Committee Meeting
    - Discussed Addendum III and provided comments to the Lobster Board to be presented at the February 2002 meeting
- January 28, 2002: Technical Committee Meeting
    - Discussed Addendum III and provided comments to the Lobster Board to be presented at the February 2002 meeting
- February 20, 2002: Addendum III approved
    - 20% trap reduction in the Outer Cape Area from 2002 to 2008, with 2008 as a deadline

Appendix 8

2003

- January 27, 2003: Advisory Panel Meeting
    - Reviewed MA proposal of equivalent conservation methods to Addendum III
- December, 2003: Commonwealth of Massachusetts proposes equivalent conservation methods to the Lobster Board
    - Increase qualifications years to include 2001 for the limited access program
    - Initial trap allocation based on landings history in 2000 and 2002

2006

- August 29-31, 2005: Stock Assessment showing an improvement in the Gulf of Maine and Georges Bank lobster stocks

2007

- October 29, 2007: At Lobster Board Meeting, the Commonwealth of MA motions for the initiation of Draft Addendum XIII to include the following changes:
    - Incorporate into a new addendum the MA conservation equivalency plan previously accepted in December of 2003
    - Extend the 20% reduction if effort from the 2008 deadline, to incorporate the results of the 2006 Stock Assessment
- October 29, 2007: ASMFC Press Release on the initiation of Draft Addendum XIII
    - Commonwealth of Massachusetts equivalent measures to Addendum III
    - Same measures as listed in Addendum III with the following changes; the additional 20% reduction scheduled to take place in 2008 would be eliminated, and increase in the qualification period for the Outer Cape Limited Access Program (1999-2001)

2008

- February 4, 2008: At the ASMFC Winter Meeting, the Lobster Board votes in favor of MA equivalent measures of effort control (Addendum XIII)
- February 6, 2008: ASMFC Press Release stating Draft Addendum XIII has been approved for public comment
- March 14, 2008: ASMFC Press Release on the scheduled public hearings
- April 8, 2008: Hearing on Addendum XIII takes place in Chatham, MA
- April 11, 2008: Public Comments Deadline
- May 5, 2008: ASMFC Spring Meeting, Lobster Board votes in favor of Addendum XIII

Appendix 8

Addendum XVII

2009

- May 5, 2009: Lobster Board meeting
  - Technical Committee (TC) presented the Lobster Stock Assessment conducted in March 2009.
  - The report stated that the Southern New England Lobster stock is at a low level of abundance and is experiencing recruitment failure, caused by environmental factors and continued fishing exploitation.
  - The peer review panel recommended that the Lobster Board consider additional management options to address the SNE lobster stock condition.
  - The Lobster Board tasked the Technical Committee to draft management options to address the SNE lobster stock conditions.
- May 7, 2009: Press Release
  - Commission announced the results of the stock assessment and its availability.
- July 23, 2009: Technical Committee Report
  - Technical Committee prepared a report to the Lobster Board with recommendations to respond to the SNE recruitment failure.
  - Recommendations for stock rebuilding by 2022, as mandated under the Lobster Plan, to include the following:
    - A moratorium on fishing in SNE, reductions in quota and/or landings;
    - Fishing effort reductions by 50 percent;
    - Closed seasons and areas; and
    - Modification to the maximum size limit.

2010

- March 23 and 24, 2010: Technical Committee meeting
  - Discussion on the management options to address the SNE lobster stock rebuilding.
- April 17, 2010: Technical Committee Report
  - Management options to address the SNE Lobster stock condition
- May 3, 2010: Lobster Board meeting
  - Technical Committee presented its report to the Lobster Board
  - Board voted to initiate a new Addendum to the Lobster Plan that would include a suite of management options ranging from the status quo to a moratorium on lobster fishing in SNE.
- May 6, 2010: Press Release
  - The Commission announced its intention to draft an addendum that would address the low SNE lobster stock abundance and recruitment failure.

Appendix 8

- June 25, 2010: Press Release
  - Gloucester Times published a news article on the poor health of the SNE lobster stock and the potential 5-year moratorium being considered by the Lobster Board.
- July 22, 2010: Lobster Board meeting
  - The Technical Committee was tasked to evaluate the impacts on lobster landing for some of the management options being considered (closed areas, closed seasons, quota-based management, trap reductions, v-notch requirements, and changes to the minimum and maximum gauge size.
  - The Lobster Board also voted to consider three options to address fishing mortality in SNE, including a 75 percent reduction in exploitation, a 50 percent reduction in exploitation, and a status quo option.
- July 23, 2010: Press Release

Appendix 8

Addendum XVIII

2009

- May 5, 2009: Lobster Board meeting
  - Technical Committee presented the Lobster Stock Assessment conducted in March 2009.
  - The report stated that the Southern New England Lobster stock is at a low level of abundance and is experiencing recruitment failure, caused by environmental factors and continued fishing exploitation.
  - The peer review panel recommended that the Lobster Board consider additional management options to address the SNE lobster stock condition.
  - The Lobster Board tasked the Technical Committee to draft management options to address the SNE lobster stock conditions.

2011

- November 7, 2011: Lobster Board meeting
  - Board initiated the development of Addendum XVIII, which would address the second phase of the SNE rebuilding plan
- November 9, 2011: Press Release
  - Commission announced the Board's approval of the development of draft Addendum XVIII, which would reduce exploitation within LCMAs 2 and 3 to the size of the SNE resource.

2012

- February 7, 2012: Lobster Board meeting
  - Addendum XVII was approved by the Commission's Lobster Board
    - Addendum XVII addressed the first phase of the SNE rebuilding plan, which included broodstock measures and closed seasons.
  - The Area 2 Lobster Conservation Management Team (LCMT) met two weeks prior to the February Lobster Board meeting, and made changes to the management measures in draft Addendum XVIII.
  - The Lobster Board reviewed these measures during the meeting.
  - Draft Addendum XVIII proposed a consolidation program that would first address latent effort in the SNE fishery for LCMAs 2 and 3 then reduce traps fished in these LCMAs.
    - Reduction in trap effort would be based on the allocated number of traps assigned to permit holders in past addenda for LCMA in 2007 and LCMA 3 in 2003.

        - LCMA 2 proposes a large initial trap cut to remove latent effort in the area, and smaller subsequent trap reductions.
        - LCMA 3 does not propose an initial trap cut, but rather subsequent trap cuts because LCMA 3 already went through a trap reduction program in previous years.
- May 2012: Commission published draft Addendum XVIII for public comment
- July 10, 2012: Public comment deadline on draft Addendum XVIII
- August 7, 2012: Lobster Board Meeting
    - Board reviewed draft Addendum XVIII.
    - Board voted to approve the Area 2 LCMT-preferred trap reduction of an initial 25 percent reduction, followed by a 5 percent annual trap reduction for 5 years.
    - The Board also voted to approve the LCMA 3 option of an annual 5 percent trap reduction over a period of 5 years, which was not the Area 3 LCMT preferred option.
    - Draft Addendum XVIII also proposed some changes to the Trap Transfer Program for LCMAs 2 and 3. The Lobster Board voted to accept the trap reduction schedule for LCMAs 2 and 3, and consider all other measures related to ITT to be addressed in a subsequent addendum.
- August 9, 2012: Press Release
    - Commission announced its approval of Addendum XVIII.

Commission also announced its decision to defer action on alterations to the Area 2 and 3 ITT program for consideration in a future addendum.

Appendix 8

Addendum XIX

2012

- August 7, 2012: Lobster Board meeting
    - Board reviewed draft Addendum XVIII and approved the Addendum's management measures of trap reductions in LCMAs 2 and 3.
    - Additional measures proposed involved changes to the ITT Program in LCMAs 2 and 3.
    - The Board voted to postpone these management measures in a separate addendum.
    - The Area 2 LCMT proposed a multi-area history retention for partial transfers in LCMA 2, and single-area history retention for full business transfers. The Area 2 LCMT also proposed an ownership cap of 1,600 traps per permit, and controlled growth that allows a maximum of 400 traps to be transferred per year.
    - The Area 3 LCMT proposed a 10-percent conservation tax on full and partial business transfers (status quo would be 20 percent on partial business transfers and 10 percent on full business transfers), single or multi-area history retention for partial business trap transfers, and single or multi-area history retention for full business trap transfers. Also proposed by the Area 3 LCMT was a single ownership cap on permits, trap cap on the number of traps a vessel can fish, an aggregate ownership cap, banking of traps, and controlled growth.
    - NMFS stated that it is currently working on its rulemaking to implement a trap transferability program, and any measures considered by the Board would have to be done in a timely fashion if it is to be included in NMFS's upcoming rulemaking.
- October 22, 2012: Lobster Board meeting
    - Board discussed measures to consider for possible inclusion in NMFS's upcoming ITT rulemaking:
    - The Board discussed changing the LCMA 3 conservation tax from 20 percent (full business transfers) to 10 percent for full and partial business trap transfers, as proposed by the Area 3 LCMT.
    - Board voted to approve the LCMA 3 transfer tax change to 10 percent for full and partial transfers, to be incorporated as the only management measure in draft Addendum XIX.

  - All other measures were complex and required further discussion before going forward as an addendum.

- October 24, 2012: Press Release
  - Commission announced its approval of draft Addendum XIX
  - Also announced its intention to develop draft Addendum XX that would address the changes to the ITT program.
- December 5, 2012: The public comment deadline on draft Addendum XIX

2013

- February 19, 2013: Lobster Board meeting
  - Board approved Addendum XIX, with recommendation for NMFS to consider incorporating the LCMA 3 transfer tax in its upcoming ITT rulemaking.
  - Modifications to the ITT program were also discussed through the development of draft Addendum XXI.
  - Board voted to delay its approval of draft Addendum XXI until the May 2013 Lobster Board meeting.
  - Board would also work on developing a definition of ownership for the purposes of the ITT program.
- On February 20, 2013: Press Release
  - Commission announced its approval of Addendum XIX and its continued development of draft Addendum XXI.

Appendix 8

Addendum XXI

2012

- August 7, 2012: Lobster Board Meeting
    - Board discussed proposed modifications to the Trap Transferability Program in LCMAs 2 and 3.
    - Board voted to draft a separate addendum to consider these ITT measures.
- October 22, 2012: Lobster Board meeting
    - Board began its development on draft Addendum XXI, which proposes several modifications to the Trap Transferability Program for LCMAs 2 and 3, including:
        - Single ownership trap cap (trap banking), controlled growth, multi-area history retention for partial trap transfers, and aggregate ownership cap.
        - These management measures respond to the Southern New England poor lobster stock conditions.
        - This draft addendum is the second addendum of phase 2 (Addendum XVIII was the first addendum of phase 2) of the SNE rebuilding plan.

2013

- May 20, 2013: Lobster Board meeting
    - Board reviewed the management options of draft Addendum XXI and voted to approve draft Addendum XXI for public comment.
- June 7, 2013: Press Release
    - Commission announced its approval of draft Addendum XXI
- July 15, 2013: Public Comment deadline on draft Addendum XXI
- June 26, 2013: Public meeting
    - Joint hearing conducted by the Massachusetts and Rhode Island state fishery agencies.
- August 6, 2013: Lobster Board meeting
    - Board reviewed draft Addendum XXI and the public comments received on the draft addendum.

- Board voted to approve Addendum XXI with the following management measures in LCMA 2:
  - (1) multi-area history retention on full and partial trap transfers, which allows permit holders to designate all areas it intends to fish its traps on an annual basis while retaining all area histories associated with its purchased traps;
  - (2) single ownership trap tax (previously called trap banking), which allows permit holders to buy traps in excess of their trap allocation up to 1,600 traps;
  - (3) a sunset provision for LCMA 2's single ownership cap to expire this management measure two years following the date of the last trap reduction set according to Addendum XVIII;
  - (4) and an aggregate ownership cap of two permits unless the accumulation of permits took place prior to December 2003.
- The Board voted to approve the following management measures in LCMA 3:
  - (1) multi-area history retention on full and partial trap transfers as described above; and
  - (2) LCMA 3 active trap cap of 2,000 traps, to be reduced by 5 percent over a 5-year period. Several management options to the ITT Program in LCMA 3 are postponed for inclusion in a future addendum (Addendum XXII).

Appendix 8

Addendum XXII

- August 6, 2013: Lobster Board meeting
    - Board voted to delay its approval of several management options within Addendum XXI to the ITT Program in LCMA 3, to be included in this subsequent addendum
    - This was done in order to address data errors in two tables presented at the Board meeting to accurately reflect the trap reduction schedule in LCMA 3
- September 16, 2013: Press Release
    - Commission announces the publication of Draft Addendum XXII for public comments
- October 17, 2013: Public comment deadline for Draft Addendum XXII
- October 28, 2013: Lobster Board meeting
    - Board voted to approve Addendum XXII
        - LCMA 3's single ownership cap in excess of the active trap cap limit implemented in Addendum XXI
            - LCMA 3 individual permit cap schedule: 2,333 traps to be reduced by 5 percent in each of the four subsequent years, to take into account LCMA 3's trap reduction schedule
    - Aggregate ownership cap of no more than five times the single ownership cap in LCMA 3
        - If a single entity (individual or company) owns more than five times the single ownership cap prior to NMFS's control date, that entity may retain that trap ownership.
        - LCMA 3 aggregate cap schedule: 11,665 traps to be reduced by 5 percent in each of the four subsequent years, to take into account LCMA 3's trap reduction schedule
    - Board recommended that NMFS enact a control date of October 28, 2013 (or alternative data at the earliest date possible) to implement LCMA 3 aggregate ownership cap
- October 30, 2013: Press Release

Appendix 8

- Commission announces its approval of Addendum XXII
- Commission publishes Draft Addendum XXIII for public comment

Appendix 9

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

JUN 1 2 2007

NOTICE TO AMERICAN LOBSTER PERMIT HOLDERS FISHING IN AREA 2, 3 AND OUTER CAPE COD LOBSTER CONSERVATION MANAGEMENT AREAS

This Notice is to remind all Federal American lobster permit holders that the Atlantic States Marine Fisheries Commission (Commission) has taken, and that the National Marine Fisheries Service (NMFS) is contemplating taking, actions that may impact your lobster fishing business.

At present, the Commission has recommended that NMFS implement regulations that would potentially further limit access to Lobster Conservation Management Areas 2, 3 and the Outer Cape Lobster Conservation Management Area. As you are aware, the states and NMFS manage lobster within the framework of the Commission Interstate Fishery Management Plan for American Lobster (Lobster FMP). The Commission, comprised of state and Federal government representatives, coordinates efforts to develop fishery conservation and management strategies for coastal species, including lobster. Upon developing the strategy, the Commission will recommend that the states and NMFS create regulations to implement the strategy in their jurisdictional waters. The states manage lobster within the waters of their individual states, out to 3 nautical miles from shore, while NMFS manages lobster for the Federal government and has primary jurisdiction in waters 3 to 200 nautical miles from the shoreline.

Based on Commission recommendations, NMFS published an Advance Notice of Proposed Rulemaking in the Federal Register on May 10, 2005 (70 FR 24495), announcing its intention to evaluate a suite of measures that include limited access and/or transferable trap programs in LCMAs 2, 3, and the Outer Cape LCMA. Further, NMFS has noted in Federal Register notices dating from September 1, 1999 (64 FR 47756), that the agency would consider limitations or restrictions to future access to the lobster fishery in certain geographic areas. NMFS analysis of the Commission recommendations is presently ongoing and the agency has not determined what, if any, of the recommendations it will accept.

In the meantime, Federal lobster permit holders should be aware that present Federal lobster regulations remain in effect. NMFS regulations do not currently authorize a program for trap transferability, or the splitting of any Management Area eligibility

associated with a vessel's fishing and permit history, in any LCMA, including LCMA 2, and may not in the future. In addition, Federal lobster regulations require permit holders to abide by the more restrictive of either state or Federal regulations, including, but not limited to, LCMA-specific trap allocations. Further, Federal lobster permit holders should be aware that the sale or transfer of a Federal limited access permit might impact any future potential application into LCMA 2, 3 and the Outer Cape, to the extent that access to those areas is limited based upon a permit's fishing history. As you know, your Federal permit's fishing history is an indivisible part of your Federal lobster permit and cannot be separated and split off of the permit during transfer. NMFS will notify Federal lobster permit holders and interested parties of Federal regulatory actions and opportunity for public comment as appropriate.

For additional information specifically on the Commission Lobster FMP, please visit their website at www.asmfc.org. For additional information on current Federal lobster regulations, the full text of the regulations is available on our website: www.nero.noaa.gov. You may also request a copy of current Federal regulations by calling (978) 281-9327, or by writing to NMFS, State, Federal and Constituent Programs Office, One Blackburn Drive, Gloucester, MA 01930. Thank you for your cooperation.

Sincerely,

Patricia A. Kurkul
Regional Administrator

Lobster History-Based Allocation and Transfer Issues

Report to the ASMFC Lobster Management Board

October 2007

The following White Paper outlines critical issues associated with history-based effort control plans that are based on fishing performance, such as the Area 2 Limited Entry Program that is prominent now and the subject of this White Paper. The issues identified in this document are issues that have yet to be resolved consistently across all impacted management agencies, with emphasis on LCMAs that have implemented transferable trap programs. These issues include: assignment of fishing history, especially for individuals whom hold both a state license and Federal permit (dual permit holder); the potential for fishing effort to increase with trap transfers of multi-Area trap allocations; and review of the Most Restrictive Rule for multi-LCMA trap allocations.

Objective: Identify issues associate with history based allocation and transfer programs and proposes approaches to create ITT programs that provide flexibility to the fishery and that meets the conservation objectives of the plan.

Definitions:
Individual Transferable Trap Program (ITT): a trap transfer program for that allows permit holders to transfer their trap allocations (i.e. buy or sell traps, but not lease traps).
Permit Holder: a holder of a Commercial Fishing Permit or License from a Federal or state management authority (Note: the States license the individual; NOAA Fisheries permits the vessel)
Dual Permit Holder: a person with two fishing permits: one from the state that allows fishing in state water; and a second from NMFS, that allows fishing in federal waters. (Note: the States license the individual; NOAA Fisheries permits the vessel).
Federally Permitted: a vessel that is permitted to fish in Federal waters. This vessel might also need a state landing license to land in a particular state.
Allocation Transferee: the holder of a commercial lobster permit who receives an ITT allocation.
Permit Transferee: the person or vessel who receives/acquires a commercial lobster permit.
Transfer Trap Tax: the Area-specific percentage of each transferred ITT allocation required to be surrendered for conservation purposes

Long-term policy questions that have been identified:
What should be the eventual outcome of these Area-specific allocation schemes? Should these results be further delineation and isolation of permit holders to specific LCMA's? Should permit holders eventually be limited to fewer (or even just one) LCMA? Or should the program work to accommodate flexibility for permit holders by allowing free movement of trap allocations across the fleet. Under this approach, permit holders who currently fish in one (or just two) LCMA's can freely obtain allocation through transfers from additional LCMA's thereby resulting in a blurring of the LCMA and LCMT principles of distinct fleets and fisheries.

Moreover, the jurisdictional aspect of the trap allocations within an LCMA must be addressed. Does it matter if traps migrate from state waters to federal waters (or vice versa) within an

LCMA? Does it matter if traps migrate from the waters of one state into the waters of another state, or from the federal waters off one state to the federal waters off of another state? Committee members have identified scenarios where dual permit holders obtain trap allocation from a state-only permit holder within an LCMA and this could result in a migration of traps from the state- to the federal-waters portion of the fishery or vice versa.

Finally, the ASMFC approved a change to the "Most Restrictive Rule" in Addendum IV regarding trap limits that was not yet adopted by NMFS (currently under rulemaking). Should the "Most Restrictive Rule" be reevaluated given the advent of Area-specific ITT programs that have the potential to increase fishing effort, as discussed in greater detail below?

Potential options for addressing these questions and issues are outlined. It is important to resolve the issues identified in this paper for success of LCMA allocation and ITT programs. Once an ITT program is implemented and permits and traps are transferred, the ability to reverse and correct direction becomes almost impossible.

SECTION I – Background

Through various addenda to the interstate fishery management plan for American lobster, history-based effort control plans based on fishery performance have been enacted by NMFS (Areas 3, 4, and 5) and states (MA in Outer Cape Cod; NY and CT for Area 6; and MA, RI, CT, & NY for Area 2). The only Lobster Management Area without a history-based effort control plan is Area 1. These effort control plans allocate fishing privileges to fish traps within a LCMA based on the permit's documented fishing history. Some Areas have established programs to allow transfers of a portion of permit holder's allocation. In such a program, the transferable allocations are commonly referred to as Individual Transferable Traps (ITTs)

A critical flaw lies in the stand-alone nature of these history based ITT allocation schemes, and the potential impacts that result once these multi-Area ITTs are allowed to be transferred and/or split for dual permit holders (with a single fishing history). The historical time period to qualify for these plans was distinct for each area plan. For Areas 3, 4, and 5 the period to demonstrate fishing performance was 1991-1999; for Outer Cape Cod, the period was 1999-2001; for Area 2 the period was 2001-2003; and for Area 6 the period was 1995-1998. Many vessels or permit holders (depending if it is a federal vessel or a state license) qualified for multiple area-specific trap allocations for the following reasons:

- The discrete qualifying time periods encompasses 12 years and some vessels fishing locations and fishing patterns have evolved and shifted to more than one area over the time period;
- Allocation criteria used to assign effort and landings to a specific LCMA were liberal because statistical areas and LCMA's do not coincide or the area resolution of qualifying data was insufficient;
- Some vessels legitimately fish in more than one LCMA;
- Overlap zones (e.g. LCMA 2&3) are so expansive that landings coming from this area can be attributed to either LCMA

Criteria must be established to allow for consistent assignment of fishing histories for dual permit holders and, most importantly, for ITT transfers to take place once the history-based trap allocations are finalized. Criteria must also be established to address the potential impact of ITT transfers for multi-LCMA trap allocations.

State and Federal lobster fishery managers have identified the problems of "permit splitting", where effort proliferates when a single fishing operation, dually permitted by a state and NMFS, could create a doubling of effort by shifting the state permit to a second vessel while the federal permit remains intact on the original vessel. Consider that a single vessel fishing in multiple areas over the span of 15 years or within the same year may have qualified for more traps in aggregate that it has ever fished. Aggregate trap allocations in excess of its historical maximum constitute latent effort.

SECTION II - Problem Statements

A. Dual Permit Splitting

Example: A dual permit holder accumulates fishing history on a single vessel and later splits the permits. This vessel is sold with the Federal permit/allocation but the individual retains his state license/allocation.

Result: This single lobstering enterprise with a single fishing history has now spawned twice the effort: i.e., both the Federally permitted vessel under new ownership and the original individual retaining the state permit may expect to receive trap allocations based on the same history, thus traps allocated would increase.

Solution: Policies should be developed requiring that all history follows the Federal permit for dual permit holders participating in LCMAs that are part of a history based allocation program.

Dual state/federal permit holders often have a fishing history that is so intertwined that it is, for all intents and purposes, both indistinguishable and indivisible. Records are not precise enough (and in most cases don't even exist) to determine what percentage of the catch was caught in state waters under the state permit, and what percentage was caught in the EEZ under the federal permit. Addendum VII acknowledges this situation by stating that one fishing entity equals one fishing history, even if the single fishing entity fished under both a state license and federal permit. Yet the states and federal government still have exclusive and separate authority over their respective permits even though the permits' history is identical. So, although the States and NMFS will be looking at the same history when making qualification and allocation decisions, those qualification and allocation decisions will be nevertheless separate and independent. Accordingly, there is tremendous need for the States and NMFS to interpret and treat that co-mingled history the same way.

Importantly, the states and NMFS have differing standards on how that history can be treated when transferred. For example, federal fishing history is permanently attached to the federal permit and cannot be split off of that federal permit. So, when a federal permit is transferred to another vessel, that permit's fishing history is automatically transferred to the new vessel with the permit. Certain states, however, allow their state permit's history to be split from the state permit and retained or transferred separately. So, when a dual permit holder (multi-area allocations that arose from a single fishing history) splits his state and federal permits, one full history stays with the federal permit and a duplicate history potentially stays either with the state

permit or if split off that state permit, then possibly stays with the person. In either event, there is the potential to double count the single history and thus proliferate traps, increase effort, and greatly confuse overall management of the fishery.

One potential solution would be for the State to carefully examine the permit history when it is involved in making qualification and allocation decisions. If the State finds that the state license was split from an enterprise that originally fished under dual state/federal permits (with a single fishing history), then the history accumulated during those dual permit years shall be considered to have left the state permit and to have followed the Federal at the time of the split. In other words, when the dual permits holder sells his Federal permit, all of the fishing history is transferred with that Federal permit. Note, this does not resolve the problem of the States and NMFS interpreting a common history differently, but it would help minimize the situations where the states and NMFS might double count a single history that has been split to different lobstering enterprises.

B - Regulatory Consistency
Issue: Qualification and allocation criteria differ by state
Result: Interstate and State/Federal allocations is inconsistent
Solution: Only allow intrastate transfers for state-only permit holders (no dual permits holders) until all agencies that license fishing in trap transfer programs have allocated traps and a method for resolving conflicting allocations for a given area is adopted

Different regulatory strategies to allocations may undermine overall management based on trap allocations. This is less of a problem for state-only permit holders, but the problem is acute for dual permit holders with a single fishing history, especially where allocations and trap transferability is involved. Specifically, NMFS has one set of lobster regulations that apply equally to permit holders regardless of state citizenship. Accordingly, it is exceedingly difficult for NMFS to create one set of uniform federal regulations that match all of the state's regulations when inconsistencies in the states' regulations exist. The end result will be that the federal regulations will differ from at least some of the states' regulations, which will result in some dual permit holders receiving different allocations based upon the same fishing history. These differing allocations will create confusion and be difficult (and presently impossible) to track as they are transferred. It is also unclear whether differing jurisdictions will honor decisions made by another jurisdiction that differs from their own.

At present, there is no ASMFC approved Area 2 trap transferability plan (under development with this white paper), although the Commonwealth of Massachusetts has commenced transfers among its LCMA 2 and Outer Cape Cod permit holders. Addendum VII (November 2005) states that one be developed in the future. Addendum IX (October 2006) further acknowledges that the Area 2 transferability plan still has yet to be developed, although once one is, the addendum mandates that it contain a transfer tax component.

Near term restriction of trap transfers would help mitigate the potential for chaos and prevent further expansion of the problems created by state/state and state/federal disconnects. First, allow no dual State/Federal permits holders to transfer their traps until all agencies that license fishermen/vessels authorized to participate in such ITT programs have assigned initial historic

trap allocations, and resolved any differential allocations. Second, allow no multi-jurisdictional transfers (either from one state permit holder to a permit holder of another state, or permit holders with dual state/federal permits or a state-only to a dual permit holder with a single fishing history) until agencies within the effected LCMA adopt and implement the ITT program. In the meantime, trap transfers within a state (among the same state, state-only permit holders) or sales of full fishing business could be authorized (within existing agencies regulations).

It should be noted that many industry members who supported the effort control plan for LCMA 2 established by Addendum VII, as well as some state officials, envisioned a scenario where traps could be more freely transferred among permit holders and across jurisdictions especially between state-only permit holders and dual permit holders. This may not be possible without a formal position taken by the Board with consensus from NMFS

C - ITT Administration
Issue: No multi-agency procedure to track ITT programs; annual application period for transfers varies by agency; no communication system between agencies for ITT transfers
Result: Inaccurate trap allocations and administrative burdens increase
Solution: Establish and fund a multi-agency tracking system

Tracking fishing history will create tremendous logistical issues as allocations are split amongst permits and transferred as part of an ITT program. There is presently no uniform mechanism to identify and track permit fishing history across all impacted state and Federal jurisdictions nor is there any uniform measure to identify and track traps as they become transferred within and among state jurisdictions. These logistical issues will become compounded and more problematic as transfers proliferate and are re-transferred in successive years.

There is a compelling need to establish and fund an expandable, web-based, tracking process for all multi-jurisdictional historic trap allocations and trap transfers. Initially this tracking process can address Area 2, but should be expandable to incorporate other Areas with ITT programs. This tracking system would be managed by one entity, but all agencies should supply supporting data. This tracking system will address the logistical issues, enable a measure of the success of ITT programs, and increase the understanding of how many traps have the potential to be fished in each LCMA area.

It also mitigates the potential for chaos and prevents further expansion of the problems created by potential individual and unique state/state and state/federal tracking systems. Creating and funding a single tracking system will reduce the administrative burden on all agencies working to coordinate ITT programs. It will create a single set of regulatory guidelines that is consistent across participating state and federal jurisdictions.

One solution: Do to administrative limitations, transfers among users would be allowed in the following sequential order as centralized tracking system evolves:

1. Transfer of allocation among state-only license holders (within the same state-only). This option will require funding for states with insufficient administrative support. A preliminary cost would be 30(K).

2. Dual permit holders from state to Federal waters (within the same state-only) *[Comment - NMFS is unclear on this option, we feel that anything other than "within state transfers by state-only coastal permit holders" would need a tracking system. If a dual permit holder buys coastal/state-only traps, the buyer may be at risk of losing or not being able to fish the new state-only traps if NMFS does not acknowledge that transaction when they qualify/implement]*
3. Complete ITT transfers. Any permit holder with traps in an LCMA with an established trap transfer program may sell traps. For this option to occur, a full tracking system must be established and funded.

Cost for a Complete Tracking System
Preliminary estimates to fund a web-based tracking system:
1. Start up: 200(K) (design and implement tracking system)
2. Annul maintenance 80 (K) (salary and benefits for one individual to maintain database)

If this tracking program were not funded, then transfers across jurisdictions (e.g. state to state, or any transfer involving a dual permit holder) open access transfers would not be possible, resulting in a smaller pool of transfers. A smaller number of transfers result in less conservation value(fewer trap reductions through the conservation tax).

D - Multi-LCMA Trap Allocations
Issue: Current Area-specific plans fail to recognize that many permit holders have distinct area-specific history-based allocations in more than one LCMA, and some Area-specific plans allow sale of allocations without recognizing the effect on the permit's overall allocation and/or authorization to fish traps.
Result: Area specific allocations can be split by LCMA and sold; trap numbers increase if allocations are not reduced proportionally across all LCMAs
Solution: When area-specific allocations are transferred, apply an Anti-Stacking Rule trap sale

Because of the different qualifying periods, and the assignment of allocations in multiple areas due to a lack of LCMA-specific harvest information (such as the 2/3 Overlap), some permit holders have trap allocations in multiple LCMAs that, in combination, are greater than the number of traps the license (or vessel) has ever fished. For example, a person might have historically fished no more than 800 traps at any one time, but moved those traps seasonally, so that they received an 800 trap allocation in each LCMA 2, 3, and Outer Cape. These "additional" traps could increase the amount of effort in any given area if dual permits with a single fishing history are allowed to be split off while retaining the allocation in other areas (see Problem Statement A). Similarly, if a permit holder with a multi-LCMA trap allocation (be it a dual permit holder or state-only license holder) is allowed to treat that multi-LCMA allocation as separate and individual history and therein transfer some of that history (in the form of traps) without it impacting the history (in the form of traps) in the other LCMAs, then double and triple counting of history will occur and effort will similarly increase.

To resolve this problem, apply the Anti-Stacking Rule to trap transfers. Fishermen cannot stack (combine) histories or area allocations as if they were separate and distinct (the Anti-Stacking Rule) because, in reality, they weren't separate and distinct when the qualifying fishing history was accrued. Nor for the same reasons should they be allowed to split and transfer LCMA

allocations as if the allocations (and the histories upon which they were based) were separate and distinct. For example, a dual permit holder with 800 Area 2 traps and 1000 Area 3 traps can't fish 1800 traps. Why? Because historically, the business operation never fished 800 traps in Area 2 whilst fishing 1000 traps in Area 3. It was one operation of 800-1000 traps historically, and it is the intention of the ISFMP to treat it as one operation of 800-1000 traps now. So, the business can not act as if there are 1,800 traps (800 Area 2 traps added to 1000 Area 3 traps) to transfer. A permit holder must subtract the number of traps transferred from each LCMAs starting number of traps allocated.

For example: if a permit holder has three trap designations: (1) LCMA 3: 1200 traps, (2) LCMA 2: 800 traps; and (3) LCMA 4: 600 traps, then at any given time this fishermen is not permitted to fish more than 1200 traps[1]. Applying this concept to transferability, if he sells 400 LCMA 2 traps, then his overall portfolio would be reduced by 400 traps. His portfolio would become (1) LCMA 3: 800 traps; (2) LCMA 2: 400 traps; and (3) LCMA 4: 200 traps, and can fish no more than 800 traps, and can only transfer 800 traps in the future.

Seller Current Allocation	Transfers	Seller Trap Allocation	10 % Transfer Tax	Buyer Trap Allocation
800 LCMA 2	400 LCMA 2	400 LCMA 2	40	360 LCMA 2
1200 LCMA 3		800 LCMA 3		
600 LCMA 4		200 LCMA 4		

This solution follows the ISFMP's effort control strategy articulated in its addenda and Amendments since 1997. From acknowledgement in Amendment 3 that "maintaining existing cultural and social features" was a goal, to the creation of history based limited access programs in six out of the seven LCMAs, and finally to Addendum VII's guidance that permit holders with single fishing histories not be allowed to split (replicate and double count that history) the Lobster ISFMP has consistently sought to recognize the actual on-the-water history of the lobster fishery and to prevent technical interpretations that would distort that history and lead to effort proliferation. This present solution follows this theme; it ensures that additional traps that were not historically fished will not enter into the fishery. It allows effort levels to remain consistent with what each entity traditionally has fished, thus protecting the lobster stock from additional mortality from increased fishing effort.

ITT Conservation Tax and Application Deadlines

For each trap transfer program that is designed for a LCMA, it is recommended that a conservation tax of at least 10% be put in place to further reduce traps and allocations. For partial allocation transfers: all applications for transfers would have to be submitted by a date certain, annually (e.g. November 1). For full fishing business transfers: sale of an entire fishing business can take place at any point of the year.

[1] Note: Under the federal version of the most restrictive rule, this permit holder would be limited to fishing the lowest trap allocation among the LCMAs they chose. For example, if the holder elected Area 4, the trap limit would be 400 traps regardless of where they fished.

ITT Ownership Limits
An ownership limit (anti-trust clause) should be established. An ownership limit would ensure the existing social and cultural features of the fishery, as asserted in objective number 4 of Amendment 3 to the FMP. Owner-operated vessels predominate the lobster fishery. Allowing entities to freely purchase and lease ITT could result in the concentration of permits and traps into the control of a few entities thereby change the character features of this fishery. Once a buyer has reached the trap cap for the area, traps can no longer be purchased with that area designation (or any traps purchased over the cap would be automatically relinquished).

Declare Only One LCMA if Obtaining Trap Allocation from a Multi-Area Permit Holders.
As noted in the examples for Issue C, some permit holders have been allocated traps in several ITT Areas. When held by a permit holder with historic trap allocations in several limited access LCMAs, one can view these as traps having fishing privileges for multiple LCMAs. When these traps are sold, the associated fishing privileges for multiple LCMAs must be accounted for. However, depending on the permit holders fishing history, it is possible for an individual trap to have fishing privileges for up to seven LCMAs. The potential for one entity to purchase traps from several permit holders, each potentially having fishing privileges in several different LCMAs, could result, over time, in the ownership of traps with dozens of combinations of fishing privileges. The ability of administering agencies to track, and the vender to issue trap tags under such a complicated ITT program is not practical. Therefore, to reduce the administrative burden (from accumulated LCMA permutations), and to enhance the ITT conservation benefits, when purchasing traps that were historically multi area traps, the purchaser must designate a single LCMA that the newly acquired traps will be authorized to be fished in.

Area 1 Conundrum
LCMA 1 is the only LCMA that has not established a history based allocation program. While states (ME, NH & MA) have varying degrees of limited entry, permit holders are subject to trap caps, not permit-specific allocations based on prior fishing performance. Moreover, under Federal regulations, all federal permit holders are eligible to elect Area 1 and fish traps in that area. This includes 1) federal permit holders who fish non-trap gears; 2) those who may have fished in other LCMA's but have been granted inadequate levels of traps through history-based allocation programs; and 3) those who have never (or not recently fished) in the fishery. Any of the aforementioned permit holders with a Federal permit may designate LCMA 1 to his Federal permit.

As fishermen fail to qualify and are squeezed out of the other limited access areas, the potential for migration of effort into Area 1 exists. Further, by establishing a transfer program in these other areas, it is possible that additional effort (traps) may shift into the LCMA 1. For example, an entity that is operating under an LCMA 1 trap cap of 800 traps and an LCMA 3 allocation of 800 traps (he has both a ME state license and a Federal permit). That individual may have an incentive to sell his federal vessel and permit but retain his state license to fish up to 800 LCMA 1 traps in ME waters. The new buyer now owns the federal permit with an LCMA 3 allocation, but because there is no history-based program for LCMA 1, that buyer can also fish up to 800 traps in LCMA 1. The net result would be a doubling of effort in Area 1 (800 traps under the state license with the original owner and 800 traps under the Federal permit with the new owner).

One option to resolve this problem might be to develop some type of limited entry program in LCMA 1. While Draft Amendment 5 (under development) makes reference to an Area 1 limited entry program, the specifics on potential qualification and allocation criteria are lacking. Given LCMA 1's size and significance to the nation's overall lobster harvest, any potential LCMA 1 limited entry program should be set forth in great detail and only after significant input from the Area 1 fishermen, its LCMT, the Advisory Panel, and the public.

To resolve this problem, alternative approached should be considered:
For example, any permit holder who transfers or receives a trap allocation in a transfer may no longer be eligible to fish in Area 1 or elect Area 1 on their state or federal permit.

A type of limited entry program could be developed in LCMA 1. See example below:

Seller Current Trap cap or Allocation	Transfers	Seller Trap Allocation	10 % Transfer Tax*	Buyer Trap Allocation
800 LCMA 1 Trap cap – not an allocation)		Ineligible to fish in LCMA 1		Ineligible to fish in LCMA 1
1200 LCMA 3 Allocation	1200 LCMA 3	0	120	1080 LCMA 3

*For this examples purpose, the buyer's trap allocation is based on a 10% conservation tax.

Another option could be developed for Area 1: The seller's A1 trap cap could be reduced by an equivalent amount to the number of traps for the LCMA that was sold.

Seller Current Trap cap or Allocation	Transfers	Seller Trap Allocation	10% Transfer Tax*	Buyer Trap Allocation
800 LCMA 1 Trap cap – not an allocation)		400 LCMA 1 (personal trap cap)		Ineligible to fish in LCMA 1
800 LCMA 3 Allocation	400 LCMA 3	400 LCMA 3	40	360 LCMA 3

*For this examples purpose, the buyer's trap allocation is based on a 10% conservation tax.

Subcommittee Process:
The Lobster Transferability Subcommittee attendees (Dan McKiernan, Kim McKown, Mark Gibson, Mark Alexander, Bob Ross, Charles Lynch, and David Spencer; Staff: Toni Kerns) have met in March, July, September, and October (August via conference call) of 2007 to continue implementation of the Area 2 History Based Limited Entry and Individual Transferable Trap Program as specified in Addendum VII. As previously noted, several issues with assignment of fishing history and trap transferability were discussed at these meetings that could affect not only the LCMA 2 transfer program, but also any lobster transfer program for LCMAs with

transferable trap programs. The committee continued to refine solutions for the implementation of an Area 2 History Based Limited Entry and Individual Transferable Trap Program as specified in Addendum VII.

Appendix 11

Atlantic States Marine Fisheries Commission

1444 Eye Street, N.W., Sixth Floor
Washington, D.C. 20005
(202) 289-6400
(202) 289-6051 (fax)
www.asmfc.org

Preston P. Pate, Jr. (NC), Chair
George D. Lapointe (ME), Vice-Chair

John V. O'Shea
Executive Director

Working towards healthy, self-sustaining populations for all Atlantic coast fish species, or successful restoration well in progress, by the year 2015

October 11, 2006

Patricia Kurkul, Regional Administrator
National Marine Fisheries Service
Northeast Region
One Blackburn Drive
Gloucester, MA 01930-2298

Dear ~~Ms. Kurkul~~: Pat

At the November 2005 American Lobster Board Meeting, the Board approved Addendum VII to Amendment 3 to the American Lobster Fishery Management Plan (FMP). A copy of the final document is enclosed for your review.

Addendum VII establishes a multi-state effort control program for Lobster Conservation Management Area 2 that governs traps fished in state and federal waters to cap effort (traps fished) at recent levels and allows adjustments in traps based on future stock conditions. This plan attempts to capture the attrition from the fishery, caused by stock decline, thereby preventing a return of overall fishing levels to historic highs of the late 1990's. The plan limits participation to permit holders who have been active in the fishery in recent years, creates permit-holder specific trap limits that are unique and based on reported traps fished and landings, and establishes a transfer program that allows the transfer of trap allocations.

"Predicted Traps Fished" was calculated for 2001, 2002, and 2003 from each fisherman's total landings in each of those years using the established regression relationship for LMA Area 2 to establish the number of traps allocated to each fisherman. The analysis was reviewed by the lobster technical committee (TC). The TC did not identify any technical deficiencies in the available data or the regression analysis. Please let me know if you have any questions or comments.

Sincerely,

Vince

John V. O'Shea

cc: Harry Mears
Robert Ross

Appendix 12

Taking the Pulse of the Lobster Industry:
A Socioeconomic Survey of New England Lobster Fishermen

Gulf of Maine Research Institute
Science. Education. Community.

ACKNOWLEDGEMENTS

This project was the result of many individuals who shared their ideas, provided sound advice, and guided the efforts of Gulf of Maine Research Institute. We would particularly like to acknowledge Jason Maurice of Market Decisions, LLC who remained flexible to our needs and extremely engaged in the project from inception to final product. An exceptional member of the Steering Committee for this project was Eric Thunberg of the Northeast Fisheries Science Center, NOAA Fisheries. Eric conducted much of the analysis and generated many of the tables that are presented in this report. We greatly appreciated his patience, his support, and the time that he was able to give to this project. Kristen (Togue) Brawn provided research support for this project along the way and her contribution was much appreciated.

Our deepest gratitude is toward the lobster fishing community of New England. Members of the Steering Committee who represented the interests of the lobster community were thoughtful and supportive in their engagement with this project. Indeed, without the openness of the lobster fishing community to share their information, this project would not have been possible. Thank you!

Funding for this project was provided by the National Marine Fisheries Service (NOAA Fisheries Service), Northeast Cooperative Research Partners Program (NCRPP). Initiated in 1999, the goals of this program are to enhance the data upon which fishery management decisions are made as well as to improve communication and collaboration among commercial fishery participants, scientists, and fishery managers. NOAA Fisheries Service works in close collaboration with the New England Fishery Management Council's Research Steering Committee to set research priorities to meet management information needs.

For further information on the Cooperative Research Partners Program please contact:

National Marine Fisheries Service (NOAA Fisheries Service)
Northeast Cooperative Research Partners Program

(978) 281-9276 – Northeast Fisheries Science Center, Cooperative Research Office, Gloucester
(401) 782-3323 – Northeast Fisheries Science Center, Cooperative Research Office, Narragansett Laboratory

www.nero.noaa.gov/StateFedOff/coopresearch/

Editors: Laura Taylor Singer and Daniel S. Holland, Design by Petri Tuohimaa
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Gulf of Maine Research Institute

Table of Contents

About This Report 5
Why We Conducted This Survey 7
What Information was Collected 9
How the Survey was Conducted 13
What We Learned - Key Findings of the Survey 15
The "Average" Active Lobsterman in New England 15
Traps to Pounds to Dollars: What was the Scale of 2005 Lobster Operations in New England? ..17
The "Average" Lobster Business for Active Lobstermen in New England 23
How are Lobster Businesses Financed? 25
How Vulnerable are Lobster Fishing Families to a Potential Drop in Landings? 27
Are there other fishing opportunities? 30
What other job skills and/or training do New England lobstermen have? 30
Do New England lobstermen have plans for retirement? 31
Do lobstermen and their families have health coverage? 32
Traditional Fishing Families: Are younger generations preparing to enter the lobster fishery? .. 32
Summary and Conclusions 33
Appendix 35
Inactive Lobstermen 35
References 35

Appendix 12

About This Report

In the summer of 2005, the Gulf of Maine Research Institute (GMRI) initiated a project to collect baseline socioeconomic data on the New England lobster industry through a telephone survey. GMRI contracted Market Decisions, LLC, a market research firm based in Portland, Maine, to administer the survey. A Project Steering Committee was convened to help develop the survey and ensure collection of the most accurate and meaningful data. The Project Steering Committee consisted of federal and state (ME, MA, NH, RI) managers, as well as members of the Maine Lobstermen's Association, Massachusetts Lobstermen's Association, Atlantic Offshore Lobstermen's Association, and the South Shore Lobstermen's Association. The Project Steering Committee helped publicize the project with their constituents, and also assisted with overall outreach and interpretation of the final results.

This summary document provides an overview of the survey results for the *New England Lobster Socioeconomic Survey*. Although this survey sought baseline data in a broad range of areas, two areas were of particular interest to the Steering Committee: vulnerability and effort. Throughout this report, information concerning these two areas will be highlighted. It should be noted that all data presented here are in aggregate form. Those interested in learning more about the results of the survey are encouraged to review the entire report produced by Market Decisions, LLC, available through the Gulf of Maine Research Institute. However, all individual responses to the survey are confidential. No one outside of the market research firm who conducted the phone interviews has access to individual responses.

Project Steering Committee

- Eric Thunberg, National Marine Fisheries Service, Northeast Fisheries Science Center
- Bonnie Spinazzola, Atlantic Offshore Lobstermen's Association
- Patrice McCarron, Maine Lobstermen's Association
- Terry Stockwell and Sarah Cotnoir, Maine Department of Marine Resources
- Dan McKiernan, Massachusetts Division of Marine Fisheries
- Patricia Pinto Da Silva, National Marine Fisheries Service, Northeast Fisheries Science Center
- Cheri Patterson, New Hampshire Fish and Game
- Thomas Angell, Rhode Island Division of Fish and Wildlife
- David Casoni and Bill Adler, Massachusetts Lobstermen's Association
- Clare Grindal, Downeast Lobstermen's Association
- Fred Dauphinee, South Shore Lobtermen's Association

The original survey targeted responses from 12 areas (described on page 13). To facilitate use of these survey results in management, most data in this report is presented by Lobster Conservation Management Area (LCMA). LCMA 1 is divided into ME and NH/MA. In some instances, Maine information is broken down further into three areas: Downeast

About This Report

(zones ABC), Midcoast (zones DE), and Southern Coast (zones FG). Due to the differences inherent in lobstering in LCMA 3 which is further offshore, responses for LCMA 3 will be given separately in several instances.

This report focuses on responses of active lobstermen (For the purpose of this report, active lobstermen are defined as those landing greater than 1000 pounds). General characteristics of all respondents who landed less than 1000 pounds of lobster in 2005 can be found in the Appendix.

The *New England Lobster Socioeconomic Survey* addresses the need for comprehensive socioeconomic data in the New England lobster industry. A great deal of valuable information was collected through this survey. It is hoped that fishermen, managers, and others will use this information to anticipate the socioeconomic impacts of changes in lobster policy and to facilitate sound management throughout the New England lobster fishery. This survey provides baseline information on the lobster fishery, but future surveys will be useful to gauge the changes in the industry over time.

Why We Conducted This Survey

American lobster is the most valuable fishery in the northeastern United States. Northern New England's lobster landings have continued to grow over the past fifteen years, with nearly every year surpassing the last. In 2006, reported lobster landings for Maine, New Hampshire and Massachusetts were over 86 million pounds with a landed value of $363 million. As each year goes by, scientists, regulators and fishermen become more concerned that record setting lobster landings may not continue. Landings in Southern New England peaked several years ago and have declined substantially since. Rhode Island landings peaked at 7.4 million pounds in 1991 and had fallen to less than 3.8 million pounds by 2006 while landings in Connecticut fell from a peak of 3.5 million pounds in 1997 to 792 thousand pounds in 2006.

Lobster landings have risen and fallen over the course of the fishery's history, and current conditions represent an atypical apex in the landings trend (Figure 1). Despite current record lobster landings, some scientists have predicted the potential for a down-turn in landings on numerous occasions.

The 2005 peer-reviewed stock assessment report for American lobster indicates the health of the resource is variable. Throughout most of the Gulf of Maine (GOM) and Georges Bank (GBK), the stock abundance is stable and recent mortality rates are sustainable. However, the report cautions for both GOM and GBK stocks "effort indicators are negative." The report goes on to suggest: "This high effort is concurrent with high stock abundance, and is not likely to be supportable if abundance returns to median levels." (http://www.nefsc.noaa.gov/sos/spsyn/iv/lobster/)

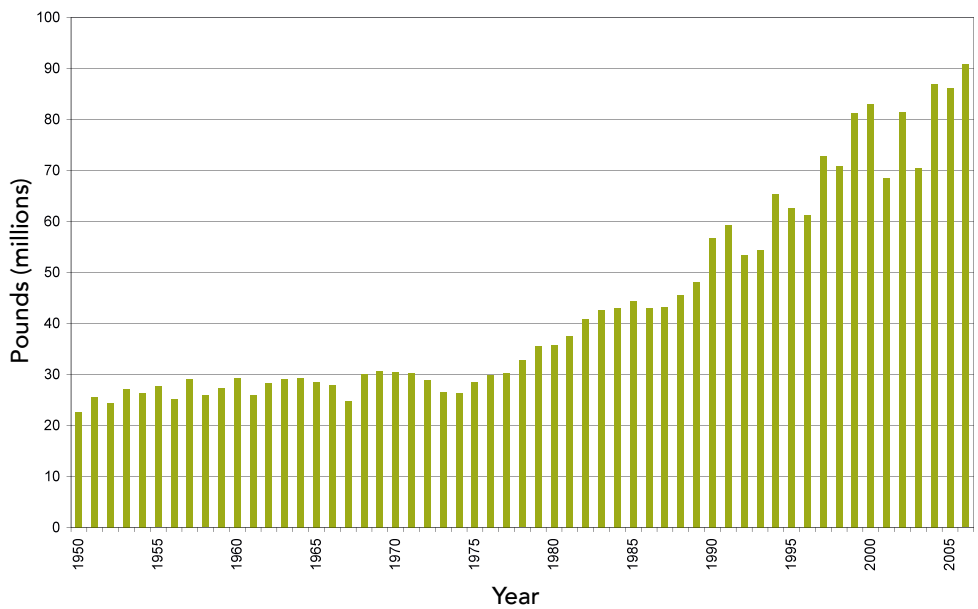


Figure 1: Landings data for ME, NH, MA, CT and RI from 1950-2006 (http://www.st.nmfs.noaa.gov/st1/commercial/landings/annual_landings.html)

Why We Conducted This Survey

In Southern New England (SNE) the lobster resource is estimated to be at low abundance and low recruitment. The depleted stock abundance, low recruitment, and high fishing mortality rates over the past few years have led to consideration of additional harvest restrictions in this area. Decreased recruitment and abundance has also been estimated in Massachusetts Bay and Stellwagen Bank.

While lobster landings have been increasing in Northern New England, other Gulf of Maine fisheries have been declining. The relative health of the lobster resource has allowed the industry to absorb an influx of harvesters displaced from other fisheries experiencing declining stocks. Meanwhile, access to other fisheries in the region has become tightly controlled. It is believed that many fishermen who previously targeted lobsters only part-time, or not at all are now exclusively dependent on the lobster resource. Many rural coastal towns now depend almost entirely on lobstering to support the local economy.

Clearly, coastal communities face a huge risk. Any number of factors could reduce lobster landings—disease, overfishing, an oil spill or other man-made disaster, or environmental factors such as warming water temperatures. It is likely that the lobster resource will decline at some point in the future. If this happens, lobster fishermen could be out of work with few options for transitioning to other fisheries. Because most lobster fishermen are self-employed, the Department of Labor can provide almost no information about their employment, income levels, family status and so forth. This creates a dangerous situation for coastal communities: the current high stock abundance supports thousands of fishing jobs throughout New England, yet we have little information to quantify their dependence on the lobster resource.

> **"The fundamental issue that confronts** both managers and lobstermen is this: given that the high recruitment and population levels are probably due to environmental conditions (such as higher water temperatures, decreased predation, or some other factors which we do not understand or control), is current abundance creating a false sense of security and leading us to believe that we can continue to fish at high exploitation rates?"
>
> (from Amendment 3 of the Atlantic States Marine Fisheries Management Plan for American Lobster)

The lack of socioeconomic data for the New England lobster industry makes it very difficult to prepare effectively for inevitable changes within the industry. The *New England Lobster Socioeconomic Survey* was initiated to address this lack of information about the New England lobster fishing industry and collect baseline socioeconomic data on the New England lobster industry. We hope the information collected will provide managers and the industry with baseline data on which to evaluate future policy and programs for the New England lobster fishery.

What Information was Collected

The study area for the survey encompassed the Atlantic States Marine Fisheries Commission's Lobster Conservation Management Areas 1 and 2, and that part of Area 3 fished by lobstermen from Maine, New Hampshire, Massachusetts and Rhode Island. The phone survey was administered in 2006 to a random sample of commercial lobster license holders within those states. Questions covered baseline information for the 2005 calendar year and included demographics, involvement in the lobster industry, business operations, and financial information. The Project Steering Committee was particularly interested in obtaining information on the financial vulnerability of lobstermen and their families and the amount of effort currently employed in the lobster industry.

Information Collected from Active* Lobstermen included:

Demographic Characteristics
- gender
- age
- marital status
- education/training
- number in household
- children's education/training

Involvement in the Lobster Industry
- years involved in lobstering
- years holding a lobster license
- years planning to lobster

Vessel Characteristics
- length
- horsepower
- crew size
- distance moored from home

2005 Lobstering by Quarter
- number of traps
- number of trap hauls per trip
- number of trips per week
- number of pounds per trip

Lobster Effort (*note: this term was not specifically defined for respondents)
- increased or decreased since 2004
- reasons for increase or decrease
- expectations for increase or decrease in future and reasons

Other Fishing Activities
- percent who hold other fishing licenses or permits
- type of license or permits
- percent earning income from other fisheries

Lobster Business
- gross revenue for lobster business 2005
- amount paid to sternmen in 2005
- % of revenue in 2005 that went towards fuel and oil
- % of revenue in 2005 that went towards bait
- % of revenue in 2005 that went to vessel insurance
- % of revenue that is profit after all expenses are paid

What Information was Collected

Investments and Financing of Lobster Business
- investments in lobster business (gear, boat, etc.)
- other investments
- amount and purpose of business loans
- source of financing
- plans for future investment in business

Household Income
- household income
- source of income (lobstering, other fishing, other)
- other household members who contribute to income
- source of other household members' income

Health Insurance Coverage
- insured or uninsured
- level of insurance
- source of insurance

Retirement
- plans to retire
- type of retirement assets (IRA, 401k, savings)

Comments about the Lobster Industry
- major changes seen in the lobster industry in the last 5-10 years
- major changes foreseen in the next 5-10

* For this survey active lobstermen are defined as those who landed 1000 pounds of lobster or more during 2005. A separate, shorter survey was done for those respondents who said they landed less than 1000 pounds in 2005.

Lobster Management and Data Collection in Brief

The New England Lobster Fishery is prosecuted in both state and federal waters. Each state manages the lobster fishery that occurs within its own waters (0-3 miles offshore). Federal waters (3-200 miles) are subject to federal management authority. Since 1997, the Atlantic States Marine Fisheries Commission (ASMFC) has managed the federal lobster fishery under its Interstate Fishery Management Plan for American Lobster (ISFMP). Management is conducted in seven separate Lobster Conservation Management Areas (LCMAs) four of which occur in New England (Figure 2).

Each LCMA has a Lobster Conservation Management Team (LCMT), consisting of area fishermen. Teams are encouraged to develop management recommendations that address the specific needs of their LCMA. The ASMFC Lobster Management Board considers these recommendations when pursuing the goals of the Interstate Fishery Management Plan. The ASMFC also helps states coordinate management plans to ensure comprehensive, compatible, and effective management of the US lobster resource.

Regulations differ somewhat across LCMAs and states, but the basic system of management is similar. All areas and states have limited access licenses (though they are not transferable in Maine while

they are in other states). All states have minimum size limits and prohibitions on landing female egg bearing lobsters. Maine also has a maximum size. Maine has codified a practice known as V-notching whereby egg bearing females have a notch cut in their tail when they are released. The notch may last several years and a lobsterman that captures a notched lobster even when not bearing eggs must release the lobster. Other states are now implementing this rule. This combination of effort controls and technical regulations has, to date, been successful at protecting a brood stock of lobster that has continued to provide recruits to the fishery.

Over three-quarters of New England's lobster is landed in Maine (79.8% in 2005 according to NMFS landings data). The Maine Department of Marine Resources (DMR) divides the lobster fishery into seven management zones. Within each zone, a zone council works with the Maine Lobster Advisory Council and the Commissioner of Marine Resources to enact management tailored to local conditions. Zones run from east (Zone A) to west (Zone G).

Collection of accurate and complete data is an important component of the management structure. In the lobster fishery, fisheries-dependent data is collected through catch and landings reports, port sampling, and sea sampling. The majority of data collected concerns the health and stability of the lobster resource with little socioeconomic information collected. Each state collects these data through separate programs, which are not always compatible. The ASMFC is currently working to establish comprehensive standardized data collection throughout the lobster fishery to allow data to be compared more easily throughout the region.

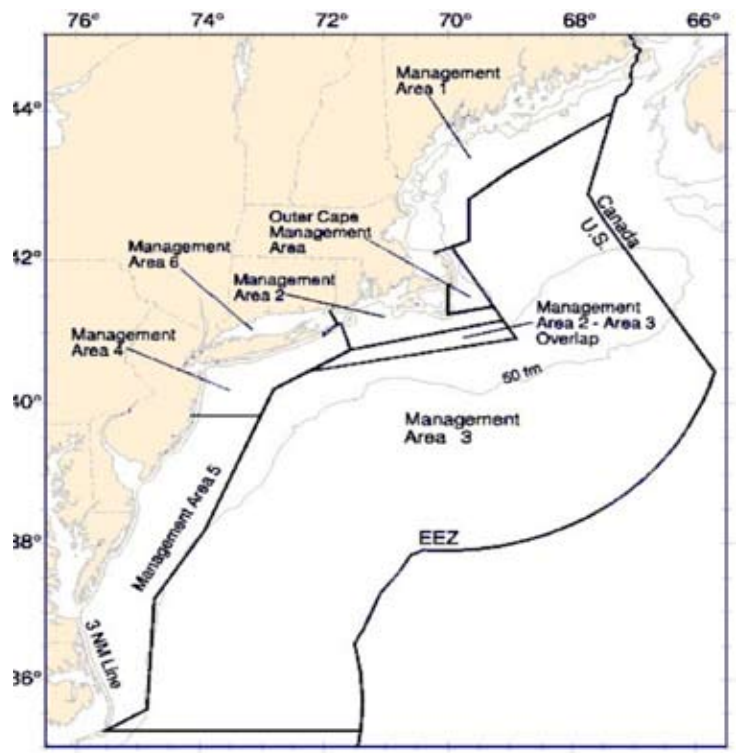


Figure 2. ASMFC Lobster Conservation Management Areas

Appendix 12

How the Survey was Conducted

The *New England Lobster Socioeconomic Survey* was based on telephone interviews conducted from March 13th, 2006 to August 29th, 2006, with 1,158 randomly selected lobstermen in New England. In 2005, there were 9701 commercially licensed lobstermen within the study area. The sampling approach relied on a stratified sampling design that examined twelve fishing areas in Maine, New Hampshire, Massachusetts, and Rhode Island, including both state and federal waters. The table on the right displays the breakdown of the 12 areas, including the federal management area, the state area as appropriate, and the total number of interviews conducted among lobstermen in that area.

In addition to stratifying by geographic area, the sample was also stratified by activity level. Activity was defined by asking whether the respondent had landed 1000 pounds of lobster or more in 2005. Further, because this research was mainly concerned with lobstermen who make a living from catching and selling lobster, respondents who were considered as not actively lobstering (landed less than 1000 lbs. of lobster in 2005) were asked a limited set of questions. The results in this summary document are focused on active commercial lobster fishermen.

The random sample of telephone numbers called was based on the most recent list of lobster license holders within each state. When a working number was called, the person listed as the lobster license holder was identified and interviewed. On average, it took six calls to make contact. The response rate was 40%, defined as the ratio of the number of completed interviews divided by the number of eligible units in the sample. The cooperation rate was 80%, which indicates 80% of those lobstermen reached by phone actually completed the survey.

Strata	LCMA	Zone	Sample size
Maine			
1	Lobster Management Area 1	Zone A	136
2	Lobster Management Area 1	Zone B	73
3	Lobster Management Area 1	Zone C	120
4	Lobster Management Area 1	Zone D	144
5	Lobster Management Area 1	Zone E	75
6	Lobster Management Area 1	Zone F	120
7	Lobster Management Area 1	Zone G	60
New Hampshire			
8	Lobster Management Area 1		59
Massachusetts			
9	Lobster Management Area 1		131
10	Lobster Management Area 2		65
Rhode Island			
11	Lobster Management Area 2		140
12	Lobster Management Area 3		33

Table 1: Number of interviews by sample strata, state, and LCMA.

How the Survey was Conducted

A note on confidence intervals:

In this survey, responses of a sample population reveal characteristics of a population as a whole. As in all surveys, the larger the sample population, the more likely it is that their responses accurately reflect characteristics of the larger group. The likelihood that survey results represent the larger population is expressed in confidence intervals, which in this report are represented by a +/- figure following numerical results, or by vertical bars extending above or below columns on charts. The confidence intervals used here are 95%, meaning there is a 95% chance that characteristics of the subject population fall within the range expressed. For instance: "49 % (+/- 4.3%) of Maine Lobstermen have outstanding business loans." This means that 49% of the Maine lobstermen surveyed have an outstanding loan on their business. Based on the number of Maine lobstermen surveyed, compared to the number of Maine lobstermen overall, there is a 95% probability that the actual percentage of all Maine lobstermen with outstanding business loans falls between 44.7% and 52.3%.

What We Learned - Key Findings of the Survey

The "Average" Active Lobsterman in New England

Lobstermen in New England are an average of 50 years old. Approximately three-quarters are married, although fewer than one in three has children living at home. Eighty percent have at least a high school diploma or G.E.D., 12% have a Bachelor's degree, and 2% hold a graduate degree.

Maine lobstermen appear less likely to have graduated high school than those in other areas. In LCMA 1 ME, 19% (+/- 3%) of lobstermen did not graduate high school. In LCMA 1 NH/MA, that number is 12% (+/- 7%), in LCMA 2 it is 9% (+/- 6%), and in LCMA 3 it is 36% (+/- 20% note that the large confidence interval is due to a small sample size).

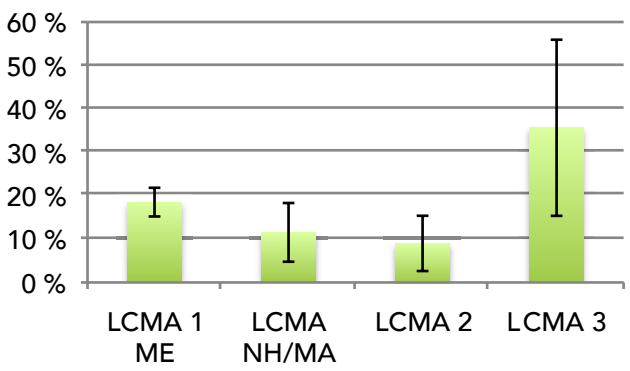


Figure 3: Did not Finish High School, by LCMA.

What We Learned - Key Findings of the Survey
The "Average" Active Lobsterman in New England

How do lobstermen compare to the general population?

According to 2005 US Census data, the percent of people in the study area 25 years and over who have not completed high school (including equivalency) ranges from a low of 10% in New Hampshire to a high of 17% in Rhode Island (Maine, 11%, Massachusetts 12 %, +/- for all states 1% or less). Because the geographic breakdowns, age ranges, and confidence intervals are not the same, (US Census uses a 90% confidence interval), it is difficult to compare the two sources. However it is interesting to note that it appears Maine lobstermen are less likely than their local counterparts to have graduated from high school, but Rhode Island lobstermen are more likely to have done so.

On average, lobstermen have held a lobster permit for 28 years. Maine lobstermen have held their licenses for slightly longer than those in other areas (although only the difference between LCMA 1 ME and LCMA 1 NH/MA is statistically significant). Most lobstermen were involved in the industry for 2-4 years before getting their own license.

Approximately 60% of respondents in LCMA 1 and 2 said they planned to lobster as long as they could or as long as needed. Lobstermen in LCMA 3 generally planned to retire somewhere between 1 and 20 years in the future.

	LCMA 1 ME		LCMA 1 NH/MA		LCMA 2		LCMA 3	
	mean	+/-	mean	+/-	mean	+/-	mean	+/-
Years in Lobstering	31	1	29	3	27	3	29	5
Years with a License	29	1	24	3	25	3	25	5

Table 2: Number of years in the lobster industry and number of years with a lobster license by LCMA.

Traps to Pounds to Dollars: What was the Scale of 2005 Lobster Operations in New England?

A Note of Precaution When Interpreting Effort Data

Each management zone has different laws concerning trap limits. Within Maine, Zone E allows a maximum of 600 traps per licensed lobster vessel. All other Maine zones have an 800 trap limit. In 2005, New Hampshire had a two-tiered approach to trap limits: all lobstermen were limited to either 1200 or 600 traps. Rhode Island and Massachusetts lobstermen were limited to 800 traps, and some lobstermen (in Rhode Island and south of Cape Cod) were limited to fewer than 800 traps, depending on their historic effort. LCMA 3 lobstermen were limited to no more than 2200 traps.

Lobster fishermen in New England are more active during 3rd and 4th quarters of the year. The relative participation rates by quarter are reasonably consistent across regions with the exception of LCMA 3. Participation is much more consistent throughout the year for LCMA 3 with 75% (+/- 17%) of lobsterman active in Quarter 1. In other areas participation rates tend to be much lower in Quarter 1 ranging from 17% to 47% for different state-zone-LCMA combinations (see table 3 on left).

For those fishermen who are active in each quarter, effort levels also tend to be higher in the 3rd and 4th quarters. For New England overall in the 3rd quarter, lobstermen had, on average, a maximum of 557 traps in the water, made four trips per week when they hauled traps, and hauled about 280 traps during each trip. In the 4th quarter, on average, lobstermen had a maximum of 550 traps in the water, made four trips per week when they hauled traps, and hauled about 225 traps during each trip.

LCMA and Zone	Quarter 1	Quarter 2	Quarter 3	Quarter 4
ME Zone A	17 % (11%-23%)	61 % (51%-71%)	95 % (90%-100%)	92 % (87%-98%)
ME Zone B	30 % (18%-42%)	82 % (71%-92%)	98 % (94%-100%)	90 % (81%-98%)
ME Zone C	27 % (18%-35%)	72 % (63%-82%)	100 % (100%-100%)	90 % (84%-96%)
ME Zone D	28 % (20%-36%)	80 % (72%-88%)	95 % (91%-100%)	92 % (86%-98%)
ME Zone E	42 % (29%-55%)	85 % (75%-95%)	95 % (89%-100%)	97 % (92%-100%)
ME Zone F	26 % (17%-34%)	69 % (59%-79%)	100 % (100%-100%)	95 % (90%-100%)
ME Zone G	47 % (29%-65%)	93 % (83%-100%)	98 % (95%-100%)	95 % (85%-100%)
NH LCMA 1	39 % (23%-55%)	82 % (69%-94%)	100 % (100%-100%)	94 % (86%-100%)
MA LCMA 1	33 % (23%-42%)	71 % (60%-82%)	99 % (98%-100%)	92 % (84%-99%)
MA LCMA 2	42 % (20%-64%)	82 % (62%-100%)	80 % (58%-100%)	67 % (44%-91%)
RI LCMA 2	42 % (30%-54%)	91 % (84%-98%)	96 % (90%-100%)	82 % (72%-92%)
Fed LCMA 3	75 % (57%-92%)	95 % (85%-100%)	95 % (85%-100%)	90 % (77%-100%)

Table 3: Percent of lobstermen surveyed who replied that they fished for lobster in each quarter of 2005 by LCMA and Maine Lobster Zone.

What We Learned - Key Findings of the Survey
The "Average" Active Lobsterman in New England

Less effort was used by lobstermen who were active in the first half of the year. On average, lobstermen had a maximum of 450 traps in the water during the 1st quarter and 480 traps in the water during the 2nd quarter. There were an average of two trips per week when they hauled traps and three trips per week in the 1st and 2nd quarters, respectively. During those trips, lobstermen hauled about 250 traps and 216 traps for each quarter.

As the table below shows, the relatively higher effort levels of active fishermen in the 3rd and 4th quarters are most reflective of what occurs throughout LCMA 1 and LCMA 2. The maximum traps used on average in LCMA 3 are more consistent throughout the year, though few trips per week occur in Quarter 1.

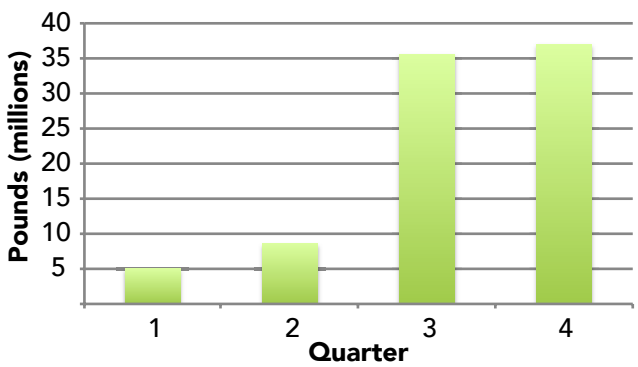
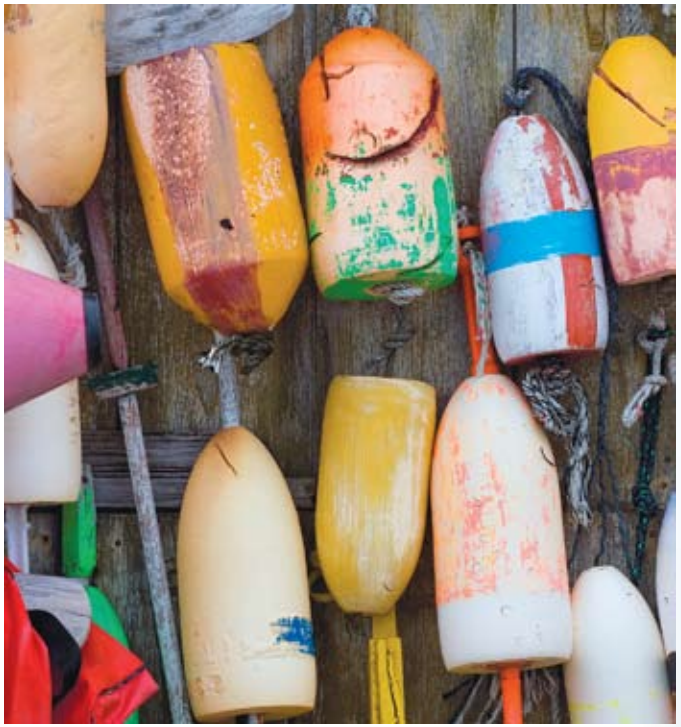


Figure 4: Lobster landings measured in pounds for New England in 2005 by quarter. Source: (http://www.st.nmfs.noaa.gov/st1/commercial/landings/annual_landings.html)

The table on the next page provides data on lobster fishing effort and landings by LCMA by quarter.

Average landings per fishermen by quarter are also higher in the 3rd and 4th quarters. In fact, the higher level of landings in these quarters is more pronounced than are the effort levels. The higher average landings in the 3rd and 4th quarters apply to LCMA 3 as well as the other areas. We note that the Table 4 shows average landings for active fishermen during those periods. Because more lobstermen are active in the last two quarters, overall landings are heavily concentrated in the 3rd and 4th quarters.



	LCMA 1 ME		LCMA 1 NH/MA		LCMA 2		LCMA 3	
	Mean	+/-	Mean	+/-	Mean	+/-	Mean	+/-
Quarter 1								
Maximum Traps	439	33	470	92	367	78	1041	294
Average Trips per Week	1.7	0.1	2.1	0.3	1.8	0.3	2.0	0.6
Average Traps Hauled per Week	232	15	247	60	196	36	939	345
Total Landed Pounds	2,980	575	3,076	2,445	1,848	836	5,618	2,937
Quarter 2						0		
Maximum Traps	485	23	436	52	401	62	1031	215
Average Trips per Week	3.4	0.1	3.4	0.3	2.8	0.3	2.5	0.9
Average Traps Hauled per Week	211	8	214	32	175	23	855	269
Total Landed Pounds	4,013	462	2,667	725	2,205	481	12,066	4,928
Quarter 3								
Maximum Traps	564	20	490	49	458	61	1055	191
Average Trips per Week	4.5	0.1	4.2	0.3	3.9	0.4	3.2	0.9
Average Traps Hauled per Week	222	8	230	25	193	24	853	272
Total Landed Pounds	11,914	3,924	5,710	1,568	5,348	1,297	25,970	9,597
Quarter 4								
Maximum Traps	555	21	501	52	448	67	1035	223
Average Trips per Week	3.9	0.1	3.8	0.3	2.7	0.3	2.4	0.8
Average Traps Hauled per Week	222	7	233	28	186	27	849	279
Total Landed Pounds	11,920	3,037	7,257	2,590	3,222	1,058	29,497	11,719

Table 4: Lobster fishing effort (measured by maximum number of traps, average trips per week, average traps hauled per trip, and total pound landed) by LCMA for each quarter of 2005.

What We Learned - Key Findings of the Survey
The "Average" Active Lobsterman in New England

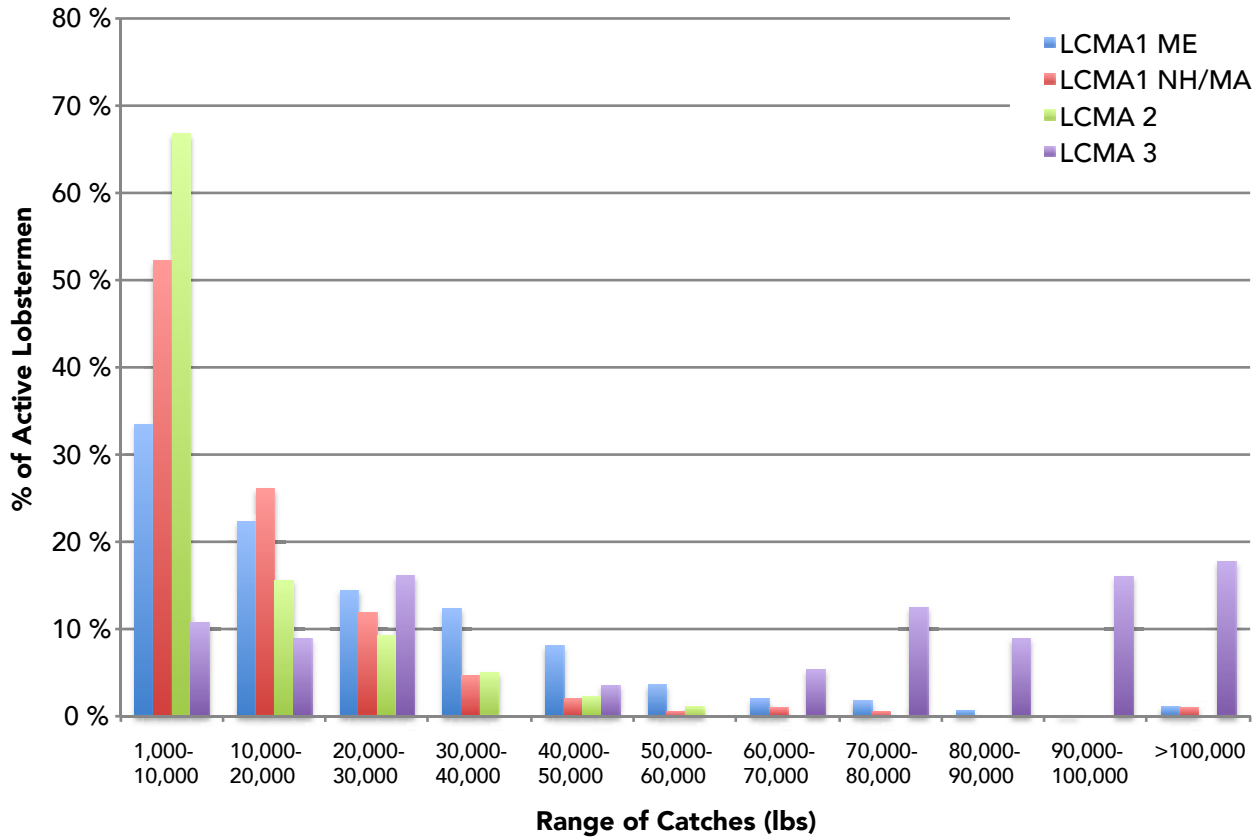


Figure 5: Distribution of average annual landings of active lobstermen for 2005 by LCMA.

The variation in landings by individuals within and between areas is striking. The chart above shows the range of average annual landings across management areas based on the survey data. While roughly 20% of lobstermen in LCMA 1 NH/MA and LCMA 2 reported landing more than 20,000 pounds annually, in Maine 44% reported doing so in 2005. Maine lobstermen are also far more likely to land more than 40,000 pounds: around 17% of Maine lobstermen land more than 40,000 pounds of lobster annually, compared to 5% of the lobstermen in LCMA 1 NH/MA, and a negligible percentage in LCMA 2. In LCMA 3, 64% of lobstermen landed more than 40,000 pounds of lobster and 18% landed more than 100,000 pounds of lobster in 2005.

Appendix 12

Effort in Maine Increases Over Time:

The Maine Department of Marine Resources estimated that the number of traps in Maine's coastal waters more than doubled between 1967 and 1997, and that the number of traps per boat had increased more than 600% over the same time period. Although this growth has slowed recently, the number of commercial trap tags sold increased roughly 13% between 1997 and 2006, with the largest increase occurring in Zones A and B (Maine DMR data). Maine traps per boat (as measured by number of commercial trap tags sold, excluding student tags, divided by the number of commercially licensed vessels) reached a peak in 1999 at 209, and stood at 194 traps per vessel in 2005.

Despite the growth in effort in Maine in recent years, there is still significant latent effort in the fishery in Maine and in other regions. As the table below shows, a significant percentage of lobsterman are "inactive", having landed less than 1000 pounds of lobster in 2005. About one quarter of licensed lobsterman caught under 1000 pounds of lobster in 2005 though the percentage of active fishermen varies greatly by area as illustrated by Table 5 on the right. Among those who did not land more than 1000 lbs. of lobster in 2005, over a quarter said they were not actively lobstering due to their own or a family member's illness. About another quarter said they had changed jobs, worked in another fishing industry, or were now working for another lobsterman. The percentage of Maine LCMA 1 and LCMA 3 lobster license holders who were inactive in 2005 was much lower than that for license holders in LCMA 1 and LCMA 2 in Massachusetts and Rhode Island.

As noted above, the average number of trap tags per boat in Maine in 2005 was 194 while each license holder is entitled to purchase 800 except in Zone E where the limit is 600 traps. Trap limits are 800 in Massachusetts and Rhode Island, either 600 or 1200 in New Hampshire and 2200 for LCMA 3. As Table 4 illustrated, active fishermen are, on average, using well under the maximum number of traps and many are not participating year-round (Table 3). This highlights the magnitude of latent effort and the potential for rapid increase in fishing capacity even with the restrictions in place on licenses and numbers of traps. It also complicates attempts to reduce effort by reducing trap limits. Increases in trap numbers by less active fisherman could offset the reductions taken by the most active fisherman.

	Yes	No
ME Zone A	89 % (84%-94%)	11 % (6%-16%)
ME Zone B	85 % (78%-92%)	15 % (9%-22%)
ME Zone C	87 % (81%92%)	14 % (8%-19%)
ME Zone D	84 % (78%-90%)	16 % (10%-22%)
ME Zone E	82 % (75%-90%)	18 % (11%-25%)
ME Zone F	80 % (73%-87%)	20 % (13%-28%)
ME Zone G	80 % (70%-89%)	20 % (11%-30%)
NH LCMA 1	30 % (18%-41%)	70 % (59%-82%)
MA LCMA 1	39 % (27%-51%)	61 % (49%-73%)
MA LCMA 2	29 % (18%-40%)	71 % (60%-83%)
RI LCMA 2	48 % (40%-57%)	52 % (43%-60%)
Fed LCMA 3	69 % (51%-86%)	31 % (14%-49%)

Table 5: Percent of respondents who landed more than 1000 pounds of lobster during the 2005 calendar year by LCMA and Maine Lobster Zone.
Note: Confidence Intervals are in parentheses.

Appendix 12

LOBSTER
TAKE NOTICE
NO
CAUTION
STORE HOURS
Mon. - Sat.
8:30 - 5:30
Sunday
CLOSED

What We Learned - Key Findings of the Survey

The "Average" Lobster Business for Active Lobstermen in New England

The average vessel size for active lobstermen was 32 feet. There were no statistically significant differences in vessel length or engine horsepower amongst LCMA 1 ME, LCMA 1 NH/MA and LCMA 2. Not surprisingly, LCMA 3 vessels are significantly larger, and have greater horsepower engines than those in any other area.

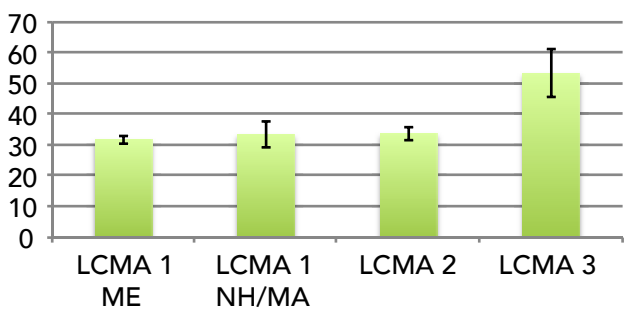


Figure 6: Average vessel length in feet for active lobstermen by LCMA.

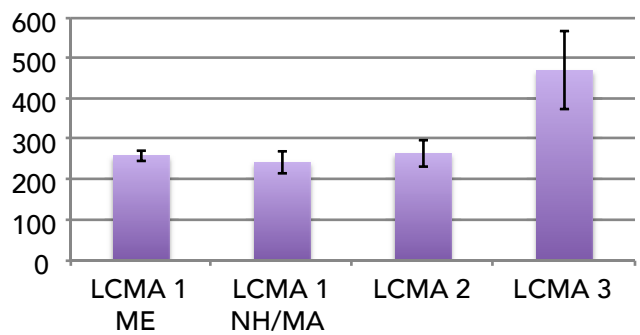


Figure 7: Average vessel horsepower for active lobstermen by LCMA.

What We Learned - Key Findings of the Survey

The "Average" Lobster Business for Active Lobstermen in New England

Although there are some lobster license holders that are making substantial revenues from lobstering, the net revenues of lobstermen after accounting for operating expenses are not high on average, even for lobstermen that fished during more than two quarters in 2005. An exception is LCMA 3. As we note below, many households depend on other income to supplement income from lobstering. Note that the net return reflects only variable expenses and does not account for capital costs such as boat payments. Recent increases in fuel prices have almost certainly further reduced net returns since 2005.

Region	Fish More than two Quarters per Year	Sterman	Gross Revenue	Net Return After Expenses	Sternman Payment % of Gross	Fuel & Bait and P&I Insurance % of Gross
LCMA 1 Maine	YES	NO	$47,854	$15,397	NA	28 %
		YES	$106,317	$35,247	20 %	25 %
	NO	NO	$27,778	$8,957	NA	29 %
		YES	$54,683	$18,812	16 %	30 %
LCMA 1 NH/MA	YES	NO	$49,368	$15,523	NA	27 %
		YES	$119,609	$35,570	26 %	33 %
	NO	NO	$22,788	$3,409	NA	29 %
		YES	$54,660	$16,021	15 %	32 %
LCMA 2	YES	NO	$44,524	$14,074	NA	28 %
		YES	$112,206	$35,979	17 %	24 %
	NO	NO	$38,562	$11,485	NA	25 %
		YES	$21,627	$7,556	NA	17 %
LCMA 3	YES	YES	$423,905	$89,357	32 %	28 %

Table 6: Lobster business revenue characteristics for 2005 by LCMA, activity level, and use of a sternman.

How are Lobster Businesses Financed?

Almost four in five active lobstermen surveyed made an investment in their business during the 2005 calendar year. Common investments included new traps (65%), other new gear (24%), and ropes and buoys (22%). Of those that made investments, roughly one fifth to one half (by area) did so to comply with state or federal regulations.

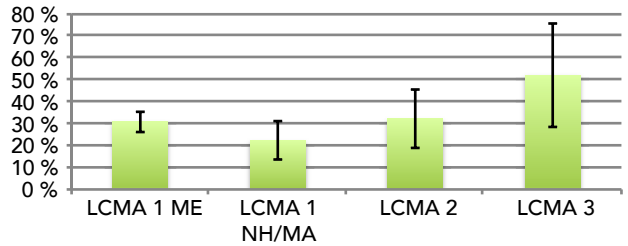


Figure 8: Percent of active lobstermen who made lobster business investments in 2005 due to fisheries regulations.

About a third of active lobstermen think they will invest more in their lobster business during the 2006 calendar year. When asked what they will invest in, 50% indicate new traps, 19% a new boat, and 17% say they will need a new engine for their boat.

In terms of financing these investments, just under half of all lobstermen have outstanding business loans. While 49 % (+/- 4%) of lobstermen in LCMA 1 ME and 58% (+/- 21%) in LCMA 3 have outstanding business loans, only 26% of those in LCMA 1 NH/MA, and 15% (+/- 8%) of LCMA 2 lobstermen have outstanding business loans.

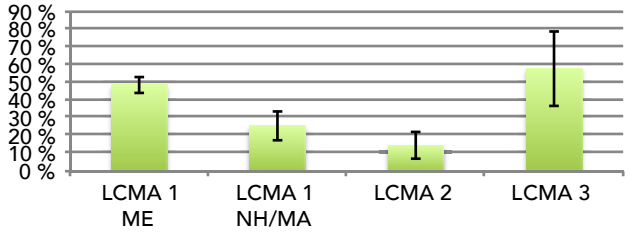


Figure 9: Percent of active lobstermen who have outstanding business loans by LCMA.

The size of the business loans varies significantly by geographic region. As might be expected, the larger loans are for LCMA 3 lobstermen with an average of $149,334. However, the small sample size makes it difficult to consider this a reliable estimate as the confidence limits give a range of +/- $90,092. Lobstermen in Maine, on average, have significantly larger loans than those lobstermen who fish in LCMA 2, with an average loan of $56,279 (+/- $7,860) in LCMA 1 ME and an average loan of $20,015 (+/- $14,017) in LCMA 2.

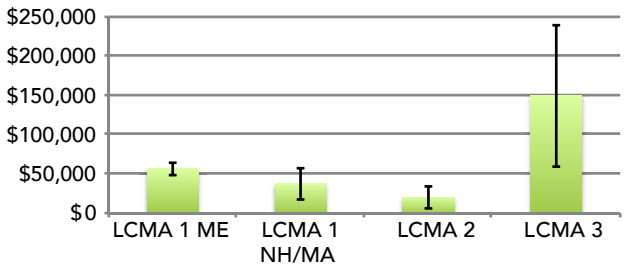


Figure 10: Average dollar amount owed on lobster business loans in 2005 by LCMA.

What We Learned - Key Findings of the Survey

The "Average" Lobster Business for Active Lobstermen in New England

	LCMA 1 ME		LCMA 1 NH/MA		LCMA 2		LCMA 3	
	Mean	+/-	Mean	+/-	Mean	+/-	Mean	+/-
Average Amount Owed on Business Loans ($)	56,279	7,860	37,278	19,945	20,015	14,017	149,334	90,092
New Boat	67.6%	5.8%	35.9%	15.5%	30 %	2 %	90 %	19 %
New/Rebuilt Engine	13.7%	4.4%	28.5%	19.0%	14 %	19 %	10 %	19 %
Gear/Equipment	21.6%	5.1%	28.1%	15.4%	19 %	22 %		
Truck/Vehicle	11.7%	3.6%	17.0%	13.7%	49 %	30 %		
Boat Repair/Overhaul	5.7%	3.0%	12.2%	10.9%			20 %	22 %

Table 8: Average dollar amount owed on lobster business loans in 2005 and purpose of loans (as a percent of total) by LCMA.

Loans are more likely to be for new boats in LCMA 3 and LCMA 1, and for a truck or other vehicle in LCMA 2.

Over half of active lobstermen use personal or family savings as a method to finance their lobster business, and about 1 in 5 use personal or family credit cards. Despite such a large proportion that uses personal means to finance their business, almost three-quarters of active lobstermen feel there are adequate sources of financing for their lobster business.

Nine percent of active lobstermen have invested profits from lobstering in another business during the past year. Among those who indicate they have invested profits from their lobstering business in another business in the past year, 39% invested in another fishing related business, and 17% invested in real estate or other property.

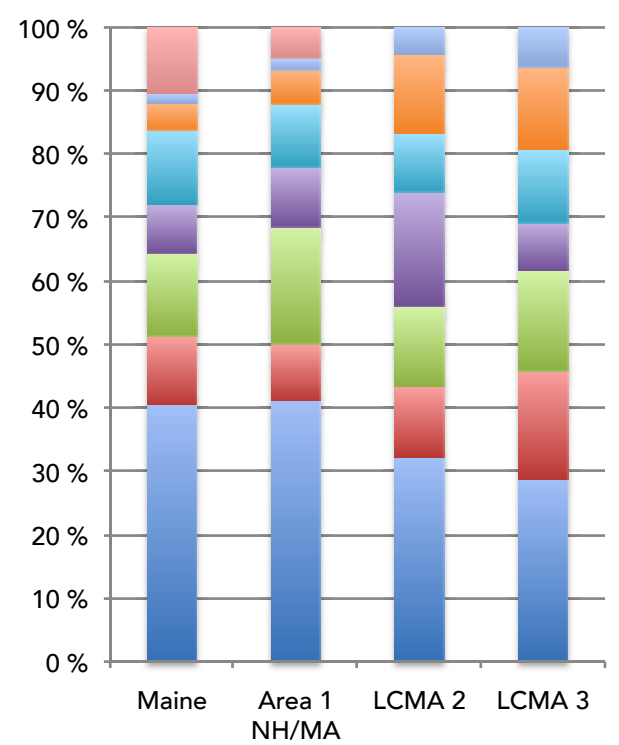


Figure 11: Sources of financing for lobster business loans as a proportion of total financing by LCMA.

Cash
Business Income
Other
Business Line of Credit
Business Credit Card
Personal Credit Card
Home Equity Loan
Personal Savings

What We Learned - Key Findings of the Survey

How Vulnerable are Lobster Fishing Families to a Potential Drop in Landings?

The average annual household income in New England for lobster fishing families surveyed ranged from a high of $87,960 (+/- $41,805) in LCMA 3 to a low of $57,385 (+/- $7,252) in LCMA 1 NH/MA. As a means of comparison, the U.S. Census reported that the *median* household income for the United States was $44,389 in 2004 (DeNavas-Walt, et al., 2005). At the state level, the U.S. Census Bureau reported income based on a 3-year average median household income for 2002-2004. Maine had the lowest 3-year average median income with $39,395, while New Hampshire had the highest 3-year average median income at $57,352. Massachusetts and Rhode Island had a 3-year average median household income of $52,354 and $46,199, respectively. Although it is difficult to compare the *average annual* household income figures from the survey to the *3-year average median* income (average income tends to be higher than median income because income distributions are skewed), it appears as though the household income of the lobster industry is at or above the *median* incomes for New England and the United States.

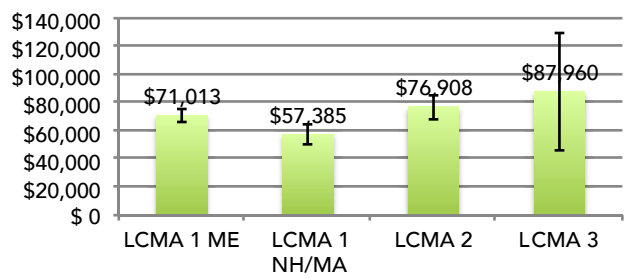


Figure 12: Average annual household income for active lobstermen in 2005 by LCMA.

What We Learned - Key Findings of the Survey

How Vulnerable are Lobster Fishing Families to a Potential Drop in Landings?

Downeast Maine: Lobstering on the Edge?

Although Maine lobstermen have an average household income of just over $70,000, this varies by zone. Household income decreases as one moves Downeast.

Downeast lobstermen appear most dependent on the lobster resource, and yet have the fewest alternate employment options should the resource decline. According to the U.S. Census Bureau, the median 2004 household income in Maine in was $41,287. In Washington County, the 2004 median household income was $29,087. However the average Maine lobsterman's household earned $66,902 (+/-$3,962), and the average lobsterman's household in Zones ABC earned $58,680. Should the lobster resource decline, it is highly unlikely that lobstermen in Maine, and Downeast in particular, could find employment providing a similar income.

Washington County, Maine, the most eastern portion of the United States, is isolated from the rest of New England and this isolation has lead to its dependence on the marine environment. It is also the poorest county in New England and the second poorest in the United States (Hall-Arber, et al.) In a comprehensive report that compiled information on New England's fishing communities and ranked their dependency on fishing, the authors determined that Downeast communities remain the most fishery-dependent communities of all the regions they surveyed in New England (see http://seagrant.mit.edu/cmss/marfin/downeast.html for greater detail). Alternative occupations were also considered in relation to fishing dependency. If fishing were to cease in Downeast Maine, there would be, on average, two and one half fishermen available to work in any single comparable occupation and the labor market would quickly be saturated.

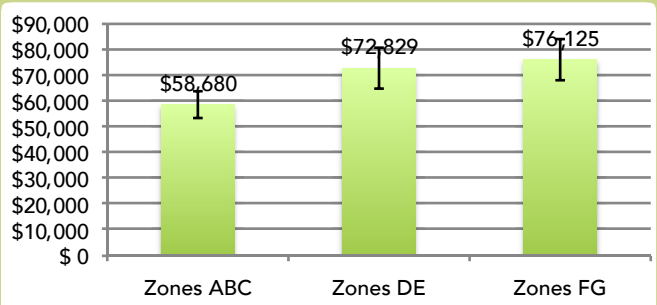


Figure 13: Average annual household income for Maine lobstermen in 2005 by areas.

Active lobstermen were the sole wage earner in a little less than half of all households surveyed. Among those households with other members who contribute to the yearly household income, nearly all are the spouses of active lobstermen. In addition to being most dependent on lobster for household income, those fishing in LCMA 1 also derive a lower percent of overall income from another household member. Although 28% of household income in LCMA 3 comes from another member of the household, in LCMA 1 ME only 16% of household income comes from another household member.

Lobster provides an average of 68% (+/- 3%) of household income in LCMA 1 ME, higher than in any other area.

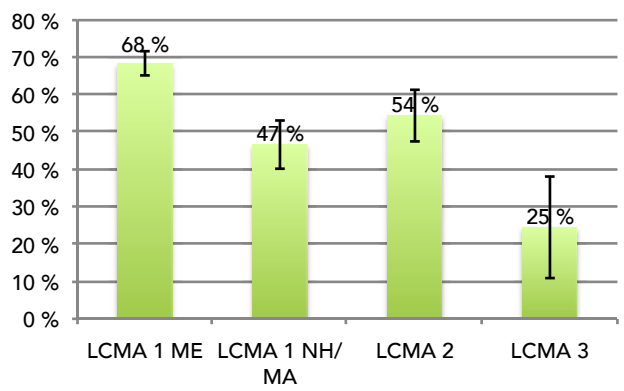


Figure 14: Percent of household income earned from lobster fishing in 2005 by LCMA.

Are there other fishing opportunities?

Across New England, about four in ten lobstermen of those surveyed hold other fishing permits. The most common permits are those for scallop dredging, shrimping, and "commercial fishing". Lobstermen in LCMA 1 (both ME and NH/MA) are less likely than those in LCMA 2 and LCMA 3 to hold other fishing permits.

Although more than a third of all lobstermen in the study area hold other fishing permits, less than a fifth of all lobstermen earned income from these permits in 2005. Again, lobstermen in LCMA 1 appear less likely to have earned income from other fisheries than those in LCMA 2 or LCMA 3. However, overlapping confidence intervals render comparisons between areas statistically insignificant.

What other job skills and/or training do New England lobstermen have?

Roughly two-thirds of lobstermen possess skills or training in fields other than lobstering. Of those with skills or training in other fields, 40% have skills as carpenters, tradesmen, or mechanics, while another 25% have skills in other types of commercial fishing, boat building, and maintenance.

A little over one-third of active lobstermen report they hold a degree or certification for a specific job, with over half of those saying that the degree or certification

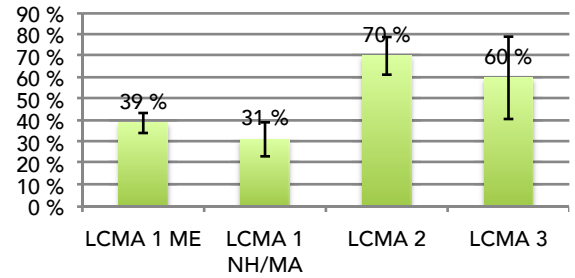


Figure 15: Percent of active lobstermen with other fishing permits in 2005 by LCMA.

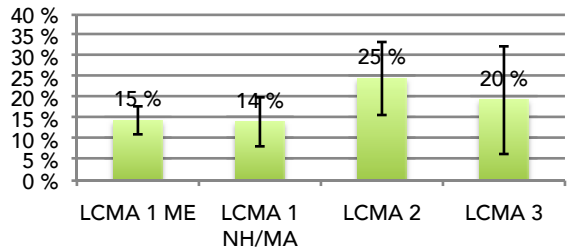


Figure 16: Percent of active lobster fishermen who earned income in 2005 from other fisheries.

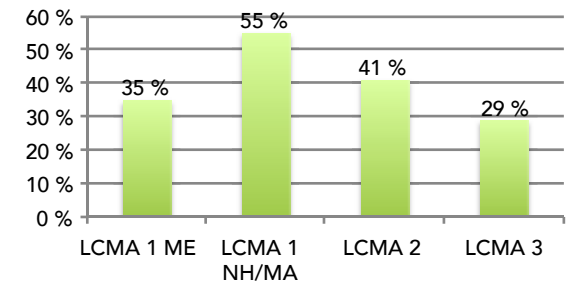


Figure 17: Percent of active lobstermen with some training in another field.

is a technical or vocational degree. Slightly more than 10 percent of those with degrees or certifications have a Bachelor's degree or a Captain's License/Marine Specific Degree. Only nine percent of active lobstermen who have a degree or certification report that they received federal assistance to obtain this training.

One in ten active lobstermen reports having received training on how to run a business. Among those active lobstermen who have not already received business training, almost half of lobstermen surveyed say they would **not** take advantage of business training if it were made available.

Do New England lobstermen have plans for retirement?

Maine lobstermen who fish in LCMA 1 are less likely than any other group to have retirement benefits: 70% of respondents in LCMA 3 said they or someone in their household has retirement benefits, compared with 51% of Maine lobstermen in LCMA 1.

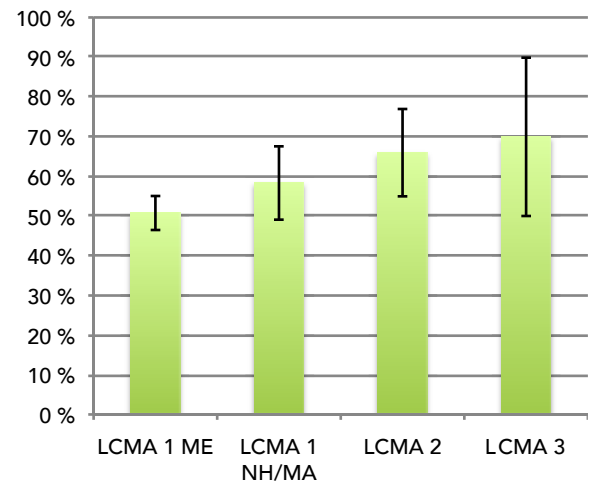


Figure 18: Percent of active lobstermen with retirement plans by LCMA.

Lobstermen Compared with Other Self-Employed Americans

In 2006, the National Association for the Self Employed conducted a survey of 3031 self-employed individuals that showed 66% were saving for retirement. This suggests that Maine lobstermen lag behind other self-employed individuals in terms of retirement planning. At 58%, LCMA 1 lobstermen in New Hampshire and Massachusetts are also behind, although lobstermen in LCMA 2 (66%) and LCMA 3 (70%) are on par with the national average.

More lobstermen in LCMA 1 than anywhere else plan to "never retire". Although only 4% of lobstermen in LCMA 3 and 1% LCMA 2 plan not to retire, in LCMA 1, 9% of Maine lobstermen and 14% of MA and NH lobstermen plan to continue working indefinitely.

Do lobstermen and their families have health coverage?

Among active lobstermen, almost a quarter have **no** insurance for anyone in their household. By contrast, 84.3 percent of the US population had health insurance coverage in 2004, with 15.7% of the population without health insurance. And in New England, the percentage of people without health insurance using a 3-year average for 2002-2004 was approximately 10.6 percent, well below the rate for the lobstermen surveyed (DeNavas-Walt, et al., 2005).

Among those lobstermen surveyed that reported they had health insurance, about a third get their health insurance through the spouse's place of employment; 25% indicate their health care coverage is through a state or federal program, like Medicare or Medicaid, and another quarter indicate that health insurance costs are paid out of pocket.

Among active lobstermen who have health insurance coverage for someone in the household, eighty-five percent report this insurance is full coverage while about 15% say the insurance is catastrophic only.

Respondents were asked to describe their health insurance coverage, and were classified as "insured" (full coverage), "underinsured" (catastrophic coverage only) or "uninsured" (no coverage). Approximately 25% (+/- 3.8%) of lobstermen from Maine in LCMA 1 are underinsured while only 6.9% (5.6%) of New Hampshire and Massachusetts residents fishing in LCMA 1 reported that they were underinsured.

Traditional Fishing Families: Are younger generations preparing to enter the lobster fishery?

All lobstermen with children were asked about their plans for their childrens' future. Thirty percent of respondents had no plans because their children were grown and "on their own". Twenty percent said they are saving for their child's planned college education, but offered no specific details on their type of savings plan. More than 10% of respondents said they had no plans for their childrens' education or training.

Of those lobstermen with children, roughly half said their children were either currently involved in or intend to make a career in the lobster industry. Mainers were significantly more likely to have children who are involved in or intend to enter the lobster fishery.

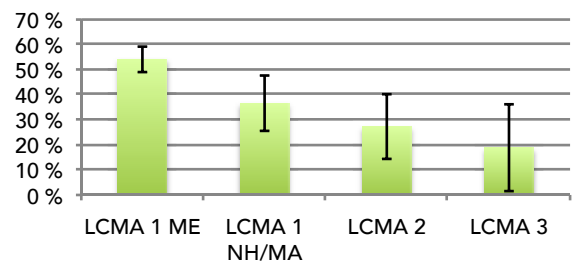


Figure 19: Percent of lobstermen with children who are in the lobster fishery or plan to enter the lobster fishery by LCMA.

Summary and Conclusions

It is difficult to make generalizations about the New England Lobster Fishery. Characteristics of the population vary according to geographic area, whether lobstermen fish seasonally or year-round, and a number of other distinctions. The upsurge in landings that occurred in the 1990's may have increased participation in the lobster fishery. However, the average age of New England lobstermen (roughly 50 years old) suggests that most lobstermen have arrived at their current position after a long history in the lobster fishery (an average of 30 years).

Despite the increase in effort in Maine in recent years, substantial latent effort still exists throughout New England. Increases in effort could put more pressure on the resource and potentially reduce profitability for existing full-time fishermen. Attempts to reduce effort by reducing trap limits would impact only the most active fishermen and could, by increasing catch per trap, create incentives for activation of latent capacity.

Although there are some lobster license holders that are making substantial revenues from lobstering, the net incomes of lobstermen after accounting for operating expenses are not high, on average, even for lobstermen that fished during more than two quarters in 2005. Recent increases in fuel cost will have further eroded profitability.

Lobstermen lag behind others in the region in terms of percentage of health insurance coverage. However, they are on par with other self-employed individuals when comparing retirement planning. One area of concern is that over half of active lobstermen use personal or family savings as a method to finance their lobster business, and about 1 in 5 use personal or family credit cards.

While the active lobsterman who participated in this survey had an average household income that was above the 3-year median for most of the country, that income was based primarily on lobster landings. The families of New England lobstermen, particularly those in northern New England, are dependent on the continued health of the lobster fishery to sustain the majority of their household income. This is especially true in Downeast Maine where there are fewer options for comparably profitable occupations. These findings are unlikely to surprise those familiar with the New England lobster fishery. The data on the socioeconomic health of the lobster fishery presented by this report provides a critical baseline against which we can check the pulse of the lobster industry over time.

Appendix 12

Appendix

Inactive Lobstermen

Demographic Characteristics

The average age of the inactive lobstermen surveyed is 53. About 85% live in households with 1 or more other people, with about a third of those living in households with children under the age of 18. Among inactive lobstermen, eight in ten have at least a high school diploma or G.E.D., 14% have a Bachelor's degree, and 8% hold a graduate degree.

Lobstering in 2000-2004

Only about two in ten inactive lobstermen in 2005 landed more than 1000 pounds of lobster in any year from 2000 to 2004. The main reasons they did not actively use their lobster permit in 2000 through 2004 were that they were lobstering part-time only, had another job or occupation, were not lobstering due to health reasons, or were fishing for personal use or recreation only.

Involvement in the Lobster Industry

On average, most inactive lobstermen were involved in the lobster industry an average of 26 years and had held a commercial lobster license or permit for 22 years.

Among inactive lobstermen, over half plan to increase their lobstering activity in the future; furthermore, almost half of those who plan to increase their lobstering in the future expect it to become the primary source of income.

Among inactive lobstermen, one quarter indicate that their children are involved in or intend to lobster as a career.

Other Fishing Activities

Four in ten inactive lobstermen hold other state fishing licenses or permits. The most common permits among inactive lobstermen include state licenses or permits for Striped Bass, Multi-species permits, and Commercial Fishing. Among inactive lobstermen who hold federal fishing permits, 20% hold a federal permit for American Lobster, 18% have a federal Northeast Multi-species permit, and 16% hold a federal permit for Monkfish.

About 1 in 5 inactive lobstermen earned income from other fishing activities. Among those who earned income from other fishing, 20% earned income from Striped Bass, while 13% earned income from Commercial Fishing, and 10% from Sea Bass.

Household Income

Among inactive lobstermen, the average household income reported is $56,495. Among those who earned income from other fishing activities, 39% of household income, on average, came from these other fishing activities in 2005.

References

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Cheryl Hill Lee, U.S. Census Bureau, Current Population Reports, P60-229, Income, Poverty, and Health Insurance Coverage in the United States: 2004, U.S. Government Printing Office, Washington, DC, 2005

Hall-Arber, Madeleine, Chris Dyer, John Poggie, James McNally, and Renee Gagne, New England's Fishing Communities, data? Found at http://seagrant.mit.edu/cmss/marfin

Appendix 12

Appendix 13 LCMA 2 Trap Tag Data by State 2004-2012

State	Fishing Year	# Vessels Elected LCMA 2	Active Vessels (bought tags)	# Trap Tags Purchased
MA	**2004**	204	65	42,115
	2005	191	55	36,214
	2006	187	45	28,530
	2007	176	51	29,071
	2008	172	70	43,658
	2009	157	50	27,006
	2010	150	48	24,745
	2011	130	46	23,556
	2012	115	46	22,667
	% Change 2004-2012	-43.6%	-29.2%	-46.2%
RI	**2004**	201	134	104,630
	2005	193	123	92,912
	2006	188	99	78,719
	2007	169	112	79,570
	2008	159	113	81,691
	2009	159	110	80,639
	2010	159	107	80,602
	2011	143	97	69,034
	2012	136	91	67,351
	% Change 2004-2012	-32.3%	-32.1%	-35.6%
CT	**2004**	16	3	2,150
	2005	16	4	2,370
	2006	17	2	1,760
	2007	16	1	880
	2008	18	3	2,640
	2009	18	2	1,440
	2010	14	5	3,814
	2011	14	2	1,600
	2012	15	2	1,700
	% Change 2004-2012	-6.3%	-33.3%	-20.9%

Appendix 13 LCMA 2 Trap Tag Data by State 2004-2012

State	Fishing Year	# Vessels Elected LCMA 2	Active Vessels (bought tags)	# Trap Tags Purchased
NY	**2004**	43	10	8,720
	2005	42	9	7,380
	2006	39	9	6,980
	2007	42	7	5,250
	2008	35	9	6,974
	2009	35	6	4,695
	2010	33	8	4,767
	2011	28	7	3,955
	2012	26	8	5,388
	% Change 2004-2012	-39.5%	-20.0%	-38.2%

Appendix 13 LCMA 3 Trap Tag Data by State 2004-2012

State	Fishing Year	# Vessels Elected LCMA 3	Active Vessels (bought tags)	# Trap Tags Purchased
MA	**2004**	43	43	56,758
	2005	34	29	42,070
	2006	32	30	41,770
	2007	34	29	39,650
	2008	39	24	34,895
	2009	38	23	35,067
	2010	36	24	34,581
	2011	33	24	33,746
	2012	23	23	34,115
	% Change 2004-2012	-46.5%	-46.5%	-39.9%
RI	**2004**	43	50	73,711
	2005	39	35	58,932
	2006	39	26	46,855
	2007	39	30	51,822
	2008	30	30	50,944
	2009	33	27	43,664
	2010	39	26	43,309
	2011	33	25	39,557
	2012	25	25	41,364
	% Change 2004-2012	-41.9%	-50.0%	-43.9%

Appendix 13 LCMA 3 Trap Tag Data by State 2004-2012

State	Fishing Year	# Vessels Elected LCMA 3	Active Vessels (bought tags)	# Trap Tags Purchased
NH	**2004**	13	1	880
	2005	12	11	19,859
	2006	10	10	17,597
	2007	10	9	15,300
	2008	10	10	16,156
	2009	10	10	15,754
	2010	10	10	15,359
	2011	10	9	14,083
	2012	11	11	16,792
	% Change 2004-2012	-15.4%	1000.0%	1808.2%

Appendix 13 OCC LCMA Trap Tag Data by State 2004-2012

	Fishing Year	# Vessels Elected OCC LCMA	Active Vessels (bought tags)	# Trap Tags Purchased
MA	2004	155	35	22,237
	2005	137	1	845
	2006	133	14	12,444
	2007	131	26	12,880
	2008	124	38	25,810
	2009	108	24	14,192
	2010	108	22	11,389
	2011	90	23	13,061
	2012	85	21	11,732
	% Change 2004-2012	-45.2%	-40.0%	-47.2%
RI	2004	27	4	3,260
	2005	26	8	5,450
	2006	22	3	2,560
	2007	20	9	6,445
	2008	20	8	7,394
	2009	19	9	6,951
	2010	20	3	2,452
	2011	17	0	0
	2012	15	1	772
	% Change 2004-2012	-44.4%	-75.0%	-76.3%
NH	2004	2	0	0
	2005	2	0	0
	2006	1	0	0
	2007	3	0	0
	2008	0	0	0
	2009	0	0	0
	2010	3	0	0
	2011	2	0	0
	2012	2	0	0
	% Change 2004-2012	0.0%	0.0%	0.0%

Appendix 14

Reducing Trap Effort in the Lobster Conservation Management Area 2 Fishery through an Effort Control Plan

Comprehensive Status Report
(May 2006 through August 31, 2008)

by
Daniel J. McKiernan, Deputy Director &
Melanie N. Griffin, Fisheries Management Specialist

Massachusetts Division of Marine Fisheries
251 Causeway Street, Suite 400
Boston, MA 02114

Appendix 14

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY……..….3.

II. BACKGROUND…….....4.

III. PLAN SPECIFICS……4.

IV. PLAN ENACTMENT AND ADMINISTRATION……5.

V. RESULTS OF THE LCMA 2 LOBSTER TRAP EFFORT CONTROL PLAN…….5.

VI. CONCLUSION……..8.

VII. APPENDICES

- **A. DETERMINATION OF INDIVIDUAL TRAP ALLOCATIONS…….9.**
- **B. DETAILS OF 2006 – 2008 TRAP REDUCTIONS……..10.**
- **C. RELEVANT REGULATIONS – 322 CMR…….13.**

Appendix 14

I. EXECUTIVE SUMMARY

In the spring of 2006, *MarineFisheries* notified eligible commercial lobster permit holders of Initial Trap Allocations for use in Lobster Conservation Management Area 2 (LCMA 2) beginning January 1, 2007. This LCMA 2 Effort Control Plan was enacted as part of a multi-state effort control program approved in compliance with Addenda VII and IX to the Interstate Fishery Management Plan for American Lobster and after approval of the Marine Fisheries Advisory Commission. The plan seeks to cap effort (traps fished) at recent levels in response to declining stock conditions.

Figure 1. Map of LCMA 2 and LCMA2/3 overlap.

The plan features an Individual Trap Allocation for each fisherman that is unique and reflective of their fishing history during 2001-2003. In the summer of 2006, *MarineFisheries* assigned a total of 49,769 traps (includes successful appeals of Initial Trap Allocations) to 300 permit holders, of which 139 permit holders qualified for zero traps. *MarineFisheries* qualified 161 permit holders to fish traps in LCMA 2. Initial Trap Allocations (>0) assigned by *MarineFisheries* ranged from 7 – 800 traps. The average non-zero Initial Trap Allocation equaled 309 traps and the median Initial Trap Allocation equaled 250 traps. Seventeen permit holders qualified for an 800-trap allocation.

As of July 31, 2008, 148 permit holders held trap allocations ranging from 7 – 800 traps, sixteen of whom qualified for an 800-trap allocation. The average and median had increased to 335 and 285 traps, respectively. In 2007, traps reported fished in LCMA 2 totaled 35,337 – a 20% reduction from a baseline of 44,361 traps reported fished in 2004 (see Addendum VII). The LMCA 2 permit population (those with an allocation from 0-800) has declined by 16% from 2004 (306 permit holders) to 2007 (258 permit holders). The Commonwealth's LCMA 2 fishery continues to hold latent effort that has been reduced annually through passive reductions from 2006-2008 (Table 1). Future reduction of effort, if warranted, may require active reductions.

Table 1. Summary of permit holders and trap allocations in LCMA 2 during 2006-2008.

	2004	2006[1]	2007	2008	% change
# of permit holders with trap allocation = 0	N/A	139	107	106	**- 43%**
# of permit holders with trap allocation >0	N/A	169	151	148	**23%**
# of permit holders with trap allocation = 800	N/A	17	17	16	
Total traps allocated	244,800[2]	49,769	49,727	49,548	**- 80%**
Total traps fished	44,361	N/A	35,337	N/A	**- 20%**
Trap allocation range	N/A	7- 800	7 – 800	7 – 800	
Median non-zero allocation	N/A	250	252	285	**14%**
Average non-zero allocation	N/A	309	329	335	**8%**

II. BACKGROUND

On May 1, 2006 the Division of Marine Fisheries (MarineFisheries) notified Massachusetts Coastal and Offshore Lobster Permit holders of their Initial Trap Allocations in LCMA 2.

[1] Information is based on snapshot of LCMA 2 population (permits and traps) after notifying permit holders of Initial Trap Allocations they would be eligible for in 2007 and finalizing any appeals.
[2] Based on maximum limit of 800 traps per permit holder.

MarineFisheries, with approval of the Marine Fisheries Advisory Commission assigned trap allocations to eligible commercial lobster trap fishermen in Area 2 as part of the effort control plan contained in Addendum VII to the interstate plan (approved by ASMFC in November of 2005). Note that recreational lobster fishermen, seasonal (student) lobster permit holders and non-trap fishermen are not affected by this plan.

The LCMA 2 plan was the subject of numerous industry meetings and endorsement by the LCMA 2 Lobster Conservation Management Team. Its structure is similar to the Outer Cape Cod Effort Control Plan enacted by *MarineFisheries* in 2003; the plan features an Individual Trap Allocation for each fisherman that is unique and reflective of their fishing history during 2001-2003. Trap allocations are transferable among fishermen, but the overall number of allocated traps is constrained to not increase under state oversight. A 10% trap tax is levied on all permit and trap allocation transfers, consistent with Addendum IX.

III. PLAN SPECIFICS

The main aspects of *MarineFisheries'* plan included:

- Eligibility criteria based on verifiable landings of lobster caught by traps from LCMA 2 in any one year from 2001 – 2003

- Trap Allocations assigned based on maximum traps fished and landings (in lbs.) during 2001, 2002, and 2003 – either the "predicted" number of traps for that level of poundage or the number of traps reported fished – whichever was lower. Among the three years, each permit holder was given the highest value as an initial trap allocation. Addendum VII did allow for medical appeals, for which MarineFisheries allowed any permit holder who had no documented fishing performance due to documented medically-based inability or military service to appeal for an Initial Trap Allocation based on their 1999 and 2000 fishing performance in LCMA 2).

  In 2007, *MarineFisheries* enacted regulations that allow state permit holders to qualify for trap allocations in Outer Cape Cod and LCMA 2 based on historical landings of lobster caught by SCUBA gear.[3]

- Transfer programs that enable permits and/or trap allocations to be transferred. Trap allocations may not be transferred out of LCMA 2, must be transferred in quantities of 50 or more traps, and every transaction shall be assessed a 10% reduction in trap allocation. *MarineFisheries* must receive applications for trap transfers by November 30 of the previous fishing year.

IV. LCMA 2 EFFORT CONTROL PLAN ENACTMENT & ADMINISTRATION

The LCMA 2 Effort Control Plan affects all Massachusetts commercial lobster permit holders whether fishing took place in state and/or federal waters. To be eligible to receive a trap allocation, a permit holder had to have fished in LCMA 2 in at least one year from 2001 - 2003.

[3] No LCMA 2 trap allocations were issued based on historical harvest of lobsters by SCUBA. This exemption has only been utilized in Outer Cape Cod LCMA (see "Reducing Trap Effort in the Outer Cape Cod Lobster Conservation Management Area Fishery through an Effort Control Plan – Comprehensive Status Report (December 2003 - July 2008)".

MarineFisheries sent eligible lobster permit holders letters, based on DMF's own analysis of DMF's annual re-call log data, indicating their initial trap allocation. Initial Trap Allocations were assigned based on maximum Effective Traps Fished in any one year during 2001 – 2003.

Effective Traps Fished is the lower value between actual traps fished in any one year as reported on annual catch reports submitted to *MarineFisheries* and a "predicted" number of traps for the level of reported pounds for a given year. The value for a typical number of traps was calculated based on Addendum XII's depiction of traps fished and pounds landed for LCMA 2 and that relationship is depicted in Figure 2 of 322 CMR 6.13 (see attached). This relationship is an aggregation of all the individual values for traps fished versus pounds landed for lobster fishermen with landings in at least one LCMA 2 statistical area during the years 2001 - 2003.

Permit holders were then eligible to appeal initial trap allocations based on 1) technical data errors and/or miscalculations & 2) medical appeals. As part of the ASMFC-approved effort control plan in LCMA 2, DMF allowed permit holders who had no documented fishing performance due to documented medically-based inability or military service to appeal for an Initial Trap allocation based on their 1999 and 2000 fishing performance in LCMA 2. Note, this did not allow for medical appeal of minimal or reduced fishing performance.

Each state with LCMA 2 fishermen was expected to enact regulations to implement the plan prior to the 2007 fishing year beginning on January 1, 2007.

V. RESULTS OF THE LCMA 2 LOBSTER TRAP EFFORT CONTROL PLAN

In the summer of 2006, *MarineFisheries* assigned a total of 49,769 traps (includes successful appeals of Initial Trap Allocations) to 300 permit holders, of which 139 permit holders qualified for zero traps. Permit holders are categorized as state-only, dual or federal-only.[4] Those who received a zero Initial Trap Allocation may retain their commercial lobster permit endorsed for LCMA 2; however, they are unable to fish their permit with traps until they receive a trap allocation through transfer from another LCMA 2 permit holder.

During the qualification year (2006), twenty-six permit holders appealed their Initial Trap Allocation. Two appeals resulted in increased allocations (based on data errors). Additionally, a dual permit holder was allowed to combine the Initial Trap Allocations authorized for their coastal and offshore lobster permits onto their coastal lobster permit.
Sixteen permits were not renewed in 2006[5] or no longer were endorsed for LCMA 2; these entities thus are no longer a part of the population eligible to fish traps in LCMA 2.

Initial Trap Allocations (>0) assigned by *MarineFisheries* in 2006 ranged from 7 – 800 traps. A total of 17 permit holders qualified for an 800-trap allocation. Of the 49,769 traps allocated, 20,462 were allocated to state-only permit holders, 26,875 were allocated to dual permit holders

[4] State-only permit holders possess a coastal lobster permit issued by the Commonwealth but no federal lobster permit. Dual permit holders possess a coastal lobster permit issued by the Commonwealth in addition to a federal lobster permit. Federal-only permit holders possess an offshore lobster permit issued by the Commonwealth in addition to a federal lobster permit. Coastal Lobster Permit allows the taking, landing and sale of lobsters (to a licensed dealer) harvested from within the coastal waters of the Commonwealth. Offshore Lobster Permit allows the landing and sale of lobsters (to a licensed dealer) taken outside of the coastal waters of the commonwealth only; pursuant to a federal lobster permit.

[5] Initial Trap Allocations for LCMA 2 were sent to permit holders in June of 2006. The permit population included those who had not yet renewed in 2006, since they still had six months to renew. There are a handful of permits that never were renewed in 2006 and thus any Initial Trap Allocations were eliminated along with the permit.

and 2,432[6] were allocated to federal permit holders. The average non-zero Initial Trap Allocation equaled 309 traps and the median equaled 250 traps.

Eighteen permits were not renewed for 2007; one of the permits not renewed in 2007 had had its Initial Trap Allocation revoked (-800 traps) upon *MarineFisheries* discovering that the federal permit had been split from the state lobster permit and transferred with a LCMA 3 trap allocation. Two permit holders were added to the Commonwealth's LCMA 2 population during 2007, one as a result of a federal permit transfer from Connecticut, the other after a dual permit holder with a LCMA 3 trap allocation appealed for and was granted a LCMA 2 trap allocation upon giving up their LCMA 3 designation.[7] Total traps reduced equaled 17 (Table 1).

Tables 2 & 3 summarize permit and trap transactions that occurred in 2006, 2007 and 2008, respectively (for transaction-specific details see Appendix C). Note that trap reductions attributed to transfer of permits are attributed to the year in which the permit transfer was approved. Because applications for trap transfers are accepted only during a two month period at the end of each year, trap reductions attributed solely to transfer of traps are attributed to the next calendar year (i.e. trap transfer allocations submitted during the 2007 trap transfer request period became effective January 1, 2008).

Table 1, Figure 2 and Table 4 summarize the population of permit holders and distribution of trap allocations within that population from 2006 – 2008.

As of July 31, 2008, 148 permit holders held trap allocations (>0) that still range from 7 – 800 traps. Of the 49,584 traps allocated, 17,322 were allocated to state-only permit holders, 28,156 were allocated to dual permit holders and 4,106[8] were allocated to federal permit holders. Sixteen permit holders qualify for an 800-trap allocation. The average and median (>0) had increased to 335 and 285 traps, respectively.

At the request of NMFS, trap allocation transfers involving federal permit holders (e.g., federal-only and dual permit holders) have not been allowed since July 1, 2008. *MarineFisheries* awaits the results of Addendum XII (and possible NMFS rulemaking) before inter-jurisdictional trap allocation transfers resume.

Table 2. Summary of LCMA 2 trap transactions from June 2006 through July 2008.

2006 Trap Reduction Results	
Trap reduction count	Reason for trap reduction and # of transactions
25	16 permits not renewed in 2006
25	**= Total trap reduction achieved prior to first year of Plan**
2007 Trap Transaction Results	
Change in Trap count	Reason for trap reduction and # of transactions
- 449	17 permits not renewed in 2007

[6] This includes 71 traps allocated to permit holders for whom we only have a record of a state offshore permit (i.e., lack federal permit information); however, the presumption is that they are federal-only.

[7] This federal category permit holder had their state-issued offshore permit re-issued for LCMA 2 after qualifying through history conducted in the LCMA 2/3 overlap under authorization of their state and federal permits endorsed for LCMA 3.

[8] This includes 70 traps allocated to a permit holder for whom we only have a record of a state offshore permit (i.e., lack federal permit information); however, the presumption is that they are federal-only.

- 800	One trap allocation revoked and associated permit was not renewed in any area in 2007
+ 1,520	Two permit holders approved for LCMA 2 allocations based upon a federal permit transfer and appeal by LCMA 3 permit holder, respectively.
- 131	Six permit transfers within LCMA
- 157	Ten trap allocation transfers (four permits retired)
17	**= Total trap reduction achieved in first year of Plan**

2008 Trap Reduction Results

Trap reduction count	Reason for trap reduction and # of transactions
890	Six permits have yet to renew as of July 31, 2008 or were surrendered.
80	Two permit transfers in LCMA 2
43	(Five trap allocation transfers (one permit retired)
1,012	**= Total trap reduction achieved in second year of Plan**

Table 3. Summary of trap and permit reductions through transfers and revocations in LCMA 2 during 2007-2008.

	2006	**2007**	**2008***	**Total**
# of permits surrendered or revoked	16	18	6	**40**
# of traps reduced via surrender or revocation	25	1,249	890	**2,164**
# of permit transfers	N/A	6	2	**8**
# of traps reduced via permit transfers	N/A	131	80	**211**
# of trap allocation transfers	N/A	10	5	**15**
# of traps reduced via trap transfers	N/A	157	43	**200**

* #s associated with 2008 are not final until end of year, except for trap transfers, which are finalized by November 30th of the preceding year (2007).

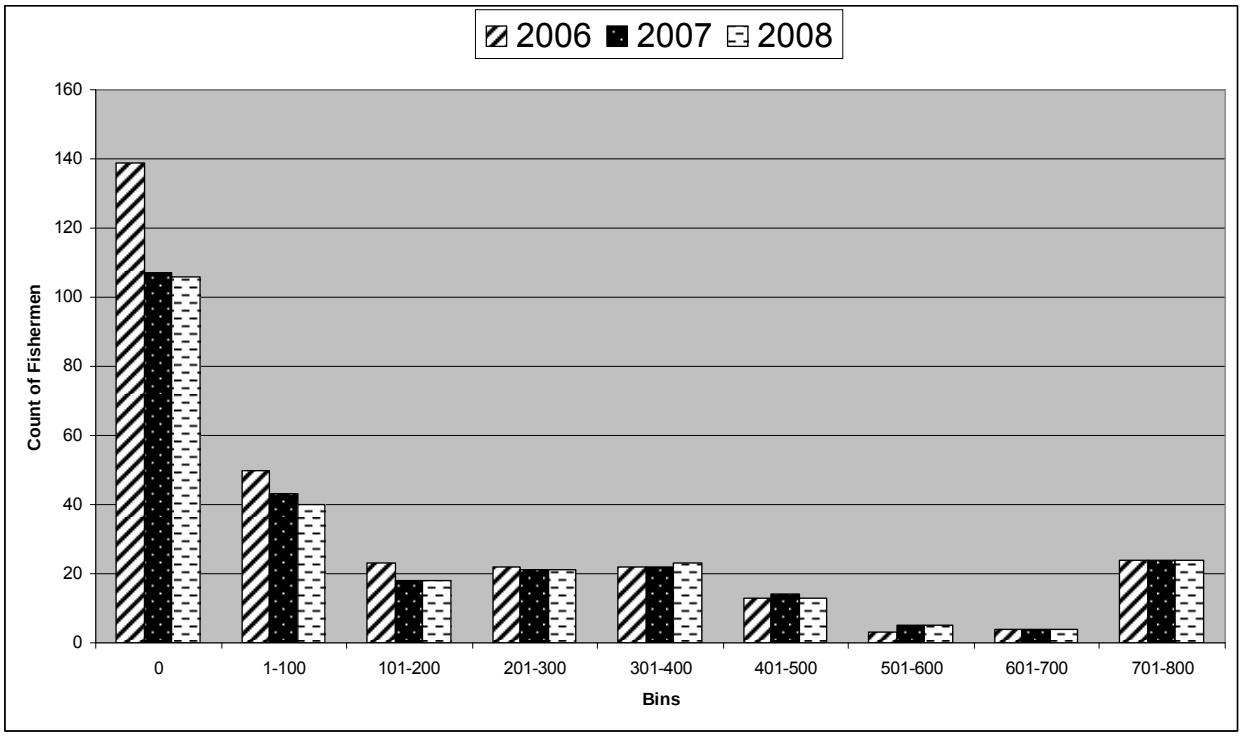


Figure 2. Trend in frequency of LCMA 2 trap allocations in 100-trap increments during 2006 (initiation year), 2007 & 2008 (n =300 in 2006, n = 258 in 2007, n = 254 in 2008).

Table 4. Net change in frequency of LCMA 2 trap allocations (in 100-trap increments) from 2006 to 2008.

Trap Interval	Count of Fishermen			Net Change
	2006	2007	2008	
0	139	107	106	**-33**
1-100	50	43	40	**-10**
101-200	23	18	18	**-5**
201-300	22	21	21	**-1**
301-400	22	22	23	**1**
401-500	13	14	13	**0**
501-600	3	5	5	**2**
601-700	4	4	4	**0**
701-800	24	24	24	**0**
∑	300	258	254	**-46**

VI. CONCLUSION

Non-renewal of permits with non-zero trap allocations has provided the greatest reduction in permit numbers and trap count from year-to-year. Should the permit population reach equilibrium, future effort reduction, if warranted, may require “active reductions” given the permit population at the higher end of the trap allocation spectrum as well as the number of trap and permit transfers remain relatively static.

VII. APPENDICES

APPENDIX A – DETERMINATION OF INDIVIDUAL TRAP ALLOCATIONS

Appendix 14

Below is a table showing Effective Traps Fished for 2001 – 2003 for a hypothetical commercial lobster permit (Table 4). As you will see, the LCMA 2 trap allocation of 345 traps is based on the 2003 fishing history.

Table 4. Summary of traps reported fished, pounds of lobster reported landed and predicted traps during the period 2001-2003 used by *MarineFisheries* to determine Effective Traps Fished and a permit holder's Initial Trap Allocation for LCMA 2.

	2001	2002	2003
Total Traps reported fished on DMF catch reports	98	100	345
Poundage	387	1,856	4,550
Predicted Traps for the reported poundage Based on Figure 2.	106	292	521
Effective Traps Fished	98	100	**345**

APPENDIX B - Details of 2006 – 2008 Trap Reductions

Appendix 14

Table 5 details commercial lobster permit non-renewals in LCMA 2 and resultant trap reductions prior to the first official year of the plan going into effect but after notification of Initial Trap Allocations. Tables 6a-c detail commercial lobster permit non-renewals and trap reductions due to coastal lobster permit and trap transfers within LCMA 2 during its first year after implementation (2007). Tables 7a-c trap reductions due to coastal lobster permit and trap transfers as well as permits that have yet to be renewed during the second year of the plan (2008), as of July 31, 2008.

YEAR 2006

Table 5. Permits removed from LCMA 2.

Transaction #	Former LCMA 2 Traps Eliminated	Permit Category
1	25	State
2	0	State
3	0	State
4	0	Federal
5	0	Federal
6	0	Federal
7	0	Federal
8	0	Federal *
9	0	Federal *
10	0	Federal *
11	0	Federal *
12	0	Federal *
13	0	Federal *
14	0	Federal *
15	0	Federal *
16	0	Federal *
Total =	**25**	

* DMF has record only of a state offshore permit (i.e., lack federal permit information); however, the presumption is that they are federal-only. Permits were removed either through non-renewal or the permit holder elected not to endorse for LCMA 2 in 2006 and beyond. Individuals, who did not renew their commercial lobster permits may have elected to get out of fishing entirely, retain or acquire permits for other fisheries, or acquire a non-trap offshore lobster permit.

YEAR 2007

Table 6a. Permits removed from LCMA 2.

Transaction #	Former LCMA 2 Traps Eliminated	Permit Category
1	0	State
2	30	State
3	0	State
4	800	State
5	8	State
6	30	State
7	25	State
8	0	State
9	0	Federal
10	250	State
11	0	Federal
12	15	State
13	0	Federal *
14	0	State
15	0	State
16	0	Federal
17	0	Federal *
18	91	Dual
Total =	**1,249**	

* DMF has record only of a state offshore permit (i.e., lack federal permit information), however, the presumption is that they are federal-only. Permits were removed either through non-renewal or revocation. Individuals who did not renew their commercial lobster permits may have elected to get out of fishing entirely, retain or acquire permits for other fisheries, or acquire a non-trap offshore lobster permit

Table 6b. 2007 permit transfers within LCMA 2.

Transaction #	Original LCMA 2 Trap Allocation	Final 2007 LCMA 2 Trap Allocation	LCMA 2 Traps Eliminated	Permit Category
1	200	180	20	State → State
2	500	450	50	Dual → Dual
3	256	231	25	State → Dual
4	32	29	3	State → State
5	55	50	5	Dual → State
6	280	252	28	State → Dual
		Total =	**131**	

Table 6c. 2007 LCMA 2 trap allocation transfers.

Transaction # (same # indicates multiple transfers from single permit holder)	LCMA 2 Trap Allocation Transferred	LCMA 2 Trap Allocation Received (minus 10% trap transfer tax)	LCMA 2 Traps Eliminated	Permit Category
1	100	90	10	State → State
1	100	90	10	State → State
1	100	90	10	State → Dual
4	100	90	10	State → Dual
5	250	225	25	State → Federal
6	118	106	12	State → State
7	79	71	8	State → Dual
8	225	203	22	State → State
9	200	180	20	State → State
10	300	270	30	State → State
		Total =	**157**	

Appendix 14

YEAR 2008

Table 7a. 2008 (thru July 31, 2008) permit transfers within LCMA 2.

Transaction #	Beginning 2008 LCMA 2 Trap Allocation	Current 2008 LCMA 2 Trap Allocation	LCMA 2 Traps Eliminated	Permit Category
1	800	720	80	Dual → Dual
2	0	0	0*	State → State
		Total =	**80**	

*This permit was transferable despite the 0 trap allocation, because this was the original Initial Trap Allocation.

Table 7c. Permits yet to be renewed as of July 31, 2008 or surrendered in LCMA 2.

Transaction #	Former LCMA 2 Traps Eliminated	Permit Category
1	20	State
2	70	Federal*
3	0	Federal
4	0	State
5	0	Federal
6	800	Dual
Total =	**890**	

* DMF only has a record of a state offshore permit (i.e., lack federal permit information), however, the presumption is that they are federal-only.

Table 7b. 2008 (thru July 31, 2008) LCMA 2 trap allocation transfers.

Transaction #[†]	LCMA 2 Trap Allocation Transferred	LCMA 2 Trap Allocation Received (minus 10% trap transfer tax)	LCMA 2 Traps Eliminated	Permit Category
1	50	45	5	State → State
1	100	90	10	State → State
3	100	90	10	State → State
4	76	68	8	State → State
5	100	90	10	Dual → State
		Total =	**43**	

[†]same # indicates multiple transfers from single permit holder.

Appendix 14

APPENDIX C - RELEVANT REGULATIONS – 322 CMR

6.13 Lobster Trap Limit in the Coastal Waters of the Commonwealth

(1) Definitions. For the purposes of 322 CMR 6.13 the following words shall have the following meanings.

Effective Traps Fished means a value used in

(a) the Outer Cape Cod Trap Allocation Determination that was calculated in the assessment of each eligible fisherman's annual performance for the years 2000, 2001, and 2002. For each year that traps and landings were reported, Effective Traps Fished is the lower value of the maximum number of traps reported fished for the year and the predicted number of traps that is associated with the permit holder's reported poundage of lobsters for the year. The value for predicted number of traps was calculated based on a DMF published analysis of traps fished and pounds landed for the OCCLCMA and that relationship is depicted in Figure 1.

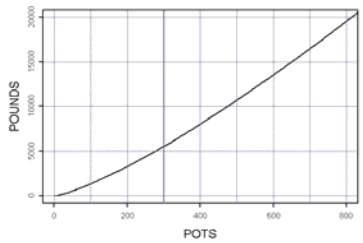


Figure 1. Relationship between pounds harvested and traps fished used to allocate Initial Trap Allocation. Data to calculate the relationship was obtained from catch reports from fishermen fishing primarily in OCCLCMA during years (1997-2001).

(b) the LCMA 2 Trap Allocation Determination that was calculated in the assessment of each eligible fisherman's annual performance for the years 2001, 2002, and 2003. For each year that traps and landings were reported, Effective Traps Fished is the lower value of the maximum number of traps reported fished for the year and the predicted number of traps that is associated with the permit holder's reported poundage of lobsters for the year. The value for predicted number of traps was calculated based on the Interstate Lobster Management Plan Addendum VII published by the Atlantic States Marine Fisheries Commission. That relationship is depicted in Figure 2.

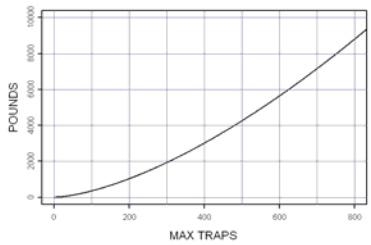


Figure 2. Relationship between pounds harvested and traps fished used to allocate Initial Trap Allocation. Data to calculate the relationship was obtained from catch reports from fishermen fishing primarily in LCMA 2 during years (2001-2003).

(c) Exception. For coastal lobster permit holders who fished for lobster primarily by hand using SCUBA gear in a LCMA under control of an effort control plan, Effective Traps Fished means the annual predicted number of traps that is associated with the permit holder's reported poundage of lobsters during the performance years specified for a LCMA under control of an effort control plan as defined in 322 CMR 6.13(1)(a&b). The value for predicted number of traps was calculated based on a DMF published analysis of traps fished and pounds landed for a LCMA and that relationship is depicted in Figures 1 & 2.

Fish means to set lobster traps on the ocean bottom.

LCMA 2 Trap Allocation means the number of traps assigned to a commercial lobster permit holder endorsed for LCMA 2 plus or minus any traps allocated through the trap transfer process outlined in 322 CMR 7.03.

Lobster means that species known as *Homarus americanus*.

Outer Cape Cod Trap Allocation. means the number of traps assigned to a coastal permit holder endorsed for the Outer Cape Cod Lobster Conservation Management Area (OCCLCMA) plus or minus any traps allocated through the trap transfer process outlined in 322 CMR 7.03.

(2) Eligibility for Trap Allocation.

(a) To be eligible for Trap Allocation in OCCLCMA, permit holders must have documented lawful fishing of lobster traps primarily in OCCLCMA during years 1999, 2000, or 2001. Any permit holder who held a permit endorsed for OCCLCMA during the years 1999, 2000, or 2001 but dropped OCCLCMA from their permit during a subsequent year is not eligible. Any permit holder who received their permit off the waiting list during 2001 and had no fishing performance in 2001 may appeal for an Initial Trap Allocation based on their 2002 fishing performance in OCCLCMA.

(b) To be eligible for Trap Allocation in LCMA 2, permit holders must have documented lawful fishing of lobster traps primarily in LCMA 2 during years 2001, 2002, and 2003. Any permit holder who held a permit endorsed for LCMA 2 during the years 2001, 2002, and 2003 but dropped LCMA 2 from their permit during a subsequent year is not eligible. Any permit holder who had no documented fishing performance during the years 2001-2003 due to documented medically-based inability or military service may appeal for an Initial Trap Allocation based on their 1999 and 2000 fishing performance in LCMA 2.

(c) Exception. Coastal Lobster permit holders who fished for lobster primarily by hand using SCUBA gear during the years of eligibility for a LCMA under control of an effort control plan as defined in 322 CMR 6.13(2) may be eligible for Trap Allocation in a LCMA based on documented lawful landings of lobster as provided for in 322 CMR 6.13(1)(c) & (3).

(3) Trap Allocation Determination.

(a) Outer Cape Cod

1. Initial Trap Allocation shall be the highest value of Effective Traps Fished for each permit holder during the period 2000 though 2002. The Director may lower a permit holder's Initial Trap Allocation if the permit holder failed to purchase and use valid trap tags for any year used in the allocation determination or if after a DMF audit the values for traps fished or poundage are determined to be incorrect.

2. Trap Allocation shall be adjusted annually based on any Trap Allocation transfers approved by the Director pursuant to 322 CMR 7.03.

(b) LCMA 2

1. Initial Trap Allocation shall be the highest value of Effective Traps Fished for each permit holder during the period 2001 though 2003. The Director may lower a permit holder's Initial Trap Allocation if the permit holder failed to purchase and use valid trap tags for any year used in the allocation determination or if after a DMF audit the values for traps fished or poundage are determined to be incorrect.

2. Trap Allocation shall be adjusted annually based on any Trap Allocation transfers approved by the Director pursuant to 322 CMR 7.03.

(4) Trap Limitation. It is unlawful for any person with a commercial lobster permit endorsed for:

(a) LCMA 1 to fish more than 800 lobster traps at any one time in LCMA 1;

(b) LCMA 2 to fish more than their trap allocation approved by the Director subject to trap allocation regulations established by 322 CMR 6.13;

(c) LCMA 3 to fish more traps than their allocation approved by NOAA Fisheries and the Director consistent with the interstate plan; or

(d) OCCLCMA to fish more than their trap allocation as approved by the Director subject to trap allocation regulations established by 322 CMR 6.13.

(5) Vessel Limitation. The trap limit established by 322 CMR 6.13(2), shall apply to any vessel involved in the coastal commercial lobster fishery, regardless of the number of fishermen holding coastal commercial lobster permits on board said vessel.

(a) Commercial Lobster Permits Endorsed for LCMA 1, 2 or the OCCLCMA. It shall be unlawful to fish more than 800 traps aboard any vessel involved in the offshore commercial lobster fishery in LCMA 1, 2, or OCCLCMA or the coastal commercial lobster fishery, regardless of the number of fishermen holding coastal or offshore commercial lobster permits on board said vessel.

(b) Commercial Lobster Permits Endorsed for LCMA 3. It shall be unlawful to fish more than the

allocation approved by NOAA Fisheries and the Director consistent with the interstate plan aboard any vessel involved in the offshore commercial lobster fishery in LCMA 3, regardless of the number of fishermen holding offshore commercial lobster permits on board said vessel.

6.33 Lobster Management Areas

(1) Definitions.

(a) Lobster Management Area means one of three Recreational Lobster Areas or one of seven Lobster Conservation Management Areas (LCMA) as specified in the Atlantic States Marine Fisheries Commission American Lobster Fishery Management Plan (FMP) and endorsed on the Massachusetts Commercial Fisherman Permit pursuant to 322 CMR 6.31.

(2) Area Boundaries.

(a) LCMA 1. Beginning at the Massachusetts/New Hampshire border, following the outer boundary of the territorial waters of New Hampshire and Maine to the US/Canada border, thence to the intersection of LORAN C 9960-Y-44400 with the boundary of the US Exclusive Economic Zone, thence to the intersection of 9960-Y-44400 with 70 [degrees] West Longitude, thence following the 70th meridian to its intersection with 9960-W-13700, thence following 9960-W-13700 to its intersection with 9960-Y-44120, thence following 9960-Y-44120 westerly to its intersection with 9960-W-13850, thence following 9960-W-13850 southeasterly to its intersection with 9960-Y-44110, thence following 9960-Y-44110 easterly to Race Point in Provincetown, thence following the MA shoreline back to the beginning.

(b) Outer Cape LCMA. Beginning at Race Point in Provincetown, following 9960-Y-44110 westerly to its intersection with 9960-W-13850, thence following 9960-W-13850 northwesterly to 9960-Y-44120, thence following 9960-W-44120 easterly to its intersection with 9960-W-13700, thence following 9960-W-13700 southerly to 9960-Y-43780, thence following 9960-Y-43780 westerly to its intersection with 70 [degrees] five minutes West Longitude, thence following 70 [degrees] five minutes West Longitude north through Nantucket Island to the shoreline of Harwich, thence following the shoreline of Cape Cod east and north back to the beginning.

(c) Overlap- Area 1/OCLMA. Beginning at Race Point in Provincetown, following 9960-Y-44110 westerly to its intersection with 9960-W-13850, thence following 9960-W-13850 southeasterly to its intersection with 9960-X-25330, thence following 9960-X-25330 northeasterly to the shoreline of Great Island in Wellfleet, thence following the shoreline northerly back to the beginning.

Fishermen endorsed for either LCMA 1 or OCLMA may fish in the overlap zone under the rules of the area(s) endorsed on their permits. Fishermen with both areas endorsed must observe the most restrictive rules.

(d) Overlap- Area 1/Area 2. The Cape Cod Canal, from the Massachusetts Maritime Academy pier at the southern end to the end of the east breakwater on the northern end.

Fishermen from either LCMA 1 or LCMA 2 may fish in the overlap zone under the rules of the area(s) endorsed on their permits. Fishermen with both areas endorsed must observe the most restrictive rules.

(e) LCMA 2. Beginning at the shoreline of Harwich, following the 70 [degrees] five minutes West Longitude south through the Island of Nantucket to its intersection with 9960-Y-43780, thence following 9960-Y-43780 easterly to its intersection with 9960-W-13700, thence following 9960-W-13700 southerly to its intersection 9960-W-14610, thence following 9960-14610 northerly to the outer boundary of New York territorial waters, thence following the outer boundary of the territorial waters of New York and Rhode Island to the Massachusetts/Rhode Island boundary, thence following the Massachusetts/Rhode Island boundary to the shoreline, thence following the shoreline of Massachusetts back to the beginning.

(f) LCMA 3. All waters of the Exclusive Economic Zone (EEZ) of the United States seaward of LCMA 1, OC, 2, 4, 5, and 6.

(g) Overlap Area 2/Area 3. Fishermen from either Area 2 or Area 3 may fish in an area bounded as follows under their respective LCMA rules: Beginning at the intersection of 9960-W-13700 and 9960-Y-43700, thence westerly along the 43700 line to the intersection with 9960-W-14610, thence southwesterly along a line whose extension reaches the intersection of 9960-Y-43500 with 9960-X-26400 to 9960-Y-43600, thence easterly along the 43600 line to 9960-W-13700, thence northwesterly along the 13700 line to the beginning.

(h) LCMA 4. All waters including state and federal waters that are near-shore in the northern Mid-Atlantic area, as defined by the area bounded
by straight lines connecting the following points:

Appendix 14

Point	LATITITUDE (ºN)	LONGITUDE (ºW)
M	40º 27.5’	72º 14’
N	40º 45.5	71º 34’
O	41º 07’	71º 43’
P	41º 06.5’	71º 47’
S	40º 58’	72º 00’
T	41º 00.5’	72º 00’
From pt. “T”, along the NY/NJ coast to pt. “W”		
W	39º 50’	74º 09’
V	39º 50’	73º 01’
U	40º 12.5’	72º 48.5’
From pt. “U” back to pt. “M”.		

(i) LCMA 5. All waters including state and federal waters that are near-shore in the southern Mid-Atlantic area, as defined by the area bounded by straight lines connecting the following points, in the order stated:

Point	LATITITUDE (ºN)	LONGITUDE (ºW)
W	39º 50’	74º 09’
V	39º 50’	73º 01’
X	38º 39.5’	73º 40’
Y	38º 12’	73º 55’
Z	37º 12’	74º 44’
ZA	35º 34’	74º 51’
ZB	35º 14.5’	75º 31’
From pt “ZB”, along the coasts of NC/VA/MD/DE/NJ back to pt. “W”.		

(j) LCMA 6. All state waters as defined by the area bounded by straight lines connecting the following points, in the order stated:

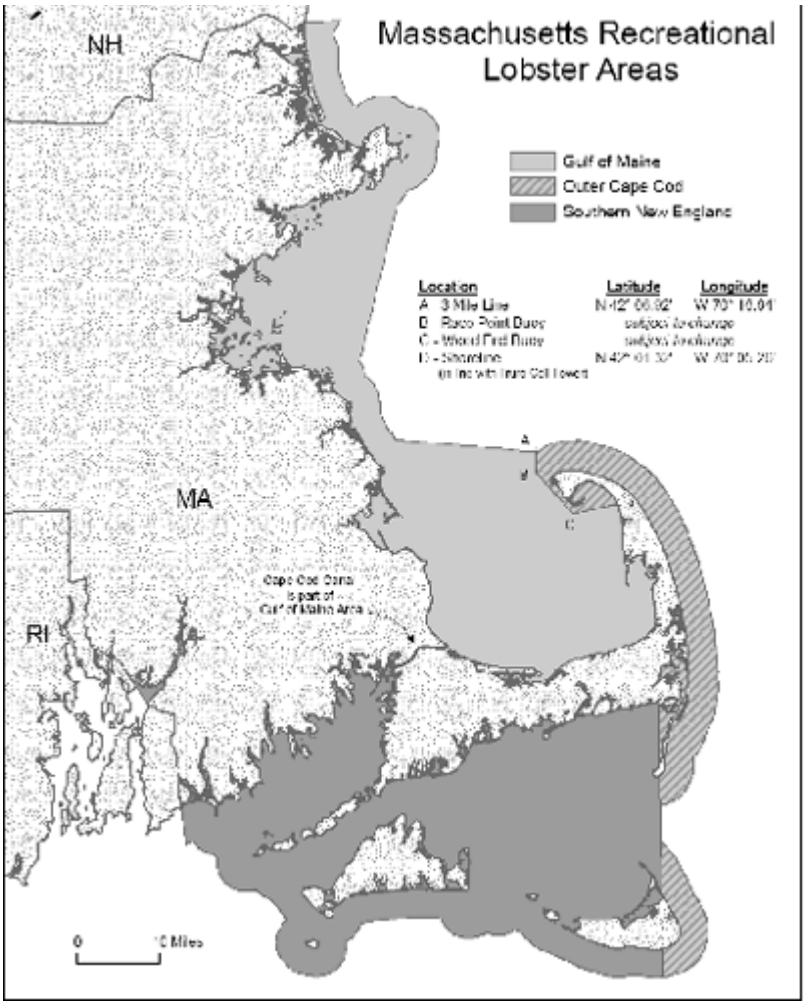
Point	LATITITUDE (ºN)	LONGITUDE (ºW)
T	41º 00.5’	72º 00’
S	40º 58’	72º 00’
From pt. “S”, boundary follows the 3 mile limit of NY state waters as it curves around Montauk Pt. To pt. “P”		
P	41º 06.5’	71º 47’
Q	41º 18’ 30”	71º 54’ 30”
R	41º 11’ 30”	71º 47’ 15”
From pt. “R”, along the maritime boundary between CT & RI to the coast; then west along the coast of CT to the western entrance of Long Island Sound; then east along the NY coast of Long Island Sound and back to pt. “T”.		

(k) Gulf of Maine Recreational Lobster Area means those state waters north of Cape Cod Bay to the New Hampshire border including waters of the Cape Cod Canal.

(l) Outer Cape Cod Recreational Lobster Area means all state waters eastward of 70 degrees longitude off Nantucket and eastward and northward of Outer Cape Cod from Chatham to Provincetown’s Race Point, including a portion of upper Cape Cod Bay as defined by a line drawn from the three nautical mile line northwest of race Point at 42 degrees 7 minutes latitude and 70 degrees 16 minutes longitude south to the Race Point Buoy then southeast to the Wood End Buoy and east to the shoreline at 42 degrees 01.32 minutes latitude and 70 degrees 05.26 minutes longitude.

(m) Southern New England Recreational Lobster Area means those state waters west of 70 degrees and south of Cape Cod.

Appendix 14



7.03 Coastal Lobster Permit & Trap Allocation Transfer Programs

(1) Purpose and Scope. The purpose of 322 CMR 7.03 is to regulate the number of lobster traps on a regional and individual basis to prevent over-fishing within each Lobster Conservation Management Area (LCMA) managed by the Commonwealth through the ASMFC, and to establish a process to enable the transfer of existing commercial lobster permits and traps pursuant to M.G.L. c. 130, § 38B, and St. 1992 c. 369.

The American lobster fishery is the state's most economically important fishery conducted within the territorial waters. To meet conservation goals of the interstate plan specific to the nearshore waters around eastern Cape Cod and southern New England, the Outer Cape Cod Lobster Conservation Management Area (OCCLCMA) and Lobster Conservation Management Area 2 (LCMA 2) were developed, respectively. The following regulation (322 CMR 7.03) details the effort control plans for the OCCLCMA and LCMA 2 comprised of trap limit programs and transfer programs as well as the transfer regulations for the remainder of the coastal lobster fishery conducted in LCMA 1.

The transfer program for the coastal lobster fishery conducted in LCMA 1 allows permit holders to transfer their permits along with lobster related business assets under the historical transfer criteria developed for the coastal lobster fishery. Beginning in 2004, the only permit transfers allowed between LCMAs are those involving the transfer of a permit to an LCMA under management of an effort control plan. This will enable commercial fishermen to retain the maximum flexibility in the conduct of their businesses while ensuring conservation goals of any area-specific effort control plans are not compromised by increases in traps fished.

(2) Definitions. For the purposes of 322 CMR 7.03 the following words shall have the following meanings

(a) Actively Fished means landing and selling at least 1,000 lbs. of lobster or landing and selling

lobster on at least 20 occasions, in a single year.

(b) Allocation Transferee means the holder of a commercial lobster permit to whom a transfer of trap allocation is made.

(c) Permit Holder means a holder of a coastal commercial lobster permit endorsed for either LCMAs 1, 2 or OCC.

(d) Permit Transferee means the person to whom a commercial lobster permit is transferred who must document that he/she has at least one year of full-time or equivalent part-time experience in the commercial lobster trap fishery or two years of full-time or equivalent part-time experience in other commercial fisheries, according to criteria developed by the Division.

(e) Transfer Trap Debit means the area-specific percentage of each allocation transfer transaction retained by the Division for conservation purposes as defined by the Division and subject to criteria developed by the Division, and not restricted by the Director under his authority to condition permits.

(3) Renewals.

(a) The Director shall renew all existing Coastal Commercial Lobster Permits in accordance with M.G.L. c.130, § 38B, and 322 CMR 7.01(2)(a) and (5)(f), provided that catch reports and renewal applications are received by February 28 and the renewal process, including late renewals approved for sufficient cause, is completed prior to December 31st of any year.

(b) All Coastal Lobster and Offshore Lobster Permit holders must declare the ASMFC Lobster Conservation Management Area(s) as defined in 322 CMR 6.33 in which they will fish during that license year when renewal forms are submitted.

(c) Coastal Lobster Permit holders are prohibited from multiple LCMA endorsements, except those commercial lobster permits held by persons with valid federal authorization for LCMA 3 who may additionally receive authorization for either LCMA 1, 2 or Outer Cape Cod or those commercial lobster permit holders not fishing with trap gear who may additionally receive authorization for LCMA 1, 2, or Outer Cape Cod.

(d) Those authorized for more than one LCMA as designated on their permits shall observe the most restrictive of different regulations for the areas declared as established by 322 CMR and the ASMFC Lobster Management Plan.

(e) Coastal Lobster Permit holders are prohibited from making changes in area designations during the annual renewal period except to drop a LCMA or to add a LCMA under management of an approved effort control plan for which the permit holder has received a LCMA-specific trap allocation.

(4) Forfeiture. All Coastal Lobster Permits which are not renewed in accordance with 322 CMR 7.03 shall be forfeited to the Division. The Director may transfer, in order, no more than 50% of the forfeited permits to waiting list applicants.

(5) Transfer Programs.

(a) OCC Transfer Program is administered by the Division. Applications for transfers shall be provided by the Division, must be signed by the permit holder and the allocation or permit transferee, and must be notarized prior to submission to the Division. No applications may be accepted after November 30 for the following fishing year. Commercial lobster permit holders endorsed for Outer Cape Cod may:

1. transfer their commercial lobster permit involving the sale or transfer their entire trap allocation;

2. transfer all of their trap allocation to an allocation transferee ; or

3. in compliance with 322 CMR 7.03(9)(d), transfer part of their transferable allocation in multiples of 50 traps to an allocation transferee.

(b) LCMA 2 Transfer Program is administered by the Division. Applications for transfers shall be provided by the Division, must be signed by the permit holder and the allocation or permit transferee, and must be notarized prior to submission to the Division. No trap allocation transfer applications may be accepted after November 30 for the following fishing year. Commercial lobster permit holders endorsed for LCMA 2 may:

1. transfer their commercial lobster permit involving the sale or transfer their entire trap allocation;

2. transfer all of their trap allocation to an allocation transferee ; or

3. transfer part of their transferable allocation in multiples of 50 traps to an allocation transferee.

(c) LCMA 1 Transfer Program enables commercial lobster permit holders endorsed for LCMA 1 to transfer their permits to a permit transferee, provided the permit has been actively fished for four

of the last five years, as evidenced by valid catch reports filed with the Division, subject to criteria developed by the Division, and is not restricted by the Director under his authority to prohibit transfers. The transfer program is administered by the Division. Applications for transfers shall be provided by the Division, must be signed by the permit holder and the transferee, and must be notarized prior to submission to the Division. Commercial lobster permit holders endorsed for LCMA 1 may transfer their commercial lobster permit involving the sale or transfer of lobster related business assets to a permit transferee.

(6) Restrictions.

(a) Transfers shall involve the sale or transfer of lobster related business assets.

(b) Permit and allocation transfers may be denied if any evidence of fraud is found, or the Director determines that the transfer is not in the best interests of the Commonwealth.

(c) All lobster businesses fishing under the authority of a coastal lobster permit as defined in 322 CMR 7.01(2)(a) shall be owner-operated.

(d) Trap Allocation transfers may be subject to a transfer trap debit of 10% of the total amount of traps transferred through the trap transfer process.

(e) Any permit holder authorized to fish traps in OCCLMA or LCMA 2 who transfers a portion of their Trap Allocation resulting in the Allocation totaling less than 50 traps shall have their permit retired immediately.

(f) Any permit holder issued a trap allocation based in part or whole upon SCUBA history as determined in 322 CMR 6.13 shall be prohibited from transferring any part of their trap allocation except when transferring their commercial lobster permit.

(g) Any permit holder issued a trap allocation based in part or whole upon SCUBA history as determined in 322 CMR 6.13 shall be prohibited from transferring their trap allocation along with their commercial lobster permit until the permit has been actively fished for four of the last five years as evidenced by valid catch reports filed with the Division, subject to criteria developed by the Division, and not restricted by the Director under his authority to prohibit transfers. Catch history prior to the issuance of a trap allocation shall not apply towards fulfilling meeting actively fished requirements.

(7) Exceptions.

(a) Performance criteria for permit holders as established by 322 CMR 7.03(2) may be waived for the following reasons:

1. documented disability of the permit holder, provided that the permit holder fished during at least four of the five years immediately preceding the disability as evidenced by catch reports, and provided further that a signed statement by a physician verifies the disability precludes the permit holder from fishing.

2. for the purposes of transferring a permit to an immediate family member, including transfers involving the death of the permit holder. Immediate family member shall mean the legal father, mother, wife, husband, sister, brother, son, daughter, or grandchild of the permit holder in the direct line.

(b) Performance criteria established by 322 CMR 7.03 shall be waived for forfeited permits issued to waiting list applicants.

(c) The requirement that permit holders be owner/operators may be waived through a letter of authorization issued by the Director that is subject to annual renewal. Letters of authorization may be granted for use of the permit and associated fishing operation that includes the gear and vessel owned by the permit holder that was actively fished prior to the request. Authorizations may be issued for permit holders on active military service or for immediate family members. For the recipient of a posthumous transfer, or disabled permit holder, authorizations may be issued for up to two years, provided the disability prevents the permit holder from fishing their permit as evidenced by a signed statement from a physician.

(d) The requirement that allocation transfers involve multiples of 50 traps may be waived for permit holders who transfer all of their transferable allocation.

(8) Waiting List. Persons on the established waiting list for Coastal Commercial Lobster Permits must reapply to hold their relative positions on the list prior to August 1, 1993, after which the list will be closed. Persons who can document, to the satisfaction of the Director, that, due to unforeseen circumstances, they were unable to reapply before the list closure date may be reinstated to the bottom of the waiting list.

(9) Prohibitions. It shall be unlawful:

(a) To loan, lease, or sell a Coastal Commercial Lobster Permit except under the provisions of 322 CMR 7.03.

(b) To submit false or incomplete forms or applications according to the provisions of M.G.L. c. 130, § 38B.

(c) for the holder of a Coastal Commercial Lobster Permit to acquire an additional permit(s) through a transfer pursuant to 322 CMR 7.03 or from the established waiting list.

(d) for a Permit Holder to retain a trap allocation equal to less than 50 traps after they have transferred part of their trap allocation to another permit holder or a trap allocation greater than 800 traps after they receive a trap allocation from another permit holder;

(e) for allocation transfers to involve the transfer of traps outside of the specific LCMA for which the trap allocation is designated;

(f) to transfer a commercial lobster permit endorsed for traps from one LCMA to another LCMA unless the permit is transferred to an LCMA under management of an approved effort control plan for which the permit holder has received an LCMA-specific trap allocation.

Appendix 14

Reducing Trap Effort in the Outer Cape Lobster Conservation Management Area Fishery through an Effort Control Plan

Comprehensive Status Report

(December 2003 through July 2008)

by
Melanie N. Griffin, Fisheries Management Specialist

Massachusetts Division of Marine Fisheries
251 Causeway Street, Suite 400
Boston, MA 02114

Deval Patrick, Governor
Tim Murray, Lieutenant Governor
Ian Bowles, Secretary – Executive Office of Environmental Affairs
Mary Griffin, Commissioner – Department of Fish & Game
Paul J. Diodati – Division of Marine Fisheries

Appendix 14

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY……..….3.

II. BACKGROUND…….....4.

III. PLAN SPECIFICS……4.

IV. PLAN ENACTMENT AND ADMINISTRATION……5.

V. RESULTS OF THE OUTER CAPE LOBSTER TRAP EFFORT CONTROL PLAN….6.

VI. APPENDICES

- **A. 2007 *MARINEFISHERIES* LOBSTER CATCH REPORTS & STATISTICAL MAPS ……...……...9.**
- **B. DETAILS OF 2004-2008 TRAP REDUCTIONS……15.**
- **C. RELEVANT REGULATIONS – 322 CMR…….18.**
- **D. 2007 NOTIFICATION TO PERMIT HOLDERS RECEIVING ADDITIONAL TRAP ALLOCATION BASED ON SCUBA GEAR.…….26.**

Appendix 14

I. EXECUTIVE SUMMARY

Calendar year 2007 marks the fourth year the Outer Cape Effort Control Plan, enacted in December 2003, has been in effect. MarineFisheries assigned eligible lobstermen an individual trap allocation reflective of their best fishing year during 2000 through 2002 based on their annual catch reports. MarineFisheries estimated that approximately 33,000 traps were fished commercially in 1998 in the Outer Cape Lobster Conservation Management Area (OCLCMA, see Figure 1) by fishermen who fished exclusively in this area as well as those who fished there on a seasonal basis. This report summarizes the effectiveness to date of the plan designed to control fishing mortality by reducing traps fished in the area by 20% below the number estimated fished in 1998.

Through December of 2007, allocated traps number approximately 30,000 – an 8% reduction from 1998 levels. This reduction has been achieved incrementally by a 7% trap reduction in 2004, an additional 3% reduction during 2005. Total trap allocations remained static in 2006 and increased by 3% in 2007 due to the issuance of trap allocations to eligible permit holders based upon historical harvest of lobster by SCUBA gear. Excluding SCUBA-based trap allocations, total traps reported fished in 2007 (28,682) represent a 10% reduction from 1998 levels. Reductions are a result of a 10% "conservation tax" on each permit and trap transfer, as well as permit non-renewals, permit transfers to other areas and revocation of permits. Actual traps fished in any year during 2004 - 2007 have ranged between 27,000 – 28,000 traps. To date, the plan's allocation scheme has resulted in a varied scale of fishing operations. As of July 31, 2008, 74 permit holders were eligible to fish a range of trap allocations from 9 to 800 traps - the median trap level (459 traps) has increased steadily since 2004 (372 traps). Ten permit holders are eligible to fish the maximum of 800 traps.

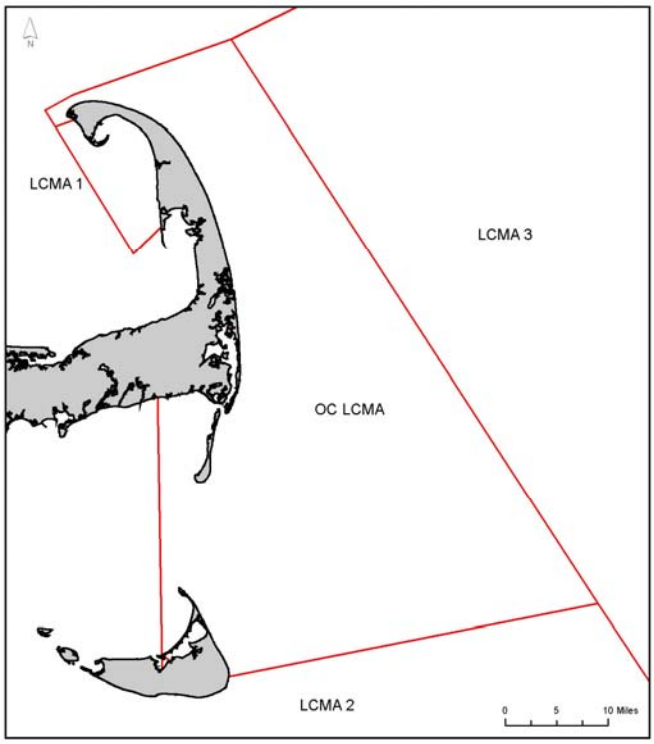


Figure 1. The Outer Cape Lobster Conservation Management Area (OCLCMA) abuts the three other Lobster Management Conservation Areas (1-3) governed by the interstate plan and Massachusetts regulations.

Appendix 14

II. BACKGROUND

Addendum III to Amendment 3 of the Interstate Fishery Management Plan for American Lobster mandated a 20% reduction from 1998 levels of traps fished in the Outer Cape to help meet lobster egg production goals and objectives. The 1998 baseline was calculated at 33,234 traps by tallying traps reported fished by commercial lobster permit holders on annual Massachusetts Division of Marine Fisheries (*MarineFisheries*) catch reports (see Appendix A).

The basis of the plan crafted by the Outer Cape Lobster Conservation Management Team in 2001 was to meet region-specific Outer Cape conservation goals. The original effort control plan's basic principles were to identify coastal and offshore lobster permit holders who fished traps in the area (in 1999 or 2000), cap current levels of effort by granting each eligible permit holder a transferable trap allocation based on their history of landings as documented on catch reports, and preclude new effort from entering the area.

MarineFisheries established a formal trap allocation transfer process to provide lobstermen opportunity to increase the scale of their lobster business without adding to the overall number of traps in the fishery. Fishermen wishing to enter the fishery or increase their trap allocation are allowed to obtain trap allocations from fishermen seeking to exit the fishery or scale down – a zero-sum situation. Overall trap numbers in the Outer Cape are passively reduced through a "trap tax" of 10% per transfer (permit and/or trap). For example, if a lobsterman seeks to transfer a 100-trap allocation to another lobsterman, the recipient would receive only a 90 trap allocation, the remaining 10 would be eliminated for conservation purposes.

III. PLAN SPECIFICS

MarineFisheries proposed - and the ASMFC approved - a plan similar in design and function to the original LCMT-developed plan except that the amended plan added an extra year (2001) to the eligibility period, and trap allocations would be based on each permit holder's unique fishing history using pounds landed in addition to traps reported fished during the years 2000 – 2002. The number of traps reported fished is not one of the agency's audit elements and therefore catch statistics of pounds harvested are more dependable than traps reported fished. The main aspects of *MarineFisheries'* plan included:

- Eligibility criteria based on verifiable landings of lobster caught primarily by traps from the Outer Cape in any one year from 1999 – 2001 (Exception: those who received permits off the waiting list in 2001 were able to appeal for a Trap Allocation based on their 2002 fishing performance).

- Trap Allocations assigned based on maximum traps fished and landings (in lbs.) during 2000, 2001, and 2002 – either the "predicted" number of traps for that level of poundage or the number of traps reported fished – whichever was lower. Among the three years, each permit holder was given the highest value as an initial trap allocation.

  In 2007, *MarineFisheries* enacted regulations that allow permit holders to qualify for trap allocations based on historical landings of lobster caught by SCUBA gear during the years of eligibility for a LCMA under control of an effort control plan. Allocations are based on the "predicted" number of traps for the historical level of poundage. Among the three years, each permit holder is given the highest value as additional trap allocation.

- Transfer programs that enable permits and/or trap allocations to be transferred. Trap allocations may not be transferred out of the Outer Cape, must be transferred in quantities of 50 or more traps, and every transaction shall be assessed a 10% reduction in trap numbers. *MarineFisheries* must receive applications for trap transfers by November 30 of the previous fishing year.

To prevent a "doubling" of effort that might occur if a SCUBA diver transfers their trap allocation but continues to dive for lobsters, permit holders who receive trap allocations based upon SCUBA history will be limited to transferring their entire trap allocation as a block with their permit (i.e., they cannot transfer just increments of their trap allocation). Furthermore, permit transfers will be prohibited until a permit has been actively fished with traps in four of the last five years, excluding catch history prior to the issuance of trap allocations.

IV. PLAN ENACTMENT AND ADMINISTRATION

The first phase of the plan was accomplished in January – March 2004 by issuing Outer Cape commercial lobster permits endorsed for trap gear only to those fishermen who had a documented history fishing the area during 1999-2001 and had remained in the area during 2000 through 2003. *MarineFisheries* prohibited all other fishermen from entering the Outer Cape commercial lobster trap fishery by instituting a regulation mandating that all holders of a Coastal Lobster Permit (state waters) designate only a single Lobster Conservation Management Area (LCMA) on their permit (322 CMR 7.03, see Appendix C). *MarineFisheries* exempted federal permit holders with a valid Area 3 allocation from this regulation, allowing them to designate LCMA 3 on their permit in addition to one inshore LCMA. Consequently, many fishermen who fished primarily in LCMA 1 or 2 but set traps in the Outer Cape on a seasonal basis were prohibited from fishing traps in the OCLCMA.

MarineFisheries established trap allocations for each individual Outer Cape lobster trap fisherman based on their "Effective Traps Fished" as defined in state regulations 322 CMR 6.13 & 7.03. *MarineFisheries* used lobsterman-provided catch reports to allocate traps based on a combination of traps reported fished and landings.

Where records showed a substantial increase in fishing performance in the final year of eligibility (2002), *MarineFisheries* staff audited permit holders' records. *MarineFisheries* mailed each eligible Outer Cape lobsterman a letter that listed their landings history and calculated Initial Trap Allocation; permit holders were asked to sign the letter indicating their acceptance or non-acceptance of the allocation. Permit holders were allowed to appeal allocations solely on the basis of data entry and/or mathematical errors in logs.

This program applied to all commercial lobster permit holders fishing in Massachusetts waters or from Massachusetts ports - including those permit holders who have a federal permit and only land lobsters in the Commonwealth. Through an agreement with NOAA Fisheries, *MarineFisheries* is the responsible party for issuing all trap tags for federal and state permitted fishermen with Massachusetts home addresses.

Details of the Trap Allocation Transfer program include:

- Transfer applications made available from *MarineFisheries* on-line at: http://www.mass.gov/marinefisheries;
- All applications must be signed by both permit holders involved in the transfer, and each signature must be notarized;
- Fishermen with Outer Cape trap allocations may transfer some or all of their allocation to other lobstermen in 50 trap increments;
- Fishermen with a trap allocation less than 50 may transfer all of their allocation;
- Any fisherman whose trap allocations declines below 50 traps after transfer shall have the remaining trap allocation and the permit retired;
- All transfers are subject to a 10% trap tax; and

- A fisherman with an LCMA 1 or LCMA 2 permit may receive an Outer Cape trap allocation via a transfer but shall no longer be allowed to fish in LCMAs 1 or 2 and may only fish the trap allocation in the Outer Cape.
- Any permit holder issued a trap allocation based in part or whole upon SCUBA history as determined in 322 CMR 6.13 shall be prohibited from transferring any part of their trap allocation except when transferring their commercial lobster permit.
- Any permit holder issued a trap allocation based in part or whole upon SCUBA history as determined in 322 CMR 6.13 shall be prohibited from transferring their trap allocation along with their commercial lobster permit until the permit has been actively fished for four of the last five years as evidenced by valid catch reports filed with the Division, subject to criteria developed by the Division, and not restricted by the Director under his authority to prohibit transfers. Catch history prior to the issuance of a trap allocation shall not apply towards fulfilling meeting actively fished requirements.

V. RESULTS OF THE OUTER CAPE LOBSTER TRAP EFFORT CONTROL PLAN

Based on DMF analyses, the estimated reported traps fished in 1998 totaled 33,234 traps fished by 94 trap fishermen in state and federal waters of the Outer Cape LCMA. Consequently the 2008 target trap level to accomplish the 20% reduction is 26,587 traps. By July 31, 2008, the population of Outer Cape commercial lobster trap fishermen comprised 74 individuals allocated a total of 30,705 traps.

The plan allocated 32,106 traps to 90 eligible permit holders in early 2004 representing an immediate 3% reduction from 1998 levels. Thirteen permit holders, however, did not renew their permits in 2004 or transferred to another LCMA resulting in an additional trap reduction of 3% to 31,111 traps. Following trap and permit transfers occurring throughout 2004, traps declined by another 1% to 30,820. Throughout 2005, transfers and permit revocations reduced total trap allocations by 3%.[1] Permit and trap allocation transfers in 2006 & 2007 resulted in further reductions, however DMF resolved an ongoing appeal regarding historical lobster harvest using SCUBA gear in 2007 that added additional traps for eligible permit holders. Nevertheless, through July 31, 2008, overall traps allocated has been reduced from 1998 levels by 8% to 30,705 traps (Table 1, see Appendix B for details).

Table 1. Summary of Outer Cape trap reductions in 2004 and 2005, respectively. Note that trap reductions attributed to transfer of permits are attributed to the year in which the permit transfer was approved. Because applications for trap transfers are accepted only during a two month period at the end of each year, trap reductions attributed solely to transfer of traps are attributed to the next calendar year (i.e. trap transfer allocations submitted during the 2005 trap transfer request period will become effective beginning in 2006).

2004 Trap Reduction Results

Trap reduction count	Reason for trap reduction and # of transactions
43	Two permits were not renewed in any area for 2004
607	Six permits were transferred to LCMA 1
345	Five permits were transferred to LCMA 2
218	Nine permit transfers within OCC resulting in passive reduction of traps
73	Eleven trap allocation transfers resulting in passive reduction of traps
1,286	**= Total trap reduction achieved in first year of Plan**

2005 Trap Reduction Results

Trap reduction count	Reason for trap reduction and # of transactions
31	One permit not renewed in any area for 2005

[1] One permit holder finally accepted their Initial Trap Allocation in 2005.

800	One permit revoked permanently
5	One permit transfer within OCC resulting in passive reduction of traps
72	Seven trap allocation transfers resulting in passive reduction of traps
908	**= Total trap reduction achieved in second year of Plan**

2006 Trap Reduction Results

Trap reduction count	Reason for trap reduction and # of transactions
60	One permit transfer within OCC resulting in passive reduction of traps
60	Four trap allocation transfers resulting in passive reduction of traps
120	**= Total trap reduction achieved in third year of Plan**

2007 Trap Reduction Results

Trap reduction count	Reason for trap reduction and # of transactions
16	Two permit transfers within OCC resulting in passive reduction of traps
57	Two trap allocation transfers resulting in passive reduction of traps
73	**= Total trap reduction achieved in fourth year of Plan**

2008 Trap Reduction Results

Trap reduction count	Reason for trap reduction and # of transactions
25	3 trap allocation transfers resulting in passive reduction of traps (two permits were retired after transferring entire allocations)
25	**= Total trap reduction achieved in fifth year of Plan**

Actual traps fished annually in 2004 – 2007 represent a larger percent reduction from estimated 33,234 traps fished in 1998 (Table 2).

Table 2. Summary of traps reported fished on annual catch reports submitted by permit holders endorsed to fish traps in the Outer Cape Cod LCMA.

	2004	**2005**	**2006**	**2007***
Total Traps Reported Fished	26,801	27,547	27,730	28,682
% Reduction From 1998 Baseline	-19%	-17%	-17%	-14%

* Two catch reports, representing in total a 196 trap allocation, have yet to be submitted. This is a consequence of "cancelling" the 2007 permits in the DMF licensing database when permit holders transferred their entire allocation for the 2008 fishing year. Trap allocations for the 2008 fishing year are finalized by November 30, 2007 resulting in permit holders replacing their lobster permits with non-lobster permits in the 2007 calendar year. DMF is working to resolve this issue and better align the permit and Outer Cape Cod Trap Allocation databases.

The plan's allocation scheme has structured the fishery into a varied scale of fishing operations: in 2007 the population of Outer Cape trap lobstermen included 77 permit holders eligible to fish trap allocations ranging from 9 to 800 traps (Figure 3). Median trap allocation was 425 and average was 404. Only ten permit holders were eligible to fish the maximum level of 800 traps. Table 3 shows the net change in trap allocations as fishermen scaled their businesses up or down from 2004 to July 31, 2008.

Appendix 14

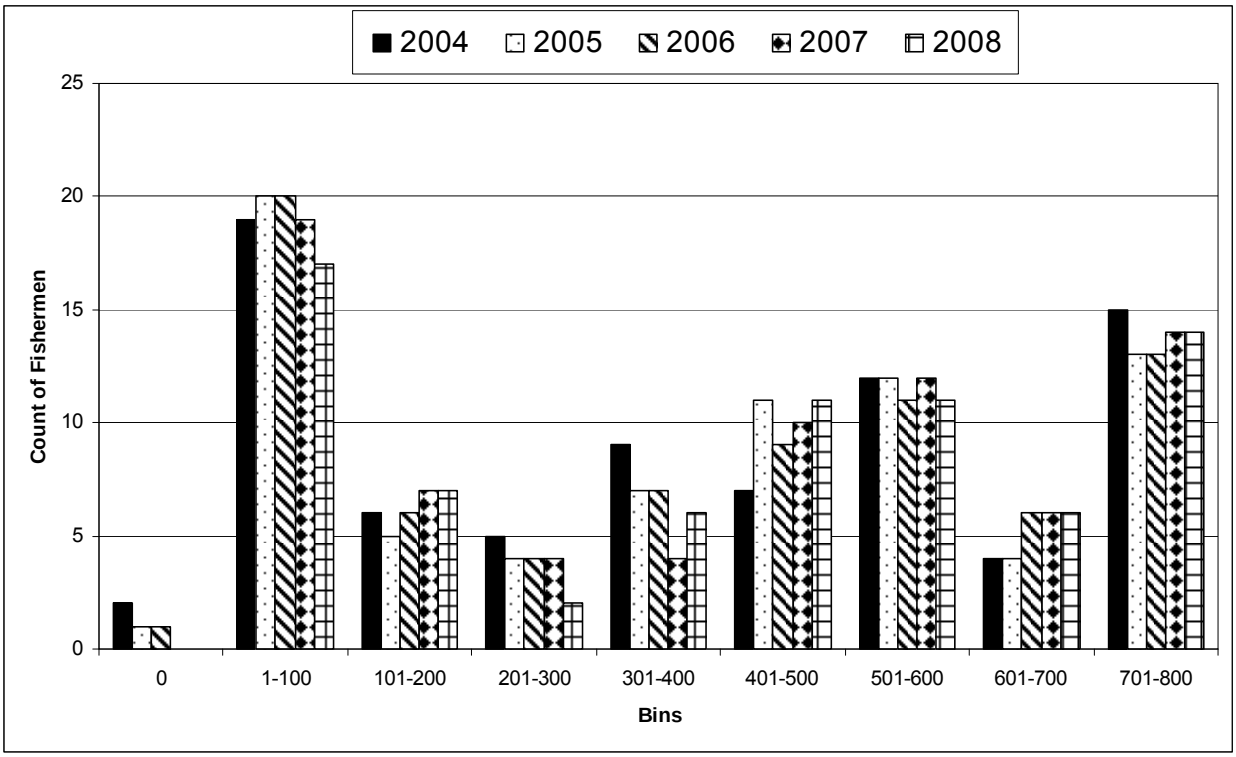


Figure 3. Trend in frequency of Outer Cape Cod trap allocations in 100-trap increments during January 1, 2004 – July 31, 2008 (n = 79 in 2004, n = 77 in 2005 & 2006. n = 76 in 2007 & n = 74 in 2008).

Table 3. Net change in frequency of Outer Cape Cod trap allocation (in 100-trap increments) from 2004 to July 31, 2008.

	Count of Fishermen					**Net Change**
Trap Interval	2004	2005	2006	2007	2008	
0	2	1	1	0	0	**-2**
1-100	19	20	20	19	17	**-2**
101-200	6	5	6	7	7	**1**
201-300	5	4	4	4	2	**-3**
301-400	9	7	7	4	6	**-3**
401-500	7	11	9	10	11	**4**
501-600	12	12	11	12	11	**-1**
601-700	4	4	6	6	6	**2**
701-800	15	13	13	14	14	**-1**
∑	79	77	77	76	74	**-5**

VI. APPENDICES

APPENDIX A - *MARINEFISHERIES* LOBSTER CATCH REPORTS & STATISTICAL MAPS

2007 COASTAL LOBSTER CATCH REPORT

COMMONWEALTH OF MASSACHUSETTS
DIVISION OF MARINE FISHERIES
251 CAUSEWAY STREET, SUITE 101, BOSTON, MA 02114-2153

CATCH REPORT DUE DATE: JANUARY 31, 2008
PRINT IN INK ONLY
PLEASE REFER TO INSTRUCTIONS ON BACK PAGE WHILE COMPLETING THIS LOBSTER CATCH REPORT

IMPORTANT THIS REPORT IS SUBJECT TO A RANDOM STATISTICAL AUDIT BY THE DIVISION, YOU SHOULD MAINTAIN ALL RECEIPTS, DEALER SLIPS, PERSONAL RECORDS, ETC. USED TO COMPLETE THIS REPORT FOR AT LEAST ONE YEAR FOLLOWING THE DATE OF SUBMISSION IN CASE YOU ARE CHOSEN.

PLEASE PRINT IN INK ONLY

IDENTIFICATION: DMF ID No: _____ Permit No: _____

Name as it appears on permit application: _____
(Last) (First) (MI)

Address: _____
(No.) (Street) (City/Town) (Zip Code)

Telephone Number: _____ Email: _____

CATCH STATUS & PARTNERSHIP INFORMATION:

A. If you **DID NOT CATCH** any lobster during 2007, check the box ☐ AND sign your name and date the report at bottom of this page and return it to the Division.

B. If you **DID CATCH** lobster during 2007, complete **BOTH SIDES** of this report as completely and accurately as possible. All lobster taken under this permit must be recorded on this report, even if taken incidentally

**** If you fished in conjunction with another permit holder in 2007, please report your catch and effort information separately ****

GEAR:

A) Circle one or more of the following gear types used to catch lobster: **TRAPS/POTS** **DIVING GEAR** **TRAWL/DREDGES** **GILLNET**

B) If you fished traps in 2007, estimate the average value of one trap including warp and buoy: $ |_ _ _ _ _|

C) Indicate the type of traps by completing the percent of total that were fished in 2007:

1. Wood Framed |_ _ _ _|% 2. Wire Framed |_ _ _ _|% 3. Other _____ |_ _ _ _|%

D) If you dove for lobster in 2007, estimate the value of your diving gear and the percent used for catching lobsters:

Estimated Value of Diving Gear: $ |_ _ _ _ _| Percent Used for Catching Lobsters: |_ _ _ _| %

PORT(S) OF LANDING:

PLEASE FILL OUT THIS SECTION WHETHER OR NOT YOU USED A BOAT TO LAND YOUR LOBSTER.

Indicate the port(s) where you landed your catch. If you landed your catch in more than one port, estimate the percent of lobster landed at each port listed.

	PORT NAME	PERCENT
1.	_____	|_ _ _| %
2.	_____	|_ _| %
3.	_____	|_ _| %

SIGNATURE:_____ Date:_____

Knowingly falsifying any information contained within this report constitutes the act of perjury and may result in a fine, imprisonment or loss of license (MGL, Chapter 130, Sections 2, 21, 33).

COMPLETE BACK OF THIS FORM IF YOU CAUGHT LOBSTER IN 2007

Appendix 14

2007 COASTAL LOBSTER CATCH REPORT

VESSELS:

THIS SECTION SHOULD BE COMPLETED BY VESSEL OWNER OR PRINCIPAL USER ONLY. BE SURE TO INCLUDE TENDERS USED.

Power (Y/N)	Boat Name	Reg/Doc Number	Length (ft)	Home Port	Estimated Dollar Value of Vessel	Percent Used for Lobstering

FUEL:

Total gallons of fuel used for the year to catch lobster: Gasoline: |_____| Diesel: |_____|

TOTAL EMPLOYMENT:

Counting yourself, what was the **maximum** number of people fishing for lobster on your vessel at any one time in 2007? |__|

* For example, if you employed one sternman, you would answer two (2).

DEALERS SOLD TO:

Indicate the dealer(s) you sold your catch to. If you sold your catch to more than one dealer, estimate the percent of lobster sold to each dealer. **If you sold lobsters retail, be sure to indicate yourself as a dealer.**

	DEALER NAME	MA DEALER PERMIT #	PERCENT
1.	|_____|	|_____|	|__| %
2.	|_____|	|_____|	|__| %
3.	|_____|	|_____|	|__| %
4.	|_____|	|_____|	|__| %
5.	|_____|	|_____|	|__| %

HARVEST TABLE:

***** **IMPORTANT** *****

REFER TO MAP OF STATISTICAL REPORTING AREAS ON NEXT PAGE TO COMPLETE THE AREA(S) FISHED PORTION OF HARVEST TABLE

DO NOT INDICATE LMA'S (Lobster Management Areas) IN AREA(S) FISHED IN TABLE BELOW

		FILL IN SHADED AREA ONLY IF YOU USED TRAPS AS YOUR GEAR							REFER TO MAP OF STASTICAL REPORTING AREAS ON NEXT PAGE →→→→→→					
	GEAR USED TO HARVEST LOBSTER	MAX TRAPS FISHING	SET OVER DAYS	AVERAGE TRAPS HAULED PER TRIP WHEN FISHING	TOTAL TRIPS WHEN TRAPS HAULED	POUNDS HARVESTED			FIRST AREA FISHED	% OF CATCH	SECOND AREA FISHED	% OF CATCH	THIRD AREA FISHED	% OF CATCH
						LOBSTER SOLD	LOBSTER NOT SOLD*	CRABS						
EX.	*TRAPS*	*400*	*2*	*200*	*28*	*2240*	*60*	*0*	*5*	*75*	*7*	*25*		
JAN														
FEB														
MAR														
APR														
MAY														
JUN														
JUL														
AUG														
SEP														
OCT														
NOV														
DEC														
				TOTAL:										

* Lobster Not Sold includes any lobsters consumed or given away to family or friends

Appendix 14

2007 OFFSHORE LOBSTER CATCH REPORT

COMMONWEALTH OF MASSACHUSETTS
DIVISION OF MARINE FISHERIES
251 CAUSEWAY STREET, SUITE 101, BOSTON, MA 02114-2153

CATCH REPORT DUE DATE: JANUARY 31, 2008
PRINT IN INK ONLY
PLEASE REFER TO INSTRUCTIONS ON BACK PAGE WHILE COMPLETING THIS LOBSTER CATCH REPORT

PLEASE PRINT IN INK ONLY

IDENTIFICATION: DMF ID No: _____ Permit No: _____

Name as it appears on permit application: _____
(Last) (First) (MI)

Address: _____
(No.) (Street) (City/Town) (Zip Code)

Telephone Number: _____ Email: _____

CATCH STATUS & PARTNERSHIP INFORMATION:

A. If you **DID NOT CATCH** any lobster during 2007, check the box ☐ AND sign your name and date the report at bottom of this page and return it to the Division.

B. If you **DID CATCH** lobster during 2007, complete **BOTH SIDES** of this report as completely and accurately as possible. All lobster taken under this permit must be recorded on this report, even if taken incidentally

** **If you fished in conjunction with another permit holder in 2007, please report your catch and effort information separately** **

GEAR:

A) Circle one or more of the following gear types used to catch lobster: **TRAPS/POTS** **DIVING GEAR** **TRAWL/DREDGES** **GILLNET**

B) If you fished traps in 2007, estimate the average value of one trap including warp and buoy: $ |_ _ _ _ _|

C) Indicate the type of traps by completing the percent of total that were fished in 2007:

1. Wood Framed |_ _ _ _|% 2. Wire Framed |_ _ _ _|% 3. Other _____ |_ _ _ _|%

D) If you dove for lobster in 2007, estimate the value of your diving gear and the percent used for catching lobsters:

Estimated Value of Diving Gear: $ |_ _ _ _ _| Percent Used for Catching Lobsters: |_ _ _ _| %

PORT(S) OF LANDING:

PLEASE FILL OUT THIS SECTION WHETHER OR NOT YOU USED A BOAT TO LAND YOUR LOBSTER.

Indicate the port(s) where you landed your catch. If you landed your catch in more than one port, estimate the percent of lobster landed at each port listed.

	PORT NAME	PERCENT
1.	_____	|_ _ _| %
2.	_____	|_ _| %
3.	_____	|_ _| %

SIGNATURE:_____ **Date:**_____

Knowingly falsifying any information contained within this report constitutes the act of perjury and may result in a fine, imprisonment or loss of license (MGL, Chapter 130, Sections 2, 21, 33).

COMPLETE BACK OF THIS FORM IF YOU CAUGHT LOBSTER IN 2007

Appendix 14

2007 OFFSHORE LOBSTER CATCH REPORT

VESSELS:

THIS SECTION SHOULD BE COMPLETED BY VESSEL OWNER OR PRINCIPAL USER ONLY. BE SURE TO INCLUDE TENDERS USED.

Power (Y/N)	Boat Name	Reg/Doc Number	Length (ft)	Home Port	Estimated Dollar Value of Vessel	Percent Used for Lobstering

FUEL:

Total gallons of fuel used for the year to catch lobster: Gasoline: |_ _ _ _ _| Diesel: |_ _ _ _ _|

TOTAL EMPLOYMENT:

Counting yourself, what was the **maximum** number of people fishing for lobster on your vessel at any one time in 2007? |_ _ _|

* For example, if you employed one sternman, you would answer two (2).

DEALERS SOLD TO:

Indicate the dealer(s) you sold your catch to. If you sold your catch to more than one dealer, estimate the percent of lobster sold to each dealer. **If you sold lobsters retail, be sure to indicate yourself as a dealer.**

	DEALER NAME	MA DEALER PERMIT #	PERCENT
1.	|_____|	|_____|	|_ _| %
2.	|_____|	|_____|	|_ _| %
3.	|_____|	|_____|	|_ _| %
4.	|_____|	|_____|	|_ _| %
5.	|_____|	|_____|	|_ _| %

HARVEST TABLE:

***** **IMPORTANT** *****

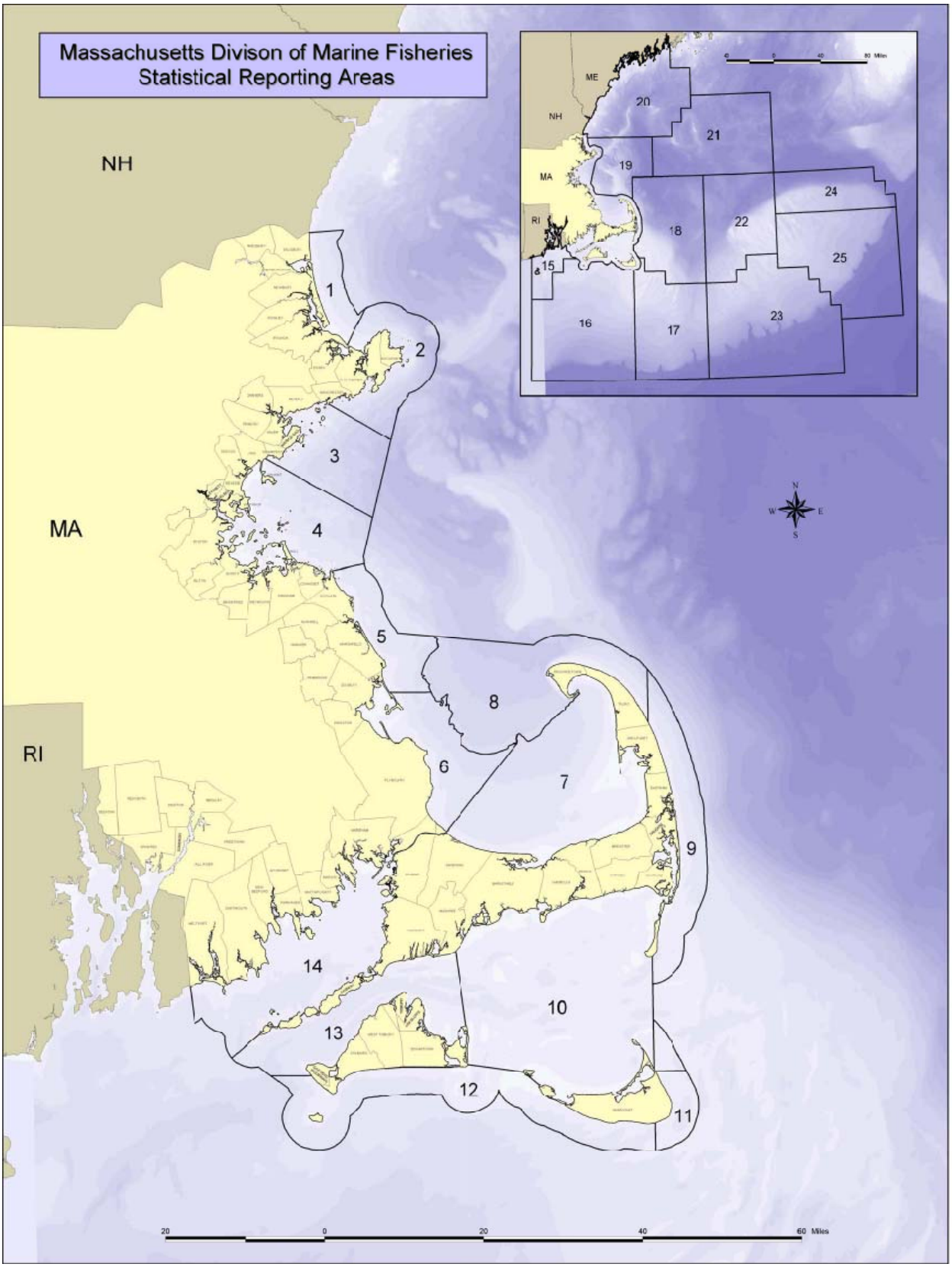
REFER TO MAP OF STATISTICAL REPORTING AREAS ON NEXT PAGE TO COMPLETE THE AREA(S) FISHED PORTION OF HARVEST TABLE

DO NOT INDICATE LMA'S (Lobster Management Areas) IN AREA(S) FISHED IN TABLE BELOW

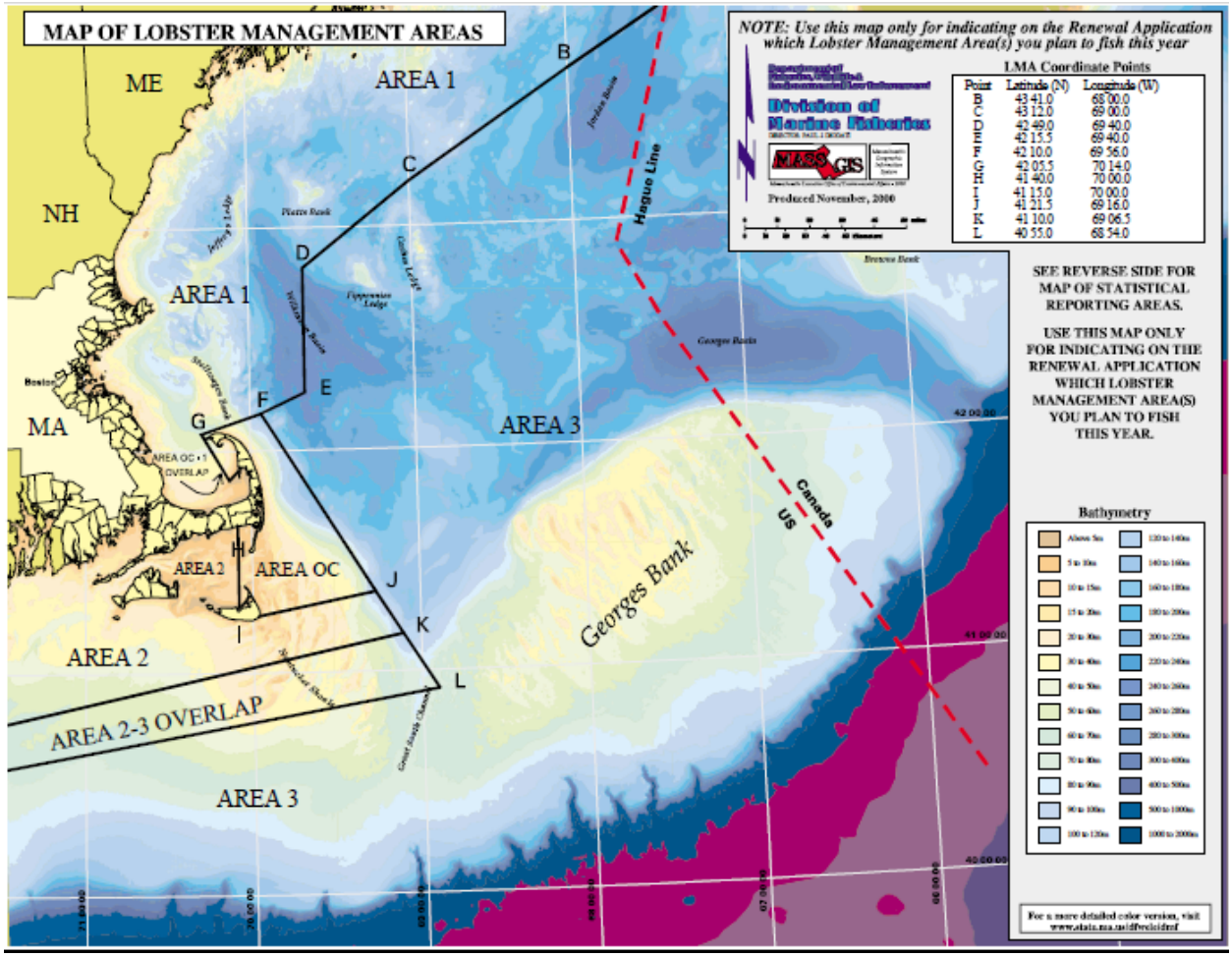
		FILL IN SHADED AREA ONLY IF YOU USED TRAPS AS YOUR GEAR							REFER TO MAP OF STASTICAL REPORTING AREAS ON NEXT PAGE →→→→→→					
	GEAR USED TO HARVEST LOBSTER	MAX TRAPS FISHING	SET OVER DAYS	AVERAGE TRAPS HAULED PER TRIP WHEN FISHING	TOTAL TRIPS WHEN TRAPS HAULED	POUNDS HARVESTED			FIRST AREA FISHED	% OF CATCH	SECOND AREA FISHED	% OF CATCH	THIRD AREA FISHED	% OF CATCH
						LOBSTER SOLD	LOBSTER NOT SOLD*	CRABS						
EX.	*TRAPS*	*400*	*2*	*200*	*28*	*2240*	*60*	*0*	*5*	*75*	*7*	*25*		
JAN														
FEB														
MAR														
APR														
MAY														
JUN														
JUL														
AUG														
SEP														
OCT														
NOV														
DEC														
				TOTAL:										

* Lobster Not Sold includes any lobsters consumed or given away to family or friends

Appendix 14


Massachusetts Divison of Marine Fisheries
Statistical Reporting Areas
NH
MA
RI
ME
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
N
S
E
W
20
0
20
40
60 Miles

Appendix 14


MAP OF LOBSTER MANAGEMENT AREAS
NOTE: Use this map only for indicating on the Renewal Application which Lobster Management Area(s) you plan to fish this year
Division of Marine Fisheries
Produced November, 2000
LMA Coordinate Points
Point Latitude (N) Longitude (W)
B 43 41.0 68 00.0
C 43 12.0 69 00.0
D 42 49.0 69 40.0
E 42 15.5 69 40.0
F 42 10.0 69 56.0
G 42 05.5 70 14.0
H 41 40.0 70 00.0
I 41 15.0 70 00.0
J 41 21.5 69 16.0
K 41 10.0 69 06.5
L 40 55.0 68 54.0
SEE REVERSE SIDE FOR MAP OF STATISTICAL REPORTING AREAS.
USE THIS MAP ONLY FOR INDICATING ON THE RENEWAL APPLICATION WHICH LOBSTER MANAGEMENT AREA(S) YOU PLAN TO FISH THIS YEAR.
Bathymetry
For a more detailed color version, visit www.state.ma.us/dfwele/dmf
ME
NH
MA
AREA 1
AREA 2
AREA 3
AREA OC
AREA 2-3 OVERLAP
Hague Line
US
Canada
Georges Bank
Boston
A
B
C
D
E
F
G
H
I
J
K
L

Appendix B. Tables 3a-c detail coastal lobster permit and trap reductions accomplished by the effort control plan in the Outer Cape Cod Lobster Management Area during its first year after implementation (2004). Tables 4a-c detail coastal lobster permit and trap reductions accomplished by the effort control plan in the Outer Cape Cod Lobster Management Area during its second year after implementation (2005). Tables 5a-b detail coastal lobster permit and trap reductions accomplished by the effort control plan in the Outer Cape Cod Lobster Management Area during its third year after implementation (2006). Tables 6a-c detail coastal lobster permit and trap reductions accomplished by the effort control plan in the Outer Cape Cod Lobster Management Area during its fourth year after implementation (2007). Table 7 details trap reductions accomplished by the effort control plan in the Outer Cape Cod Lobster Management Area during its fifth year after implementation (2008).

YEAR 2004

Table 3a. 2004 Permit transfers within the OCC.

Transaction #	Original Outer Cape Trap Allocation	Final 2004 Outer Cape Trap Allocation	Outer Cape Traps Eliminated
1	57	51	6
2	220	198	22
3	175	157	18
4	200	180	20
5	600	540	60
6	195	175	20
7	101	91	10
8	617	555	62
9	0	0	0
		Total =	**218**

Table 3b. Permits removed from the OCC either through non-renewal or transfer to another LCMA in 2004.

Transaction #	Fate of 13 permits who opted not to renewed in OCC LCMA:	Former Outer Cape Trap Allocation
1	Moved to LCMA 1	29
2	Did not renew	38
3	Moved to LCMA 2	10
4	Did not renew	5
5	Moved to LCMA 1	86
6	Moved to LCMA 1	60
7	Moved to LCMA 2	4
8	Moved to LCMA 2	60
9	Moved to LCMA 2	147
10	Moved to LCMA 1	5
11	Moved to LCMA 1	66
12	Moved to LCMA 1	361
13	Moved to LCMA 2	124
	Total =	**995**

Table 3c. 2004 OCC Trap Allocation transfers.

Transaction # *	Outer Cape Trap Allocation Transferred	Outer Cape Trap Allocation Received (minus 10% trap transfer tax)	Outer Cape Traps Eliminated
1	50	45	5
1	50	45	5
1	50	45	5
1	50	45	5
1	50	45	5
1	50	45	5
1	20	18	2
2	100	90	10
3	8	7	1
4	100	90	10
5	200	180	20
		Total =	**73**

*same # indicates multiple transfers from single permit holder.

Appendix 14

YEAR 2005

Table 4a. 2005 permit transfers within the OCC.

Transaction #	Original Outer Cape Trap Allocation	Final 2005 Outer Cape Trap Allocation	Outer Cape Traps Eliminated
1	50	45	5
		Total =	**5**

Table 4b. Permits removed from the OCC through revocation or non-renewal in 2005.

Transaction #	Traps Eliminated
1	800
2	31
Total =	**831**

Table 4c. 2005 OCC trap allocation transfers.

Transaction # *	Outer Cape Trap Allocation Transferred	Outer Cape Trap Allocation Received (minus 10% trap transfer tax)	Outer Cape Traps Eliminated
1	50	45	5
1	70	63	7
1	100	90	10
2	50	45	5
3	200	180	20
4	100	90	10
5	150	135	15
		Total =	**72**

*same # indicates multiple transfers from single permit holder.

YEAR 2006

Table 5a. 2006 Permit transfers within the OCC.

Transaction #	Original Outer Cape Trap Allocation	Final 2006 Outer Cape Trap Allocation	Outer Cape Traps Eliminated
1	600	540	60
		Total =	**60**

Table 5b. 2006 OCC trap allocation transfers.

Transaction # *	Outer Cape Trap Allocation Transferred	Outer Cape Trap Allocation Received (minus 10% trap transfer tax)	Outer Cape Traps Eliminated
1	100	90	10
1	350	315	35
2	50	45	5
3	100	90	10
		Total =	**60**

*same # indicates multiple transfers from single permit holder.

Appendix 14

YEAR 2007

Table 6a. 2007 Permit transfers within the OCC.

Transaction #	Original Outer Cape Trap Allocation	Final 2006 Outer Cape Trap Allocation	Outer Cape Traps Eliminated
1	100	90	10
2	63	57	6
		Total =	**16**

Table 6b. Permits removed from the OCC through non-renewal in 2007.

Transaction #	Traps Eliminated
1	0*
Total =	**0**

*traps transferred from offshore permit to coastal permit.

Table 6c. 2007 Outer Cape Trap Allocation transfers within OCC.

Transaction # *	Outer Cape Trap Allocation Transferred	Outer Cape Trap Allocation Received (minus 10% trap transfer tax)	Outer Cape Traps Eliminated
1	225	203	22†
2	350	315	35
		Total =	**57**

*same # indicates multiple transfers from single permit holder.

†10% trap transfer tax should have eliminated 23 traps, not 22.

YEAR 2008

Table 7. 2008 Outer Cape Trap Allocation transfers within OCC.

Transaction # (same # indicates multiple transfers from single permit holder)	Outer Cape Trap Allocation Transferred	Outer Cape Trap Allocation Received (minus 10% trap transfer tax)	Outer Cape Traps Eliminated
1	97	87	10
2	50	45	5
3	99	89	10
		Total =	**25**

APPENDIX C - RELEVANT REGULATIONS – 322 CMR

6.13 Lobster Trap Limit in the Coastal Waters of the Commonwealth

(1) Definitions. For the purposes of 322 CMR 6.13 the following words shall have the following meanings.

Effective Traps Fished means a value used in

(a) the Outer Cape Cod Trap Allocation Determination that was calculated in the assessment of each eligible fisherman's annual performance for the years 2000, 2001, and 2002. For each year that traps and landings were reported, Effective Traps Fished is the lower value of the maximum number of traps reported fished for the year and the predicted number of traps that is associated with the permit holder's reported poundage of lobsters for the year. The value for predicted number of traps was calculated based on a DMF published analysis of traps fished and pounds landed for the OCCLCMA and that relationship is depicted in Figure 1.

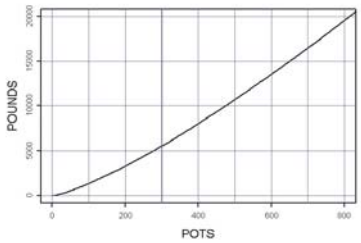


Figure 1. Relationship between pounds harvested and traps fished used to allocate Initial Trap Allocation. Data to calculate the relationship was obtained from catch reports from fishermen fishing primarily in OCCLCMA during years (1997-2001).

(b) the LCMA 2 Trap Allocation Determination that was calculated in the assessment of each eligible fisherman's annual performance for the years 2001, 2002, and 2003. For each year that traps and landings were reported, Effective Traps Fished is the lower value of the maximum number of traps reported fished for the year and the predicted number of traps that is associated with the permit holder's reported poundage of lobsters for the year. The value for predicted number of traps was calculated based on the Interstate Lobster Management Plan Addendum VII published by the Atlantic States Marine Fisheries Commission. That relationship is depicted in Figure 2.

Figure 2. Relationship between pounds harvested and traps fished used to allocate Initial Trap Allocation. Data to calculate the relationship was obtained from catch reports from fishermen fishing primarily in LCMA 2 during years (2001-2003).

(c) Exception. For coastal lobster permit holders who fished for lobster primarily by hand using SCUBA gear in a LCMA under control of an effort control plan, Effective Traps Fished means the annual predicted number of traps that is associated with the permit holder's reported poundage of lobsters during the performance years specified for a LCMA under control of an effort control plan as defined in 322 CMR 6.13(1)(a&b). The value for predicted number of traps was calculated based on a DMF published analysis of traps fished and pounds

landed for a LCMA and that relationship is depicted in Figures 1 & 2.

Fish means to set lobster traps on the ocean bottom.

LCMA 2 Trap Allocation means the number of traps assigned to a commercial lobster permit holder endorsed for LCMA 2 plus or minus any traps allocated through the trap transfer process outlined in 322 CMR 7.03.

Lobster means that species known as *Homarus americanus*.

Outer Cape Cod Trap Allocation. means the number of traps assigned to a coastal permit holder endorsed for the Outer Cape Cod Lobster Conservation Management Area (OCCLCMA) plus or minus any traps allocated through the trap transfer process outlined in 322 CMR 7.03.

(2) Eligibility for Trap Allocation.

(a) To be eligible for Trap Allocation in OCCLCMA, permit holders must have documented lawful fishing of lobster traps primarily in OCCLCMA during years 1999, 2000, or 2001. Any permit holder who held a permit endorsed for OCCLCMA during the years 1999, 2000, or 2001 but dropped OCCLCMA from their permit during a subsequent year is not eligible. Any permit holder who received their permit off the waiting list during 2001 and had no fishing performance in 2001 may appeal for an Initial Trap Allocation based on their 2002 fishing performance in OCCLCMA.

(b) To be eligible for Trap Allocation in LCMA 2, permit holders must have documented lawful fishing of lobster traps primarily in LCMA 2 during years 2001, 2002, and 2003. Any permit holder who held a permit endorsed for LCMA 2 during the years 2001, 2002, and 2003 but dropped LCMA 2 from their permit during a subsequent year is not eligible. Any permit holder who had no documented fishing performance during the years 2001-2003 due to documented medically-based inability or military service may appeal for an Initial Trap Allocation based on their 1999 and 2000 fishing performance in LCMA 2.

(c) Exception. Coastal Lobster permit holders who fished for lobster primarily by hand using SCUBA gear during the years of eligibility for a LCMA under control of an effort control plan as defined in 322 CMR 6.13(2) may be eligible for Trap Allocation in a LCMA based on documented lawful landings of lobster as provided for in 322 CMR 6.13(1)(c) & (3).

(3) Trap Allocation Determination.

(a) Outer Cape Cod

1. Initial Trap Allocation shall be the highest value of Effective Traps Fished for each permit holder during the period 2000 though 2002. The Director may lower a permit holder's Initial Trap Allocation if the permit holder failed to purchase and use valid trap tags for any year used in the allocation determination or if after a DMF audit the values for traps fished or poundage are determined to be incorrect.

2. Trap Allocation shall be adjusted annually based on any Trap Allocation transfers approved by the Director pursuant to 322 CMR 7.03.

(b) LCMA 2

1. Initial Trap Allocation shall be the highest value of Effective Traps Fished for each permit holder during the period 2001 though 2003. The Director may lower a permit holder's Initial Trap Allocation if the permit holder failed to purchase and use valid trap tags for any year used in the allocation determination or if after a DMF audit the values for traps fished or poundage are determined to be incorrect.

2. Trap Allocation shall be adjusted annually based on any Trap Allocation transfers approved by the Director pursuant to 322 CMR 7.03.

(4) Trap Limitation. It is unlawful for any person with a commercial lobster permit endorsed for:

(a) LCMA 1 to fish more than 800 lobster traps at any one time in LCMA 1;

(b) LCMA 2 to fish more than their trap allocation approved by the Director subject to trap allocation regulations established by 322 CMR 6.13;

(c) LCMA 3 to fish more traps than their allocation approved by NOAA Fisheries and the Director consistent with the interstate plan; or

(d) OCCLCMA to fish more than their trap allocation as approved by the Director subject to trap allocation regulations established by 322 CMR 6.13.

(5) Vessel Limitation. The trap limit established by 322 CMR 6.13(2), shall apply to any vessel involved in the coastal commercial lobster fishery, regardless of the number of fishermen holding

coastal commercial lobster permits on board said vessel.

(a) Commercial Lobster Permits Endorsed for LCMA 1, 2 or the OCCLCMA. It shall be unlawful to fish more than 800 traps aboard any vessel involved in the offshore commercial lobster fishery in LCMA 1, 2, or OCCLCMA or the coastal commercial lobster fishery, regardless of the number of fishermen holding coastal or offshore commercial lobster permits on board said vessel.

(b) Commercial Lobster Permits Endorsed for LCMA 3. It shall be unlawful to fish more than the allocation approved by NOAA Fisheries and the Director consistent with the interstate plan aboard any vessel involved in the offshore commercial lobster fishery in LCMA 3, regardless of the number of fishermen holding offshore commercial lobster permits on board said vessel.

6.33 Lobster Management Areas

(1) Definitions.

(a) Lobster Management Area means one of three Recreational Lobster Areas or one of seven Lobster Conservation Management Areas (LCMA) as specified in the Atlantic States Marine Fisheries Commission American Lobster Fishery Management Plan (FMP) and endorsed on the Massachusetts Commercial Fisherman Permit pursuant to 322 CMR 6.31.

(2) Area Boundaries.

(a) LCMA 1. Beginning at the Massachusetts/New Hampshire border, following the outer boundary of the territorial waters of New Hampshire and Maine to the US/Canada border, thence to the intersection of LORAN C 9960-Y-44400 with the boundary of the US Exclusive Economic Zone, thence to the intersection of 9960-Y-44400 with 70 [degrees] West Longitude, thence following the 70th meridian to its intersection with 9960-W-13700, thence following 9960-W-13700 to its intersection with 9960-Y-44120, thence following 9960-Y-44120 westerly to its intersection with 9960-W-13850, thence following 9960-W-13850 southeasterly to its intersection with 9960-Y-44110, thence following 9960-Y-44110 easterly to Race Point in Provincetown, thence following the MA shoreline back to the beginning.

(b) Outer Cape LCMA. Beginning at Race Point in Provincetown, following 9960-Y-44110 westerly to its intersection with 9960-W-13850, thence following 9960-W-13850 northwesterly to 9960-Y-44120, thence following 9960-W-44120 easterly to its intersection with 9960-W-13700, thence following 9960-W-13700 southerly to 9960-Y-43780, thence following 9960-Y-43780 westerly to its intersection with 70 [degrees] five minutes West Longitude, thence following 70 [degrees] five minutes West Longitude north through Nantucket Island to the shoreline of Harwich, thence following the shoreline of Cape Cod east and north back to the beginning.

(c) Overlap- Area 1/OCLMA. Beginning at Race Point in Provincetown, following 9960-Y-44110 westerly to its intersection with 9960-W-13850, thence following 9960-W-13850 southeasterly to its intersection with 9960-X-25330, thence following 9960-X-25330 northeasterly to the shoreline of Great Island in Wellfleet, thence following the shoreline northerly back to the beginning.

Fishermen endorsed for either LCMA 1 or OCLMA may fish in the overlap zone under the rules of the area(s) endorsed on their permits. Fishermen with both areas endorsed must observe the most restrictive rules.

(d) Overlap- Area 1/Area 2. The Cape Cod Canal, from the Massachusetts Maritime Academy pier at the southern end to the end of the east breakwater on the northern end.

Fishermen from either LCMA 1 or LCMA 2 may fish in the overlap zone under the rules of the area(s) endorsed on their permits. Fishermen with both areas endorsed must observe the most restrictive rules.

(e) LCMA 2. Beginning at the shoreline of Harwich, following the 70 [degrees] five minutes West Longitude south through the Island of Nantucket to its intersection with 9960-Y-43780, thence following 9960-Y-43780 easterly to its intersection with 9960-W-13700, thence following 9960-W-13700 southerly to its intersection 9960-W-14610, thence following 9960-14610 northerly to the outer boundary of New York territorial waters, thence following the outer boundary of the territorial waters of New York and Rhode Island to the Massachusetts/Rhode Island boundary, thence following the Massachusetts/Rhode Island boundary to the shoreline, thence following the shoreline of Massachusetts back to the beginning.

(f) LCMA 3. All waters of the Exclusive Economic Zone (EEZ) of the United States seaward of LCMA 1, OC, 2, 4, 5, and 6.

(g) Overlap Area 2/Area 3. Fishermen from either Area 2 or Area 3 may fish in an area bounded as follows under their respective LCMA rules: Beginning at the intersection of 9960-W-13700 and 9960-Y-43700, thence westerly along the 43700 line to the intersection with 9960-W-14610, thence southwesterly along a line whose extension reaches the intersection of 9960-Y-43500 with 9960-X-26400 to 9960-Y-43600, thence easterly along the 43600 line to 9960-W-13700, thence northwesterly along the 13700 line to the beginning.

(h) LCMA 4. All waters including state and federal waters that are near-shore in the northern Mid-Atlantic area, as defined by the area bounded
by straight lines connecting the following points:

Point	LATITITUDE (ºN)	LONGITUDE (ºW)
M	40º 27.5’	72º 14’
N	40º 45.5	71º 34’
O	41º 07’	71º 43’
P	41º 06.5’	71º 47’
S	40º 58’	72º 00’
T	41º 00.5’	72º 00’
From pt. “T”, along the NY/NJ coast to pt. “W”		
W	39º 50’	74º 09’
V	39º 50’	73º 01’
U	40º 12.5’	72º 48.5’
From pt. “U” back to pt. “M”.		

(i) LCMA 5. All waters including state and federal waters that are near-shore in the southern Mid-Atlantic area, as defined by the area bounded by straight lines connecting the following points, in the order stated:

Point	LATITITUDE (ºN)	LONGITUDE (ºW)
W	39º 50’	74º 09’
V	39º 50’	73º 01’
X	38º 39.5’	73º 40’
Y	38º 12’	73º 55’
Z	37º 12’	74º 44’
ZA	35º 34’	74º 51’
ZB	35º 14.5’	75º 31’
From pt “ZB”, along the coasts of NC/VA/MD/DE/NJ back to pt. “W”.		

(j) LCMA 6. All state waters as defined by the area bounded by straight lines connecting the following points, in the order stated:

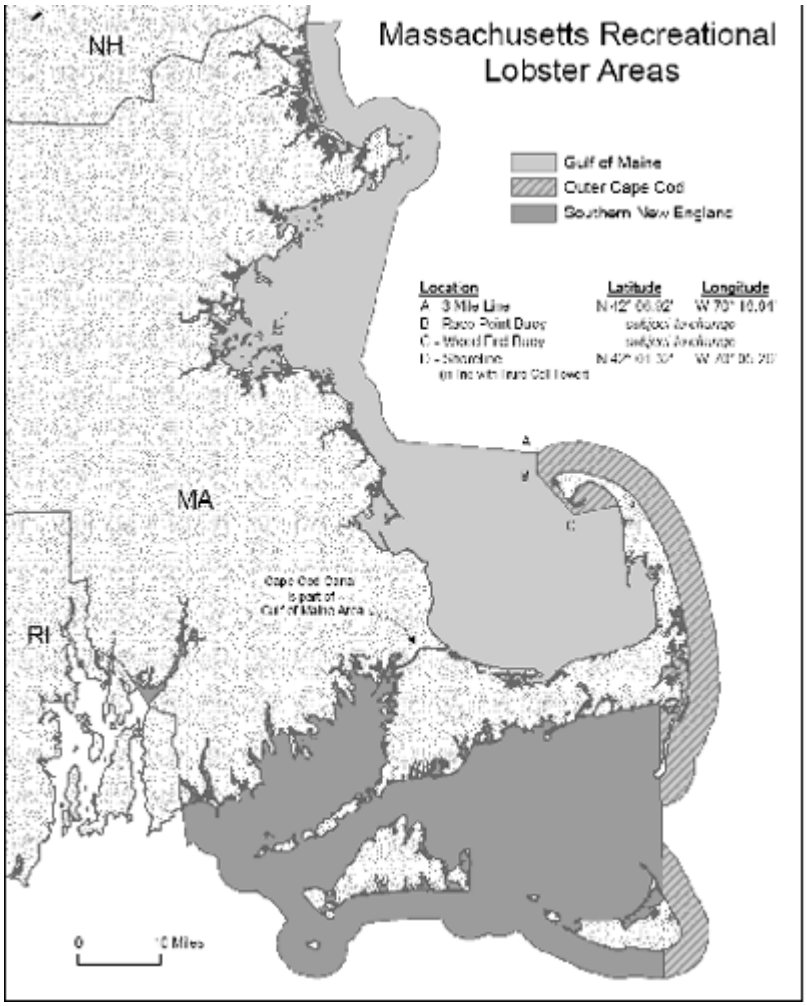
Point	LATITITUDE (ºN)	LONGITUDE (ºW)
T	41º 00.5’	72º 00’
S	40º 58’	72º 00’
From pt. “S”, boundary follows the 3 mile limit of NY state waters as it curves around Montauk Pt. To pt. “P”		
P	41º 06.5’	71º 47’
Q	41º 18’ 30”	71º 54’ 30”
R	41º 11’ 30”	71º 47’ 15”
From pt. “R”, along the maritime boundary between CT & RI to the coast; then west along the coast of CT to the western entrance of Long Island Sound; then east along the NY coast of Long Island Sound and back to pt. “T”.		

(k) Gulf of Maine Recreational Lobster Area means those state waters north of Cape Cod Bay to the New Hampshire border including waters of the Cape Cod Canal.

(l) Outer Cape Cod Recreational Lobster Area means all state waters eastward of 70 degrees longitude off Nantucket and eastward and northward of Outer Cape Cod from Chatham to Provincetown’s Race Point, including a portion of upper Cape Cod Bay as defined by a line drawn from the three nautical mile line northwest of race Point at 42 degrees 7 minutes latitude and 70

degrees 16 minutes longitude south to the Race Point Buoy then southeast to the Wood End Buoy and east to the shoreline at 42 degrees 01.32 minutes latitude and 70 degrees 05.26 minutes longitude.

(m) Southern New England Recreational Lobster Area means those state waters west of 70 degrees and south of Cape Cod.



7.03 Coastal Lobster Permit & Trap Allocation Transfer Programs

(1) Purpose and Scope. The purpose of 322 CMR 7.03 is to regulate the number of lobster traps on a regional and individual basis to prevent over-fishing within each Lobster Conservation Management Area (LCMA) managed by the Commonwealth through the ASMFC, and to establish a process to enable the transfer of existing commercial lobster permits and traps pursuant to M.G.L. c. 130, § 38B, and St. 1992 c. 369.

The American lobster fishery is the state's most economically important fishery conducted within the territorial waters. To meet conservation goals of the interstate plan specific to the nearshore waters around eastern Cape Cod and southern New England, the Outer Cape Cod Lobster Conservation Management Area (OCCLCMA) and Lobster Conservation Management Area 2 (LCMA 2) were developed, respectively. The following regulation (322 CMR 7.03) details the effort control plans for the OCCLCMA and LCMA 2 comprised of trap limit programs and transfer programs as well as the transfer regulations for the remainder of the coastal lobster fishery conducted in LCMA 1.

The transfer program for the coastal lobster fishery conducted in LCMA 1 allows permit holders to transfer their permits along with lobster related business assets under the historical transfer criteria

developed for the coastal lobster fishery. Beginning in 2004, the only permit transfers allowed between LCMAs are those involving the transfer of a permit to an LCMA under management of an effort control plan. This will enable commercial fishermen to retain the maximum flexibility in the conduct of their businesses while ensuring conservation goals of any area-specific effort control plans are not compromised by increases in traps fished.

(2) Definitions. For the purposes of 322 CMR 7.03 the following words shall have the following meanings

(a) Actively Fished means landing and selling at least 1,000 lbs. of lobster or landing and selling lobster on at least 20 occasions, in a single year.

(b) Allocation Transferee means the holder of a commercial lobster permit to whom a transfer of trap allocation is made.

(c) Permit Holder means a holder of a coastal commercial lobster permit endorsed for either LCMAs 1, 2 or OCC.

(d) Permit Transferee means the person to whom a commercial lobster permit is transferred who must document that he/she has at least one year of full-time or equivalent part-time experience in the commercial lobster trap fishery or two years of full-time or equivalent part-time experience in other commercial fisheries, according to criteria developed by the Division.

(e) Transfer Trap Debit means the area-specific percentage of each allocation transfer transaction retained by the Division for conservation purposes as defined by the Division and subject to criteria developed by the Division, and not restricted by the Director under his authority to condition permits.

(3) Renewals.

(a) The Director shall renew all existing Coastal Commercial Lobster Permits in accordance with M.G.L. c.130, § 38B, and 322 CMR 7.01(2)(a) and (5)(f), provided that catch reports and renewal applications are received by February 28 and the renewal process, including late renewals approved for sufficient cause, is completed prior to December 31st of any year.

(b) All Coastal Lobster and Offshore Lobster Permit holders must declare the ASMFC Lobster Conservation Management Area(s) as defined in 322 CMR 6.33 in which they will fish during that license year when renewal forms are submitted.

(c) Coastal Lobster Permit holders are prohibited from multiple LCMA endorsements, except those commercial lobster permits held by persons with valid federal authorization for LCMA 3 who may additionally receive authorization for either LCMA 1, 2 or Outer Cape Cod or those commercial lobster permit holders not fishing with trap gear who may additionally receive authorization for LCMA 1, 2, or Outer Cape Cod.

(d) Those authorized for more than one LCMA as designated on their permits shall observe the most restrictive of different regulations for the areas declared as established by 322 CMR and the ASMFC Lobster Management Plan.

(e) Coastal Lobster Permit holders are prohibited from making changes in area designations during the annual renewal period except to drop a LCMA or to add a LCMA under management of an approved effort control plan for which the permit holder has received a LCMA-specific trap allocation.

(4) Forfeiture. All Coastal Lobster Permits which are not renewed in accordance with 322 CMR 7.03 shall be forfeited to the Division. The Director may transfer, in order, no more than 50% of the forfeited permits to waiting list applicants.

(5) Transfer Programs.

(a) OCC Transfer Program is administered by the Division. Applications for transfers shall be provided by the Division, must be signed by the permit holder and the allocation or permit transferee, and must be notarized prior to submission to the Division. No applications may be accepted after November 30 for the following fishing year. Commercial lobster permit holders endorsed for Outer Cape Cod may:

1. transfer their commercial lobster permit involving the sale or transfer their entire trap allocation;

2. transfer all of their trap allocation to an allocation transferee ; or

3. in compliance with 322 CMR 7.03(9)(d), transfer part of their transferable allocation in multiples of 50 traps to an allocation transferee.

(b) LCMA 2 Transfer Program is administered by the Division. Applications for transfers shall be

provided by the Division, must be signed by the permit holder and the allocation or permit transferee, and must be notarized prior to submission to the Division. No trap allocation transfer applications may be accepted after November 30 for the following fishing year. Commercial lobster permit holders endorsed for LCMA 2 may:

1. transfer their commercial lobster permit involving the sale or transfer their entire trap allocation;
2. transfer all of their trap allocation to an allocation transferee ; or
3. transfer part of their transferable allocation in multiples of 50 traps to an allocation transferee.

(c) LCMA 1 Transfer Program enables commercial lobster permit holders endorsed for LCMA 1 to transfer their permits to a permit transferee, provided the permit has been actively fished for four of the last five years, as evidenced by valid catch reports filed with the Division, subject to criteria developed by the Division, and is not restricted by the Director under his authority to prohibit transfers. The transfer program is administered by the Division. Applications for transfers shall be provided by the Division, must be signed by the permit holder and the transferee, and must be notarized prior to submission to the Division. Commercial lobster permit holders endorsed for LCMA 1 may transfer their commercial lobster permit involving the sale or transfer of lobster related business assets to a permit transferee.

(6) Restrictions.

(a) Transfers shall involve the sale or transfer of lobster related business assets.

(b) Permit and allocation transfers may be denied if any evidence of fraud is found, or the Director determines that the transfer is not in the best interests of the Commonwealth.

(c) All lobster businesses fishing under the authority of a coastal lobster permit as defined in 322 CMR 7.01(2)(a) shall be owner-operated.

(d) Trap Allocation transfers may be subject to a transfer trap debit of 10% of the total amount of traps transferred through the trap transfer process.

(e) Any permit holder authorized to fish traps in OCCLMA or LCMA 2 who transfers a portion of their Trap Allocation resulting in the Allocation totaling less than 50 traps shall have their permit retired immediately.

(f) Any permit holder issued a trap allocation based in part or whole upon SCUBA history as determined in 322 CMR 6.13 shall be prohibited from transferring any part of their trap allocation except when transferring their commercial lobster permit.

(g) Any permit holder issued a trap allocation based in part or whole upon SCUBA history as determined in 322 CMR 6.13 shall be prohibited from transferring their trap allocation along with their commercial lobster permit until the permit has been actively fished for four of the last five years as evidenced by valid catch reports filed with the Division, subject to criteria developed by the Division, and not restricted by the Director under his authority to prohibit transfers. Catch history prior to the issuance of a trap allocation shall not apply towards fulfilling meeting actively fished requirements.

(7) Exceptions.

(a) Performance criteria for permit holders as established by 322 CMR 7.03(2) may be waived for the following reasons:

1. documented disability of the permit holder, provided that the permit holder fished during at least four of the five years immediately preceding the disability as evidenced by catch reports, and provided further that a signed statement by a physician verifies the disability precludes the permit holder from fishing.
2. for the purposes of transferring a permit to an immediate family member, including transfers involving the death of the permit holder. Immediate family member shall mean the legal father, mother, wife, husband, sister, brother, son, daughter, or grandchild of the permit holder in the direct line.

(b) Performance criteria established by 322 CMR 7.03 shall be waived for forfeited permits issued to waiting list applicants.

(c) The requirement that permit holders be owner/operators may be waived through a letter of authorization issued by the Director that is subject to annual renewal. Letters of authorization may be granted for use of the permit and associated fishing operation that includes the gear and vessel

owned by the permit holder that was actively fished prior to the request. Authorizations may be issued for permit holders on active military service or for immediate family members. For the recipient of a posthumous transfer, or disabled permit holder, authorizations may be issued for up to two years, provided the disability prevents the permit holder from fishing their permit as evidenced by a signed statement from a physician.

(d) The requirement that allocation transfers involve multiples of 50 traps may be waived for permit holders who transfer all of their transferable allocation.

(8) Waiting List. Persons on the established waiting list for Coastal Commercial Lobster Permits must reapply to hold their relative positions on the list prior to August 1, 1993, after which the list will be closed. Persons who can document, to the satisfaction of the Director, that, due to unforeseen circumstances, they were unable to reapply before the list closure date may be reinstated to the bottom of the waiting list.

(9) Prohibitions. It shall be unlawful:

(a) To loan, lease, or sell a Coastal Commercial Lobster Permit except under the provisions of 322 CMR 7.03.

(b) To submit false or incomplete forms or applications according to the provisions of M.G.L. c. 130, § 38B.

(c) for the holder of a Coastal Commercial Lobster Permit to acquire an additional permit(s) through a transfer pursuant to 322 CMR 7.03 or from the established waiting list.

(d) for a Permit Holder to retain a trap allocation equal to less than 50 traps after they have transferred part of their trap allocation to another permit holder or a trap allocation greater than 800 traps after they receive a trap allocation from another permit holder;

(e) for allocation transfers to involve the transfer of traps outside of the specific LCMA for which the trap allocation is designated;

(f) to transfer a commercial lobster permit endorsed for traps from one LCMA to another LCMA unless the permit is transferred to an LCMA under management of an approved effort control plan for which the permit holder has received an LCMA-specific trap allocation.

APPENDIX D – NOTIFICATION TO PERMIT HOLDERS QUALIFIED FOR ADDITIONAL TRAP ALLOCATION BASED ON SCUBA GEAR

August 16, 2007

<Name>
<Address>
<Address>

Dear <Name>,

At an August 2nd business meeting the Marine Fisheries Advisory Commission (MFC) approved criteria for transferring SCUBA-based effort in the directed lobster fishery to trap-based effort in those Lobster Conservation Management Areas under management of an effort control plan, LCMA 2 and Outer Cape Cod (322 CMR 6.13 & 7.03). In the Outer Cape, this action allows SCUBA divers to be eligible for a trap allocation based on the poundage–based formula to calculate "effective traps fished" during 2000 through 2002.

Based on the 2000 through 2002 catch reports on file at *MarineFisheries*, you are eligible to receive an Outer Cape Lobster Management Area (OCLCMA) trap allocation of ### for commercial lobster permit # ----, DMF ID # ----. This allocation replaces any previous allocation you may have received.

Please note that the new regulations also restrict your ability to transfer your trap allocation. To prevent a "doubling" of effort that might occur if a SCUBA diver transfers their trap allocation but continues to dive for lobsters, permit holders who receive trap allocations based upon SCUBA history will be limited to transferring their entire trap allocation as a block with their permit (i.e., they cannot transfer just increments of their trap allocation). Furthermore, permit transfers will be prohibited until a permit has been actively fished with traps in four of the last five years, excluding catch history prior to the issuance of trap allocations.

Questions regarding your trap allocation may be directed to Melanie Griffin at 617.626.1528 or me at 617.626.1536. If you have questions regarding trap tags or trap transfers, you can contact Jeanne Shaw Hayes at 617.626.1531.

Sincerely,

Dan McKiernan

Deputy Director

Appendix 15

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

APR 11 2008

John V. O'Shea, Executive Director
Atlantic States Marine Fisheries Commission
1444 Eye Street, N.W., 6th Floor
Washington, D.C. 20005

Dear Mr. O'Shea,

I am writing to comment on draft Addendum XII to Amendment 3 to the Commission's Interstate Fishery Management Plan (ISFMP) for American Lobster. NOAA's National Marine Fisheries Service (NMFS) would like to commend the Commission for the effective coordination and participation of industry and State management staff to draft this document. Draft Addendum XII serves to highlight several issues, including the critical need to establish and fund a centralized database to monitor lobster permit and trap allocation transfers, and respond in a unified way to the issues that would arise when fishing privileges are transferred or when individual trap allocations are transferred as part of a multi-jurisdictional trap transferability program.

NMFS personnel attended public hearings in Rhode Island, New Hampshire, Massachusetts, and Maine on draft Addendum XII. Although draft Addendum XII is one of the more comprehensive and detailed addenda thus far proposed by the Commission, NMFS remain concerned over one important aspect of the addendum, the establishment of a centralized database. It remains largely conceptual and critical logistics on funding, access, and accountability remain to be worked out. As noted in the document, despite the overall similarity of the various Lobster Conservation Management Area-specific (LCMA) effort control plans, administration of similar, but not identical, plans involving potential regulations by twelve states and NMFS, is obviously complex. Due to the intricacy of the effort control plans, we reiterate our position that establishment of a central database to monitor lobster permit and trap allocation transfers is a critical necessity prior to Federal implementation of the various multi-jurisdictional trap transferability programs. NMFS fully commits to work with the Commission and impacted states to help establish this database. But, since associated logistics are still in a formative stage, it may not be possible to quickly develop and populate the database consistently across multiple jurisdictions, or with 100% effectiveness, in the timeframe envisioned by many lobstermen that testified at the public hearings. Accordingly, although we hope the necessary logistics can be quickly accomplished, I believe we should be cautiously realistic in our expectations regarding the implementation of the various LCMA-specific trap transferability programs. As noted in the addendum, until a central database is operational and NMFS implements compatible Federal regulations, we will be unable to recognize partial transfers of LCMA-specific trap allocations, or the application of a conservation reduction surcharge (trap conservation tax) on the transfer of Federal lobster permits.

NMFS review of a component of draft Addendum XII, specifically the Commission's Most Restrictive Rule, Option A - Status Quo (Section 4.2.1), indicates this approach may conflict with the stated objectives of the various LCMA-specific effort control plans (to cap effort at or near historic levels), by proposing a mechanism to activate what might be considered latent effort. Option A, the Commission's

most restrictive rule, as approved by the Commission in Addendum IV to the ISFMP, may allow the number of traps fished to increase over existing levels, depending on what LCMA a fisherman chooses to elect on their permit. As the Commission noted in the document, this potential for an increase in effort may be problematic since the latest stock assessment suggested that the Southern New England stock is overfished and that fishing effort needs to decrease or be constrained in all lobster stock areas.

One other concern relates to Section 4.4, "The Effect of Permit & Trap Allocation Transferability on LCMAs without History-based Allocations (currently LCMA 1)." In Option B (Section 4.4.2) and Option C (Section 4.4.3), either the buyer, or both the buyer and seller of transferable traps would be ineligible to fish in the Federal waters of LCMA 1 in the future, once any of the sellers' transferable traps are sold. While the document indicates the intent of these options is to prevent future effort shift into (the Federal waters of) LCMA 1 from other transferable trap LCMAs, there are a number of current LCMA 1 lobstermen that also have allocations in other LCMAs, including LCMA 3. As written, these options (B and C) would appear to deny future access to fish with traps in LCMA 1 for lobstermen that may exclusively or primarily fish with traps in LCMA 1. NMFS would recommend, prior to approval of Addendum XII, wording in the document clarify whether or not lobstermen that actively fish in LCMA 1, and also have transferable traps in another LCMA, would be prohibited from future access into LCMA 1 if all or a part of their transferable trap allocation in another LCMA is sold.

Assuming we can find an acceptable approach to assign fishing history and individual trap allocations as part of a trap transferability program, the respective jurisdictions should be able to implement independent, yet congruent LCMA-specific effort control plans. However, while Addendum XII represents a significant step forward, it is unlikely to rectify all of the inter-jurisdictional trap transferability coordination problems. I continue to have concerns, as noted in my letter to you dated April 23, 2007 (attached), that variations in how the states interpret and implement the effort control measures in Addendum XII and earlier addenda may continue to be an issue. NMFS may face challenges to move forward with federal regulations that are complementary to respective state regulations when the respective state regulations may be at odds with one another. We hope that passage of Addendum XII will establish uniform principles and criteria that are acceptable and appropriate for the Federal Government as well as the States.

Resolution of the complex issues associated with the various effort control plans addressed in this draft addendum will facilitate our collective efforts to move towards the goal of having one plan for the American lobster throughout its range. If you wish to discuss any of these comments in further detail, please do not hesitate to contact me or Harold Mears of my staff at 978-281-9300.

Sincerely,

Patricia A. Kurkul
Regional Administrator

Appendix 15

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

NOV 29 2008

John V. O'Shea, Executive Director
Atlantic States Marine Fisheries Commission
1444 Eye Street, N.W., 6th Floor
Washington, DC 20005

Dear Mr. O'Shea,

This letter provides NOAA's National Marine Fisheries Service (NMFS) comments on draft Addendum XII to Amendment 3 to the Atlantic States Marine Fisheries Commission's (Commission) Interstate Fishery Management Plan (ISFMP) for American Lobster. As you know, the latest version of this draft Addendum reflects many months of coordinated effort by members of the Lobster Inter-jurisdictional Transferable Trap (ITT) Subcommittee to reach general consensus on several complex and precedent-setting issues that have far-reaching significance for both state and Federal lobster management, including the establishment of ITT programs in Areas 2, 3, and the Outer Cape, and the application of the Most-Restrictive Rule for the commercial lobster fishery.

Given our interest to support state-Federal consistency in lobster management and our responsibilities under the Atlantic Coastal Fisheries Cooperative Management Act (ACA) to implement regulations that are compatible with the relevant coastal states, NMFS appreciates the opportunity to work with the Commission on these important issues. As we have consistently stated in our past comments on this subject, NMFS believes that resolution of the issues identified in Addendum XII is crucial to the effective inter-jurisdictional administration and management of the ITT programs previously approved by the Commission.

In that respect, we would like to commend the Commission's support, as reflected in Section 4.2.2 of the current draft Amendment XII, to identify Option B under the Most-Restrictive Rule as the preferred option, which would effectively support current Federal regulations governing commercial trap allocations. As you know, NMFS expressed concerns in our previous comments on this issue that Option A under the Most Restrictive Rule, as identified in Section 4.2.1., is a less-restrictive interpretation of the Most Restrictive Rule that could result in increased fishing effort and adversely impact the goals of the effort control plans for the Southern New England lobster stock, which are under stress from overfishing.

Clearly significant progress has been made with regard to the current draft, nonetheless, we note that issues remain and, while approval of Addendum XII is an important step forward, it is not the final step in this process. As NMFS proceeds with its effort to develop and implement compatible ITT regulations, inconsistencies in the approach taken

by the states to implement these effort control programs will continue to challenge NMFS' ability to effectively implement and administer an inter-jurisdictional trap transferability program. Therefore, we look forward to continued Commission support as NMFS moves forward with the development of Federal regulations to ensure inter-jurisdictional compatibility and achievement of the ISFMP objectives.

Finally, given the well-recognized complexities of the multi-jurisdictional effort control plans for American lobster and the added challenges that inter-jurisdictional trap transfers would present, we again restate our position that funding of a central database to monitor and administer lobster permit and trap allocation transfers across jurisdictions continues to be critical to successful implementation. We note that this view is supported in the testimony of both the Industry Advisory Panel and the ITT Subcommittee. In this regard, we commend the ACCSP for its commitment, at the October 2008 Annual Meeting, to fund the initial development of a central database, and we encourage the Commission to continue its efforts to identify a viable long-term funding mechanism for ongoing maintenance and operation of this database.

NMFS remains committed to the ongoing efforts of our respective organizations to resolve these concerns as we strive to implement compatible management measures for the American lobster throughout its range. Please feel free to contact me or Harold Mears of my staff at 978-281-9300 if you have any questions or comments.

Sincerely,

for Patricia A. Kurkul
Regional Administrator

Appendix 16

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

APR 23 2007

John V. O'Shea, Executive Director
Atlantic States Marine Fisheries Commission
1444 Eye Street, N.W., 6th Floor
Washington, D.C. 20005

Dear Vince,

I am writing to comment on the American lobster history based effort control plan for Lobster Conservation Management Area 2. The Area 2 implementation issues are difficult and reflect the challenges facing this fishery. Last October, you provided information on the analytical methods used as the basis for proposed trap limits and associated logistics for a program that would allow the transfer of trap gear allocations among qualified participants in the Southern New England waters of Area 2. The most recent modifications to that program were adopted by the Commission in October 2005 through approval of Addendum VII to Amendment 3 of the Interstate Fishery Management Plan (ISFMP) for American Lobster.

That addendum recommended that the federal government promulgate complementary regulations to be consistent with those of the participating states. As the National Marine Fisheries Service continues the development of this federal rulemaking, we are concerned over the continuing disparity among the qualification and associated appeal procedures being used by the States, particularly between Massachusetts and Rhode Island, the "home states" for the majority of Federal lobster permits that have since 2000 been authorized to harvest lobster with traps in the federal water portion of Area 2. As we have indicated in the past, Federal lobster regulations do not distinguish based upon an individual's state citizenship. Our objective is to identify a "one standard" approach that would comply with the legislative requirements to be consistent with the national standards set forth in the Magnuson-Stevens Act, and at the same time, be consistent with the effective implementation of the Interstate Plan. Given the present situation, however, it is particularly difficult for us to move forward with federal regulations that are complementary to respective state regulations when the respective state regulations are themselves at odds with one another.

The problem is not a simple one; uniformity is a difficult and complex task given the multiple jurisdictions involved in lobster management. We understand the difficulties and acknowledged the challenges not only during several subsequent Lobster Board meetings following the addendum's approval, but even in our comments to the Lobster Conservation Management Team when the present plan was in its infancy. State/Federal consistency is particularly fundamental

in the implementation of a limited access program based upon fishing history, such as has been proposed in Area 2, where that single fishing history was often established under a dual state and federal permit. This dilemma, at least in part, was recognized by Addendum VII in Section 4.1.1.1(a) that stated there should be a moratorium on permit splitting accomplished through the "...establishment of a new state/federal licensing scheme...".

Unfortunately, however, there has been no real resolution to many of the core issues in Addendum VII. Certain progress is being made – NMFS staff are assisting in the drafting of a Commission white paper on permit history and transferability issues – but that progress has been slow and far outpaced by the speed in which the states are implementing the Addendum. Presently, the seeming disconnect between unresolved core issues and state implementation of Addendum VII is impeding federal efforts for identifying management alternatives responding to the recommendations made in Addendum VII in a fair and equitable manner. We fear that these issues are becoming increasingly irreconcilable with every passing week.

We believe that affirmative steps need to be taken now to prevent potential jurisdictional chaos in lobster management, especially if states intend to implement trap transferability across jurisdictional boundaries prior to resolution of the differential qualification criteria, and transferable trap allocations. Preliminarily, I would appreciate hearing your perspective on the seemingly disparate state regulations. We would also be interested in your thoughts on how the Lobster Board is attempting to resolve some of the more intractable core problems it faces. Perhaps the professional services of a facilitator can help us move beyond the current impasse on these primary issues. Resolution is essential to facilitate compatible and effective Federal implementation of the ISFMP recommendations in a fair and equitable manner.

I look forward to hearing back from you. If you wish to discuss the above concerns in greater detail, please don't hesitate to contact me or Harry Mears.

Sincerely,

Patricia A. Kurkul
Regional Administrator

cc: George Lapointe
cc: Paul Diodati
cc: Mark Gibson
cc: Eric Smith

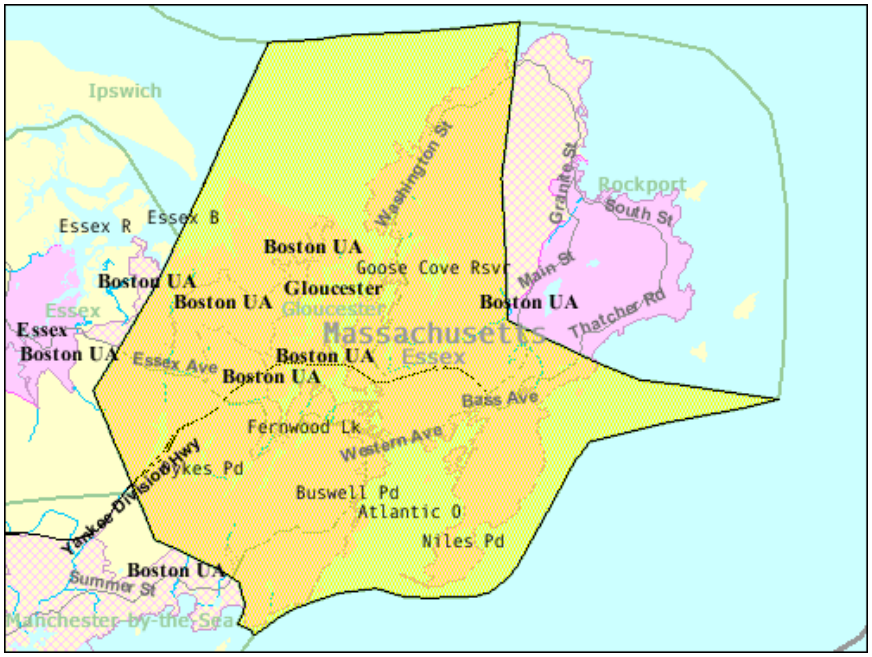
GLOUCESTER, MA[1]

Community Profile[2]

PEOPLE AND PLACES

Regional orientation

The city of Gloucester (42.62°N, 70.66°W) is located on Cape Ann, on the northern east coast of Massachusetts in Essex County. It is 30 miles northeast of Boston and 16 miles northeast of Salem. The area encompasses 41.5 square miles of territory, of which 26 square miles is land (USGS 2008).



Map 1. Location of Gloucester, MA (US Census Bureau 2000)

Historical/Background

The history of Gloucester has revolved around the fishing and seafood industries since its settlement in 1623. Part of the town's claim to fame is being the oldest functioning fishing community in the United States. It was established as an official town in 1642 and later became a city in 1873. By the mid 1800s, Gloucester was regarded by many to be the largest fishing port in the world. Unfortunately, with so many fishermen going to sea there were many deaths during the dangerous voyages. At least 70 fishermen died at sea in 1862 and the annual loss peaked at 249 in 1879. The construction of memorial statues and an annual memorial to fishermen demonstrates that the high death tolls are still in the memory of the town's residents.

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[1] These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

[2] For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

In 1924 a town resident developed the first frozen packaging device, which allowed Gloucester to ship its fish around the world without salt. The town is still well-known as the home of Gorton's frozen fish packaging company, the nation's largest frozen seafood company.

As in many communities, after the U.S. passed and enforced the Magnuson Act and foreign vessels were prevented from fishing within the country's EEZ (Exclusive Economic Zone), Gloucester's fishing fleet soon increased -- only to decline with the onset of major declines in fish stocks and subsequent strict catch regulations. For more detailed information regarding Gloucester's history. (Hall-Arber et al. 2001).

Demographics[3]

According to Census 2000 data (US Census Bureau 2000a), Gloucester had a total population of 30,273, up 5.4% from a reported population of 28,716 in 1990 (US Census Bureau 1990). Of this 2000 total, 47.9% were males and 52.1% were females. The median age was 40.1 years and 75.2% of the population was 21 years or older while 18.1% of the population was 62 or older.

The age structure (see Figure 1) between genders in Gloucester shows a peak between ages the ages of 40 to 49. Gloucester had a much lower percentage between the ages of 20-29. This may be an indication of out-migration after high school graduation for college or work since the fishing industry is not as strong as it was in the past.

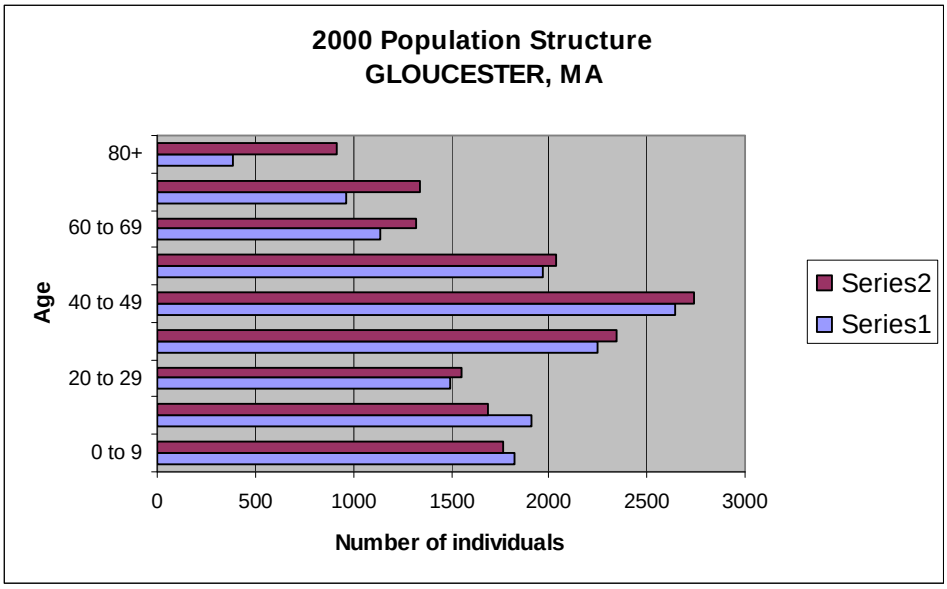

Figure 1. Gloucester's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (96.9%), with 0.9% black or African American, 0.9% Asian, 0.4% Native American, and 0.1% Pacific Islander or Hawaiian (see Figure 2). Only 1.5% of the population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their backgrounds to a number of different ancestries including: English (15.1%), Irish (20.1%), Italian (21.9%) and Portuguese (9.8%). With regard to region of birth, 77.4% were born in

[3] While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

Massachusetts, 16.2% were born in a different state and 5.3% were born outside the U.S (including 2.6% who were not United States citizens).

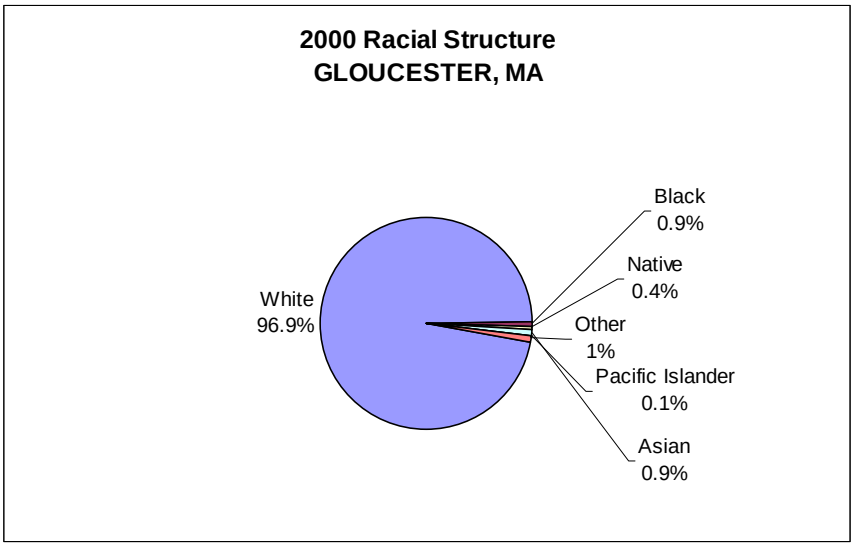

Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

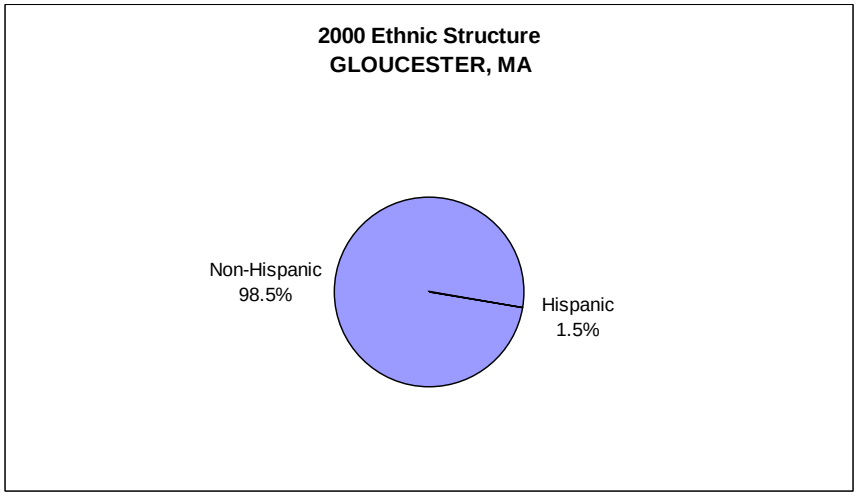

Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

According to Griffith and Dyer (1996), “Probably 80 percent of Gloucester's fishermen are Italian (mostly Sicilian). Although large immigration flows ended in the mid-1970s, there are at least 26 vessels (out of approximately 200) on which only Italian is spoken. Even among the fishermen who arrived at a very young age, Italian is often the first and virtually only language spoken. Some of these men depend on their wives to communicate with the English-speaking population when necessary” (Griffith and Dyer 1996).

For 89.7% of the population, only English was spoken in the home, leaving 10.3% in homes where a language other than English was spoken, including 3.6% of the population who spoke English less than “very well” according to the 2000 Census. Further, Doeringer et al. (1986) noted with regard to both Gloucester and New Bedford: "[m]any workers are geographically immobile because of close ties to community and family -- ties that are reinforced in some ports by the presence of a large number of recent immigrants, many of whom lack facility in English (Miller and van Maaned 1979; Poggie and Pollnac 1980)”

Of the population 25 years and over, 85.7% were high school graduates or higher and 27.5% had a bachelor's degree or higher. Again of the population 25 years and over, 5.2% did not reach ninth grade, 9.2% attended some high school but did not graduate, 25.9% completed high school, 31.5% had some college with no degree, 8.7% received an associate's degree, 17.2% earned a bachelor's degree, and 10.2% received either a graduate or professional degree.

Although the religion percentages are not available through U.S. Census data, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Essex County was Catholic with 70 congregations and 362,900 adherents. Other prominent congregations in the county were United Church of Christ (49 with 15,358 adherents), United Methodist (31 with 8,713 adherents), Jewish (29 with 21,700 adherents), Episcopal (28 with 14,064 adherents) and American Baptist (24 with 5,291 adherents). The total number of adherents to any religion was up 4.1% from 1990 (ARDA 2000).

Issues/Processes

As regulations tighten, fishermen have been concerned that they will go out of business. It is interesting, however, that Gloucester has gained some business from Maine vessels which land here due to tightening restrictions at the statewide level in Maine.[4]

Fishermen and environmentalists in the Gloucester area have been heavily opposed to the development of two offshore LNG facilities near Gloucester. The facilities require fishermen to avoid a large area for security reasons, restricting some important fishing grounds and causing vessels to have to steam longer to get around the closed areas. Environmentalists have been concerned about the effect the ship traffic may have on endangered right whales inhabiting the area. In December 2006, $6.3 million was provided to the Gloucester Fishing Community Preservation Fund as part of a $12.6 million mitigation package for the LNG terminal being built off the coastline. These funds will be used to buy fishing permits from local fishermen who wish to leave the industry, and lease them to others (Moser 2007).

Cultural attributes

Gloucester demonstrates dedication to its fishing culture through numerous social events, cultural memorial structures, and organizations. St. Peter's Fiesta, celebrated since 1927, is in honor of the patron saint of fishermen. It is put on by the St. Peter's Club, an organization that facilitates social interactions for fisherman. The celebration lasts for five days at the end of June each year. Festivities for this celebration include a seine boat race and a greasy pole competition, but the parade carrying a statue of St. Peter around the town and a blessing of the Italian-American fishing fleet are the foci of the festival.

2004 marked the 20th anniversary of the Gloucester Schooner Festival, which is sponsored by Gorton's Seafood. "The Gloucester Schooner Festival celebrates the major contribution of the classic fishing schooner to the history of Gloucester. The events feature the last remaining of these great old vessels and their replicas, as they compete in the Mayor's Race for the Esperanto Cup, a trophy from the first International Fishermen's Races sailed in 1920." The Gloucester Maritime Heritage Center has held Gloucester Maritime Heritage Day annually for the last four years in conjunction with the Schooner Festival; activities commemorate the

[4] Profile review comment, Caleb Gilbert, Port Agent, NMFS, 11-15 Parker St., Gloucester, MA 01930, February 8, 2008

city's ties to the sea.[5] Another festival that celebrates the area's fishing culture is the Essex Clamfest.

Other indications of the fishing culture in Gloucester include its annual Fishermen's Memorial Service, an annual tradition to honor fishermen lost at sea. The earliest recording of this ceremony was in the mid 1800s. In the 1960s this service stopped due to the closure of Fishermen's Union Hall (the organization previously in charge of it), but in 1996 the Gloucester Mayor asked residents to revive the tradition. Now there is a committee that documents the ceremony's speeches and ceremonial walk from the American Legion Square to the Fishermen's Monument each year, so that the tradition is not lost in the future.[6]

Interesting infrastructure that demonstrates the significance of fishing history in this city include "Our Lady of Good Voyage Church" built in 1893 and the recent opening of the Gloucester Maritime Heritage Center, which provides visitors and the city residents with information of the historic and current fishing industry The statue named "The Man at the Wheel" was built in memory of the 5,300 fishermen that died at sea. In 2001 a new statue dedicated to fishermen's wives was built by The Gloucester Fishermen's Wives Association.

INFRASTRUCTURE

Current Economy

Gorton's of Gloucester employs approximately 500 people in their fish processing facility, but it is important to note that at least as of 2000, the company had been processing and packaging only imported fish since the mid 1990s. Major employers that provide over 100 jobs in Gloucester include the following businesses (number of employees listed in parentheses): Varian Semi Conductor Equipment Associates (950), Gorton's of Gloucester (500), Battenfeld Gloucester Engineering (400), Shaw's Supermarkets (350), Addison Gilbert Hospital (325), NutraMax Products (220), and Seacoast Nursing and Retirement (160). Cape Pond Ice employs up to 30 people during the busy summer season.

According to the U.S. Census 2000[7], 66.1% (24,397 individuals) of the population 16 years or older were in the labor force (see Figure 4), of which 3.2% were unemployed, 0.2% were in the Armed Forces, and 62.7% were employed.

[5] Profile review comment, Harriet Webster, Gloucester Maritime Heritage Center, 23 Harbor Loop Rd., Gloucester, MA 01930, October 19, 2007

[6] For more information call (978) 281-9740 and (978) 283-1645 to speak with either Thelma Parks or Lucia Amero, both are on Fishermen Memorial Service Committee

[7] Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

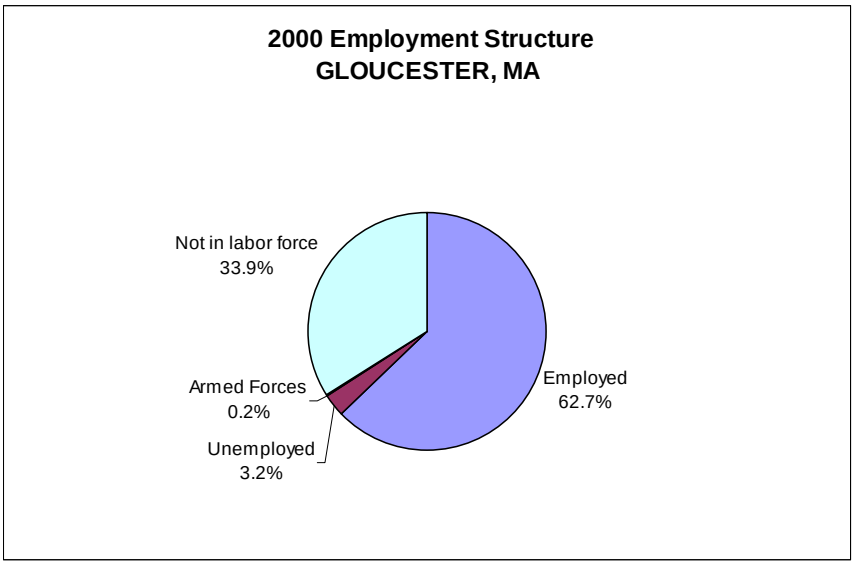

Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 382 or 2.5% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 1,319 positions or 8.6% of jobs. Educational, health and social services (20.2%), manufacturing (16.7%), retail trade (10.8%) and arts, entertainment, recreation, accommodation and food services (9.2%) were the primary industries.

The median household income in 2000 was $47,772 (up 46.1% from $32,690 in 1990 [US Census Bureau 1990]) and median per capita income in 2000 was $25,595. For full-time year round workers, males made approximately 35.7% more per year than females.

The average family in Gloucester in 2000 consisted of 3.0 persons. With respect to poverty, 7.1% of families (up from 6.7% in 1990 [US Census Bureau 1990a]) and 8.8% of individuals were below the U.S. Census poverty threshold. This threshold is $8,794 for individuals and ranges from $11,239 through $35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000a). In 2000, 26.0% of all families (of any size) earned less than $35,000 per year.

In 2000, Gloucester had a total of 13,958 housing units, of which 90.2% were occupied and 54.3% were detached one unit homes. Just over half (53.9%) of these homes were built before 1940. Mobile homes accounted for 0.1% of housing units; 88.7% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was $204,600. Of vacant housing units, 70.4% were used for seasonal, recreational, or occasional use. Of occupied units, 40.3% were renter occupied.

Government

Gloucester's city government is run by an elected mayor and city council.

Fishery involvement in government

The Gloucester Fisheries Commission is the only municipal-level government sector focused on fisheries, but it is currently inactive. However, NOAA Fisheries, Fisheries Statistics Office, has two port agents based here. Port agents sample fish landings and provide a 'finger-on-the-pulse' of their respective fishing communities. The NOAA Fisheries Northeast Regional

Office is based in Gloucester; many of the employees here work closely with the city.[8] There is also a harbor master in town.

Institutional

Fishing associations

Both the Gloucester Fishermen's Association and Gloucester Lobstermen's Association are located in Gloucester (Stevenson nd). The Massachusetts Fisherman's Partnership focuses on issues for fishermen in different ports in Massachusetts. The Partnership responded to the need of health care for fishermen and their families by developing the Fishing Partnership Health Insurance Plan with federal and state aid. This plan has been in place since 1997 and reduces the amount of money that fishermen's families have to pay to be covered by health insurance (Hall-Arber et al. 2001).

Fishing assistance centers

The Gloucester Fishermen and Family Assistance Center was established in 1994. Currently it is run and funded by grants from the Department of Labor. "In an effort to help fishermen, their families, and other fishing workers to transition to new work, Massachusetts applied for and received grants from the U. S. Department of Labor to set up career centers. National Emergency Grants (NEG) fund centers in Gloucester, New Bedford and Cape Cod and the Islands to provide re-employment and re-training services to those individuals who can no longer make an income from fishing and fishing related businesses" (Commonwealth Corporation 2007).

The Gloucester Fishermen's Wives Association (GFWA) was founded in 1969 by the wives of Gloucester fishermen. In 2001 they constructed a memorial statue to the fishermen's wives of Gloucester.

The Gloucester Fishing Community Preservation Fund was established in 2007 to manage a project buying fishing permits from those who wish to get out of the industry and leasing them to others, using the funding received in a mitigation package for the development of an offshore LNG terminal in the fishing grounds (Moser 2007).

Other fishing related organizations

Northeast Seafood Coalition is a non-profit, membership organization located in Gloucester, focused on representing the interests of commercial fishermen. "The Gloucester Maritime Heritage Center is the only working historic waterfront in the Northeast that combines a historic working marine railway, where wooden vessels are hauled and repaired, with a Gulf of Maine aquarium, ongoing construction of wooden boats, and educational exhibits and programs" (GMHC 2007). They have a number of educational programs for children and teens, including field trips, boat building, internships, and after school programs (GMHC 2007).

Physical

There are several ways to access Gloucester and to travel within the city. Cape Ann Transportation Authority (CATA) is the bus system that runs from Gloucester to Rockport. State Routes 128, 127, and 133 are highway system providing access within and to the city. The neighboring town of Beverly has a small municipal airport with three asphalt runways. Amtrak and MBTA (Massachusetts Bay Transportation Authority) trains provide public transportation

[8] Profile review comment, Caleb Gilbert, Port Agent, NMFS, 11-15 Parker St., Gloucester, MA 01930, February 8, 2008

from Gloucester to the Boston area (State of Massachusetts 2007). Gloucester is approximately 35 miles from Boston and 106 miles from Portland, Maine by car (MapQuest nd).

Gloucester has been a full service port for the commercial fishing industry in the region; however, this status would be jeopardized if one or more of the facilities went out of business. Thus far it has provided all the necessary facilities for fishermen in the town, and even facilities needed for neighboring fishing communities. Offloading facilities located within the city include Capt. Vince, which deals almost exclusively in lobster, the Gloucester Seafood Display Auction, Ocean Crest, John B. Wrights, NE Marine Resources, and a few others who have been offloading fish in Gloucester for years (Robinson S 2003). There are nine lobster buyers that are either based in or come to Gloucester for purchasing.

Fishermen can purchase necessary equipment and have it repaired in town by either Gloucester Marine Railways or Rose Marine, both of which can provide haul out service for large vessels (Robinson 2003). Additionally, the Gloucester Maritime Heritage Center specializes in large wooden vessel restoration projects.[9] There are three other facilities that provide services for vessels under 40ft. Gloucester fishermen have a choice of nine gear and supply shops in town (Robinson S 2003). Harbor plans in 2006 have been formulated to maintain the necessary fishing infrastructure (Hall-Arber 2001). There are at least 11 locations that provide long-term mooring space and seven for temporary mooring space. At least four facilities provide a place for fishermen to purchase fuel (Robinson S 2003). Whole Foods runs the 17,000 sq. ft. Pigeon Cove seafood processing facility, which supplies Whole Foods markets throughout the country with seafood. Some of the fish processed here is caught in Gloucester or Rockport, but much of it is imported from elsewhere in New England or flown in from other parts of the world (Hall-Arber 2001).

Cape Pond Ice, started in 1848, is the only ice business remaining in Gloucester, and provides other ice services, such as vegetable transport and ice sculptures to offset the declining business from the fishing industry. B&N Gear is the only bottom trawl gear seller in town (Finch 2004). Gloucester Seafood Display Auction, opened in 1997 by the Cuilla family, quickly grew to become the largest open display auction of fresh seafood in North America as of 2000. This allows buyers to purchase fish directly from the boats rather than having to rely on fish brokers, as they did in the past (Dornbusch 2003).

INVOLVEMENT IN NORTHEAST FISHERIES[10]

Commercial

Although there are threats to the future of Gloucester's fishery, the fishing industry remains strong in terms of recently reported landings. Gloucester's commercial fishing industry had the 13th highest landings in pounds (78.5 million) and the nation's ninth highest landings

[9] Profile review comment, Harriet Webster, Gloucester Maritime Heritage Center, 23 Harbor Loop Rd., Gloucester, MA 01930, October 19, 2007

[10] In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

value in 2002 ($41.2 million). In 2003 recorded state landings totaled 11.6 million pounds, with catches of lobster, cod, and haddock at 2.0 million, 4.7 million, and 2.6 million pounds landed, respectively (US Fisheries 2002). In 2002 Gloucester had the highest landings value of lobster in Massachusetts with the state-only landings worth $2 million and the combined state and federal landings recorded from federally permitted vessels was just over $10 million.

Gloucester's federally managed group with the highest landed value was largemesh groundfish with nearly $20 million in 2006 (see Table 1). Lobster landings were second in value, bringing in more than $10 million in 2006, a significant increase from the 1997-2006 average value of just over $7 million. Monkfish and herring were also valuable species; both had more valuable landings in 2006 than the ten year average values. The number of vessels home ported (federal) increased slightly from 1997 to 2006, but there was a slight reduction for the years 1998, 1999, and 2000 (Table 2).

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landing in Gloucester

	Average from 1997-2006	**2006 only**
Largemesh Groundfish[11]	17,068,934	19,577,975
Lobster	7,036,231	10,179,221
Monkfish	3,556,840	4,343,644
Other[12]	3,246,920	1,906,551
Herring	3,127,523	5,623,383
Squid, Mackerel, Butterfish	1,065,567	3,692,506
Scallop	735,708	1,113,749
Smallmesh Groundfish[13]	732,353	254,287
Dogfish	375,972	316,913
Skate	63,488	27,334
Tilefish	52,502	245,398
Surf Clams, Ocean Quahog	29,033	77,805
Bluefish	21,672	18,116
Summer Flounder, Scup, Black Sea Bass	1,286	603

Note: Red crab are also landed, but cannot be reported due to confidentiality

[11] Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock
[12] "Other" species includes any species not accounted for in a federally managed group.
[13] Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

Vessels by Year[14]

Table 2. All columns represent vessel permits or landings value combined between 1997 and 2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port ($)	Level of fishing landed port ($)
1997	277	216	15,483,771	23,497,650
1998	250	196	18,078,326	28,394,802
1999	261	199	18,396,479	25,584,082
2000	261	202	19,680,155	41,929,807
2001	295	230	18,614,181	37,961,334
2002	319	247	21,316,029	37,795,464
2003	301	225	22,451,526	37,795,464
2004	298	227	24,531,345	42,760,975
2005	287	217	34,319,544	45,966,974
2006	284	213	34,255,146	47,377,485

(Note: # Vessels home ported = No. of permitted vessels with location as homeport
 # Vessels (owner's city) = No. of permitted vessels with location as owner residence[15]
Level of fishing home port ($) = Landed value of fisheries associated with home ported vessels
Level of fishing landed port ($) = Landed value of fisheries landed in location)

Recreational

Gloucester is home to roughly a dozen fishing charter companies and party boats fishing for bluefin tuna, sharks, striped bass, bluefish, cod, and haddock. Between 2001- 2005, there were 50 charter and party vessels making 4,537 total trips registered in logbook data by charter and party vessels in Gloucester carrying a total of 114,050 anglers (NMFS VTR data). Some of the charter and party boats may be captained by part-time fishermen that needed a new seasonal income (Cape Ann Chamber of Commerce 2007). The Yankee Fleet offers deep sea fishing on their party boats on half-day, full-day, and overnight trips and charter fishing trips Sandy B Fishing Charters takes passengers in search of cod, haddock, tuna, and striped bass. Black Pearl Charters also has offshore trips for cod and haddock, and inshore trips for bluefish and striped bass.

Subsistence

Information on subsistence fishing in Gloucester is either unavailable through secondary data collection or the practice does not exist.

FUTURE

The Massachusetts Department of Housing and Community Development recognize that the fishing industry is changing. The city must adapt to these major economic changes.

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[14] Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

[15] The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Although the city is preparing for other industries, such as tourism, they are also trying to preserve both the culture of fishing and the current infrastructure necessary to allow the fishing industry to continue functioning. The city is also currently working with the National Park Service to plan an industrial historic fishing port, which would include a working fishing fleet (State of Massachusetts 2007). This would preserve necessary infrastructure for the fishing industry and preserve the culture to further develop tourism around fishing.

According to newspaper articles (Finch 2004) and city planning documents, residents have conflicting visions for the future of Gloucester. Many argue that the fishing industry is in danger of losing its strength. For example an anthropological investigation of the fishing infrastructure in Gloucester (Robinson 2003) found that the port is in danger of losing its full-service status if some of the businesses close down. With stricter governmental regulations on catches to rebuild declining and depleted fish stocks, many residents are choosing to find other livelihood strategies, such as tourism or other businesses. In 1996, the NMFS piloted a vessel buyback program to decrease the commercial fishing pressure in the northeast. Of the 100 bids applying to be bought by the government, 65 were from Gloucester fishermen (Gorlick 2000). This could be taken as an indication that these fishermen do not see any future in fishing for themselves in the Northeast. NMFS adjusted this program to just buy back permits rather than vessels. Massachusetts had the highest sale of permits, though the number of Gloucester permits could not be obtained at this time.[16]

On the other hand, there are fishermen who claim the fishing and seafood industries will remain strong in the future, despite the pessimistic forecasts. The Gloucester Seafood Festival and Forum is one example of celebrating and promoting Gloucester seafood industry (City of Gloucester 2007).

Whole Foods/Pigeon Cove recently expanded its facility to 17,000 sq. ft., and has plans to expand further (Hall-Arber et al. 2001).

REFERENCES

Association of Religion Data Archive (ARDA) 2000. Interactive Maps and Reports, Counties. [cited June 2007]. Available from:http://www.thearda.com/

Cape Ann Chamber of Commerce. 2007. Available from: http://www.capeannchamber.com/

City of Gloucester. 2007. Events: Seafood Festival and Forum. Available from: http://www.ci.gloucester.ma.us/?&MMN_position=51:51

Commonwealth Corporation. 2007. Programs and Services. Available from: http://www.commcorp.org/

Dornbusch J. 2003. Fish story: Gloucester presents two faces in festival, industry forum. Boston Herald, 2003 Sept 17

Finch D. 2004. Gloucester's Fishing Industry Braces Itself. NH Public Radio (May 7, 2004). Available from: www.nhpr.org

Gloucester Maritime Heritage Center. 2007. Available at: http://www.gloucestermaritimecenter.org/

Griffith D, Dyer CL. 1996. An Appraisal of the Social and Cultural Aspects of the Multispecies Groundfish Fishery in New England and the Mid-Atlantic Regions [cited Jun 2007]. Conducted by Aguirre International under NOAA Contract Number 50-DGNF-5-00008. Available at: http://www.st.nmfs.gov/st1/econ/cia/impact_studies.html

[16] If buyback data is needed on the port level, contact Drew Kitts at NEFSC in Woods Hole, MA.

Appendix 17

Hall-Arber M, Dyer C, Poggie J, McNally J, Gagne R. 2001. New England's Fishing Communities. Cambridge (MA): MIT Sea Grant 01-15. Available from: http://seagrant.mit.edu/cmss/

Miller ML, van Maanen J. 1979. Boats don't fish, people do. 1979. Human Organization. Vol. 38(4): p 377-385

Moser DA. 2007. Excelerate pays out 23.5M in mitigation funds. Gloucester Daily Times. 2007, June 20

Gorlick A. 2000. Fishing industry nets $50 million, but likely will be back for more [cited Oct 2008]. CNN.com, 2000 Aug 14.

Poggie J, Pollnac R. 1980. Small Fishing Ports in Southern New England. Acheson J (ed) Final Report to the National Science Foundation. Vol. 1b

Robinson S. 2003. Gloucester Community Panel; A Study of Gloucester's Commercial Fisheries Infrastructure: Interim Report. Available from: http://seagrant.mit.edu/cmss/:

State of Massachusetts 2007. Office of Coastal Zone Management. Gloucester Harbor Characterization: Environmental History, Human Influences and Status of Marine Resources. Available from: http://www.mass.gov/czm/glouc_harb_rpt_toc.htm

State of Massachusetts.2007. Gloucester, Essex County. DHCD Community Profiles. Government. [cited June 2007]. Available from: http://www.mass.gov

Stevenson BD. nd. Fishery Organizations – Massachusetts [cited Jun 2007]. Available at: http://www.bdssr.com/contacts_links/fishery_links/ma.htm

US Census Bureau. 1990. Decennial Census [cited June 2007] Available from: http://factfinder.census.gov

US Census Bureau. 2000. Fact sheet: Beverly, Massachusetts. [cited June 2007] Available from: http://factfinder.census.gov

US Census Bureau: 2000a. Poverty Threshold. [cited June 2007] Available from: http://www.census.gov/hhes/www/poverty/threshld/thresh00.html

US Fisheries. 2002. National Marine Fishery Services (NMFS). US Commercial Landings. Available from: http://www.st.nmfs.noaa.gov/st1/fus/current/02_commercial2002.pdf

US Geological Survey (USGS). 2008. US Board on Geographic Names: Geographic Names Information System (GNIS) [cited Sep 2008]. Available at: http://geonames.usgs.gov/pls/gnispublic/

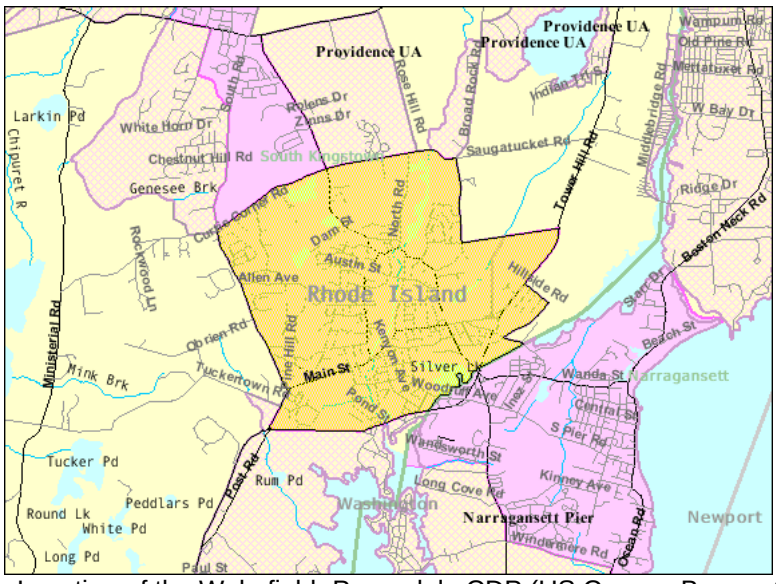
WAKEFIELD, RI[1]

Community Profile[2]

PEOPLE AND PLACES

Regional orientation

Wakefield (41.437N, 71.501W) (USGS 2008) is located, along with Peacedale and several other villages, in Washington County, 25 miles southeast of Providence, and is roughly 4 miles north of Point Judith. For U.S. Census purposes, Wakefield and Peacedale are combined into a single Census Designated Place or CDP, as neither village is incorporated as a separate town. In fact, Wakefield and Peacedale (along with the villages of Curtis Corner, Green Hill, Indian Lake Shore, Kingston, Matunuck, Middlebridge, Perryville, Rocky Brook, Snug Harbor, Tuckertown, Usquepaugh, and West Kingston) are actually part of the town of South Kingstown (SKCC 2004).



Map 1. Location of the Wakefield- Peacedale CDP (US Census Bureau 2000a)

Historical/Background

In 1674, King's Town was founded and included the present towns of Narragansett, North Kingstown, and South Kingstown (Town of South Kingstown 2008). Narragansett Indians hunted, fished, and raised corn in this area. The first settlement was in South Kingstown. Colonial soldiers from Rhode Island, Massachusetts and Connecticut defeated King Philip there during the Great Swamp Fight, in 1675. Farming was the most common occupation during this time. By 1800, many people were employed by the Wakefield Manufacturing Company, or the

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[1] These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

[2] For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

Peace Dale Mill, which became one of the town's largest industries (RIEDC 2008). The village of Peace Dale was founded about that time by Rowland Hazard, the owner of the Peace Dale Mill, who named the village after his wife, Mary Peace. Around 1820, Hazard renamed the nearby industrial village of Wakefield after the town and family of the same name in England, who were friends of his (SKCC 2004). The Rhode Island College of Agriculture and Mechanic Arts was founded in 1892, near the Village of Kingston. This was an important milestone in the history of the area. Rhode Island College became the University of Rhode Island and now this institution plays a key role in the economy and the cultural life of the area. In recent years, small industries have replaced the town's previous chief textile manufacturers. For many years, the J.P. Stevens Company operated in the Peace Dale Mill, until the textile industry and sales declined at the end of World War II. The South Kingstown shoreline and beach areas have increased residency, as well as developed summer resort and tourist facilities (RIEDC 2008).

Demographics[3]

According to Census 2000 data, Wakefield- Peacedale CDP had a total population of 8,468, up 18.7% from a reported population of 7,134 in 1990 (US Census Bureau 1990). Of this 2000 total, 46.7% were males and 53.3% were females. The median age was 37 years and 68.6% of the population was 21 years or older while 15.1% was 62 or older.

The population structure for Wakefield (see Figure 1) shows a community with many families and children. The largest percentage of the population was between the ages of 30-39, followed by 40-49, with many children age 0-9 and 10-19 as well. Like many fishing communities, Wakefield experienced a decline in the population of residents between the ages of 20-29.

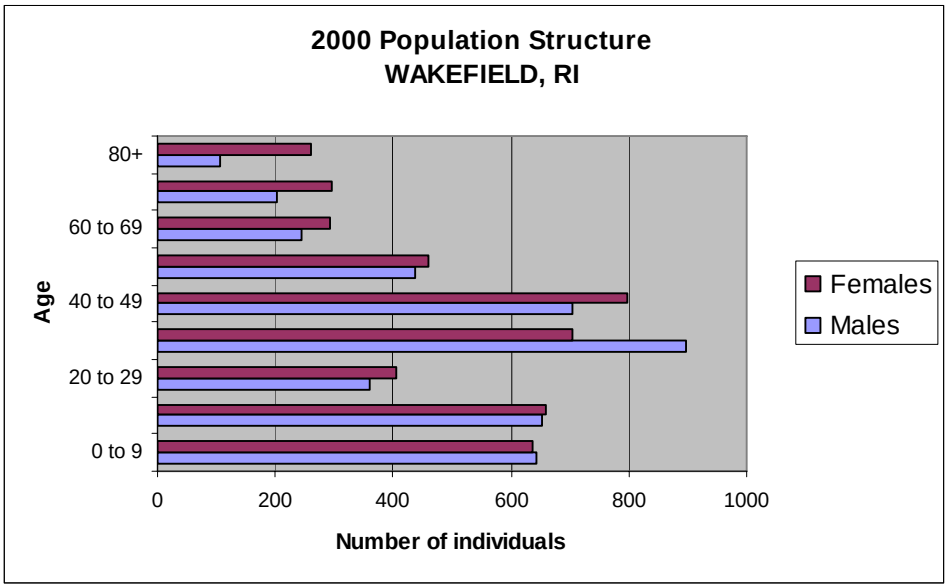


Figure 1. Wakefield's population structure by sex in 2000 (US Census Bureau 2000a)

[3] While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

The majority of the population was white (89.1%), with 3.6% black or African American, 1.5% Asian, 4.7% American Indian and Alaska Native, and none Pacific Islander or Hawaiian (see Figure 2). Only 1.6% of the population identified themselves as Hispanic/Latino (see Fiugre 3). Residents linked their backgrounds to a number of different ancestries including: Irish (23%), Italian (17.2%), and English (17.2%).

With regard to region of birth, 66.7% were born in Rhode Island, 29.9% were born in a different state and 3.1% were born outside of the U.S. (including 1.4% who were not United States citizens).

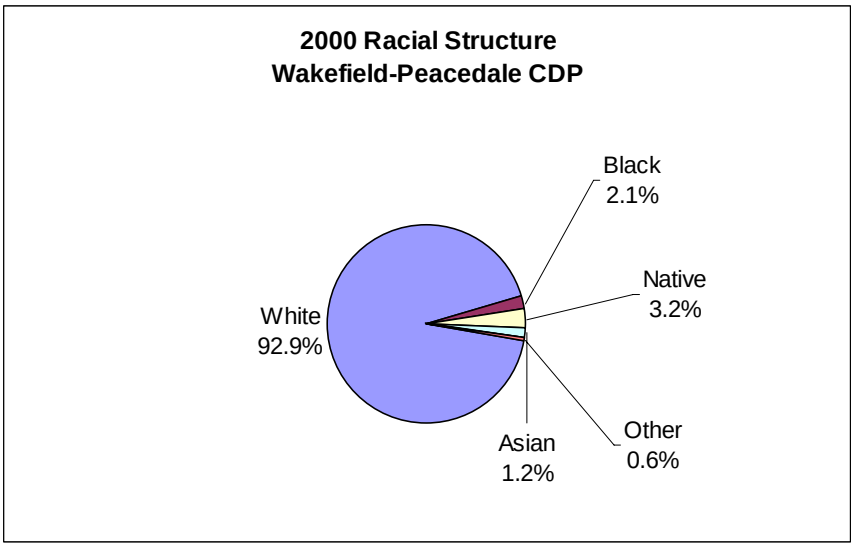


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

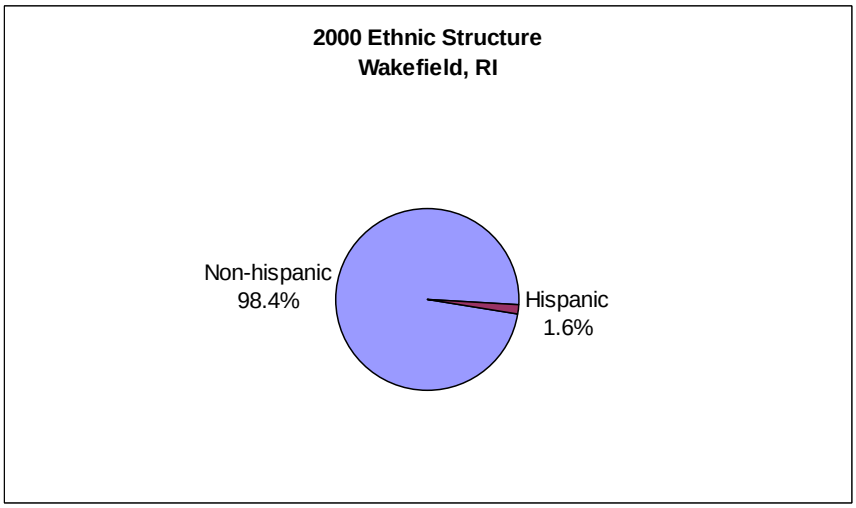


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 94.1% of the population, only English was spoken in the home, leaving 5.9% in homes where a language other than English was spoken, including 1.2% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 81.8% were high school graduates or higher and 41.9% had a bachelor’s degree or higher. Again of the population 25 years and over, 3% did not

reach ninth grade, 7.2% attended some high school but did not graduate, 25.9% had completed high school, 15.9% had some college with no degree, 6.1% received an associate's degree, 25.3% earned a Bachelor's degree, and 16.6% received either a graduate or professional degree.

Although religion percentages are not available through U.S. Census data, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Washington County was Catholic with 20 congregations and 58,668 adherents. Other prominent congregations in the county were American Baptist Churches (15 congregations with 3,022 adherents) and Episcopal (10 with 4,720 adherents). The total number of adherents to any religion was up 57.3% from 1990 (ARDA 2000).

Issues/Processes

Information on issues/processes in Wakefield is unavailable through secondary data collection, though at least some Wakefield fishermen fish out of Point Judith and would share the concerns for that port.

Cultural attributes

Snug Harbor Marina in Wakefield hosts three fishing tournaments; a shark fishing tournament, a striped bass tournament, and a bass and bluefish tournament.

INFRASTRUCTURE

Current Economy

The economy in Wakefield has been slowly recovering since the 1990s. According to South Kingstown's Chamber of Commerce, the local economic base is strong because it doesn't rely on one industry. The local economy is supported by businesses of all sizes and a number of industries. There are more than 10,000 businesses in and around South Kingstown (SKCC 2004).

Education, government, and health care account for the majority of the local economy. In recent years, companies, including APC, have invested millions of dollars in property, buildings, and equipment in the South Kingstown area, creating many job opportunities. Small and medium-sized businesses are the most prominent in South Kingstown. Most of the area businesses employ fewer than 20 workers. These businesses include specialty retail shops, financial service firms, management consultancies, and fitness firms. Tourism is also a substantial aspect of the economy of South Kingstown.

In addition to these aspects of economy, the South Kingstown area is home to multiple fish processing and wholesaling companies. In Wakefield itself, Deep Sea Fish of Rhode Island Inc. is a wholesale supplier and exporter of Southern New England seafood that receives fish from independently owned and operated fishing vessels. Deep Sea Fish then ships the fish to auctions and wholesalers worldwide. Four Sisters Lobster Company, was located in Wakefield, delivers live, fresh lobsters throughout the United States, but has apparently closed by 2007. Additional companies include Stone Cove Marina, Inc., Salt Pond Marine Railway, Inc., Ocean State Marine Railway, Inc., Industrial Marine Marketing (commercial fishing supplies), Channel Marina Snug Harbor, Kenport Marina Fish Market, Main Street Fish Market, and Moonstone Oysters.

According to the U.S. Census 2000[4], 70.4% (4,488 individuals) of the total population 16 years of age and over are in the labor force (see Figure 4), of which 3.2% were unemployed, 0.3% were in the Armed Forces, and 66.9% were employed.

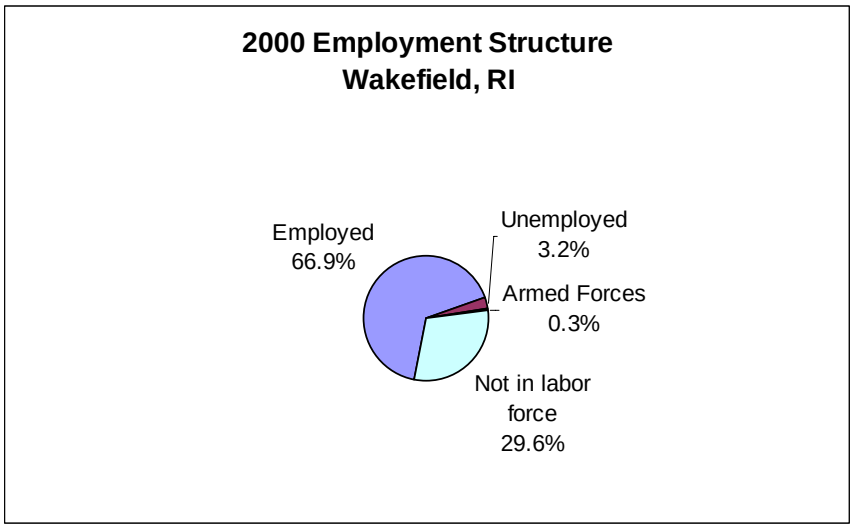


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 32 positions or 0.7% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 426 positions or 10% of jobs. Educational, health and social services (34%), professional, scientific, management, administrative, and waste management services (9.2%), manufacturing (9.4%) and arts, entertainment, recreation, accommodation and food services (9.2%) were the primary industries.

Median household income in Wakefield- Peacedale CDP was $50,313, up 44.8% from $34,748 in 1990 (US Census Bureau 1990) and median per capita income was $24,191. For full-time year round workers, males made approximately $20,548 more per year than females.

The average family in Wakefield-Peacedale CDP consisted of 3.14 persons. With respect to poverty, 3.9% of families, up from 3.6% in 1990 (US Census Bureau 1990) and 5.4% of individuals earned below the official U.S. Census poverty threshold. This threshold is $8,794 for individuals and ranges from $11,239 through $35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 32.3% of all families of any size earned less than $35,000 per year.

In 2000, Wakefield-Peacedale CDP had a total of 3,381 housing units of which 95.2% were occupied and 69.5% were detached one unit homes. Slightly more than a third of these homes were built before 1940. Mobile homes accounted for 0.3% of housing units; 89.8% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was $151,700. Of vacant housing units, 1.3% were used for seasonal, recreational, or occasional use. Of occupied units, 28.7% were renter occupied.

[4] Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Government

Wakefield's government is the same as the town of South Kingstown, as it is a village of South Kingstown. The South Kingstown government consists of a Town Manager and a Town Council. The Town Council has five members elected at large in November of even- numbered years. The Town Council meets regularly on the second and fourth Monday of each month in the Town Council Chambers, at 180 High Street, in Wakefield (Town of South Kingstown 2008).

Fishery Involvement in Government

The Waterfront Advisory Commission of South Kingstown advises the Town Council on issues concerning the preservation and development of South Kingstown's property in the shoreline area and the management of commercial and recreational waterfront activities, the conservation of existing coastal access and the increase of physical access and enjoyment of the coast by the public, and commercial fisheries practices which directly or indirectly limit or impede the public's use of ponds and tidal waters (Town of South Kingstown 2008). The Rhode Island Department of Environmental Management, Division of Fish and Wildlife, is based in Wakefield (RIDEM 2008). The South Kingstown Conservation Commission provides advisory opinions to the Town Council, CRMC, and DEM regarding proposed projects within and proximate to coastal resource areas.[5] The town also has a harbormaster.

Institutional

Fishing associations

No fishing associations were found in Wakefield itself, however associations were located in surrounding areas such as Point Judith and Narragansett. However, Rhode Island Seafood Council, a now-defunct not-for-profit organization established in 1976, was located here and promoted quality seafood products. The American Seafood Institute was established in 1982 in conjunction with the Rhode Island Seafood Council and provides assistance to the fishing industry in exporting product overseas (Hall Arber et al. 2001). The Point Club is a self-insurance group for fishermen to protect against price gouging, etc.[6] Additionally, the Rhode Island Commercial Fishermen's Association has members throughout the state.

Fishing assistance centers

The Bay Company was developed under the Rhode Island Marine Trade Education Initiative and attempts to link academia to the marine industry to improve productivity and economic viability; it is now defunct since the funding disappeared in 2003 (Hall-Arber et al. 2001).

Other fishing related organizations

The Rhode Island Sea Grant College Program is based at the University of Rhode Island's Graduate School of Oceanography in Narragansett. They design and support research, education, and other programs that foster stewardship of coastal and marine resources (RI Sea

[5] Profile review comment, Raymond T. Nickerson, Principal Planner, South Kingstown Town Hall, 180 High St., Wakefield, RI 02879, September 27, 2007

[6] Profile review comment, Chris Brown, Rhode Island Commercial Fishermen's Association, 35 Erica Court West Kingston, RI 02892, October 19, 2007

Grant 2008). The RI Sea Grant Sustainable Fisheries Program is located at the East Farm Campus of the University of Rhode Island (URI).

The Commercial Fisheries Center of Rhode Island was founded in 2004 and is home to nonprofit commercial fishing organizations, and serves "as a headquarters for bringing fishermen, scientists, managers, and elected officials together to discuss issues." The goals of the center are "to improve fisheries and understanding of the marine environment through education, collaborative research, and cooperation" (CFCRI nd).

Physical

Wakefield is part of the town of South Kingstown, located in the southern part of Rhode Island and bordering the Atlantic Ocean. Wakefield itself is not on the ocean, but sits at the north end of Point Judith Pond, which provides access to the Atlantic. There are buses from Wakefield to Providence, Newport, and T.F. Green Airport run by the Rhode Island Public Transit Authority (RIPTA nd). Amtrak trains stop at nearby Kingston while running between Boston and New York. Wakefield is 6 miles from Point Judith, 18 miles from Newport, and 163 miles from New York City.

The charter fishing fleet in Wakefield is based at Snug Harbor Marina. Billington Cove Marina in Wakefield provides full service to boats. Point Judith Marina is another full-service marina located in Wakefield. There are several other marinas listed for Wakefield which provide services to recreational boaters, including Gooseberry Marina, Kenport Marina, Ram Point Marina, Marina Bay Docking, Silver Spring Marine, and Stone Cove Marina (Explore RI 2008).

INVOLVEMENT IN NORTHEAST FISHERIES[7]

Commercial

Wakefield is not actually a commercial fishing port. However, members of this community fish commercially from neighboring ports including Narragansett and Point Judith. There are, however, a number of vessels both home ported and whose owner's city is Wakefield, although both these values generally decreased between 1997 and 2006. While there were no values for landed port, the level of fishing home port values ranged between $2-4 million (see Table 1).

[7] In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

Vessels by Year[8]

Table 1. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port ($)	Level of fishing landed port ($)
1997	26	95	4,019,707	0
1998	31	88	3,951,249	0
1999	31	94	3,734,059	0
2000	31	93	3,874,318	0
2001	28	94	3,007,981	0
2002	27	92	2,825,931	0
2003	20	86	2,833,778	0
2004	17	84	2,661,484	0
2005	16	91	3,002,598	0
2006	17	87	3,076,804	0

 # Vessels home ported = No. of permitted vessels with location as homeport
 # Vessels (owner's city) = No. of permitted vessels with location as owner residence[9]
Level of fishing home port ($) = Landed value of fisheries associated with home ported vessels
Level of fishing landed port ($) = Landed value of fisheries landed in location

Recreational

Rhode Island marine waters also support a sizable recreational fishing sector. "In Rhode Island, nearly 362,000 recreational marine anglers - more than half from out-of-state - made over 1.5 million trips, catching 4.3 million pounds of sport fish and releasing about 55 percent in 2004" (RIDEM 2004). This indicates that the recreational component is significant both in terms of the associated revenues generated (support industries) and harvesting capacity. South Kingstown is to the Frances Fleet charter fishing excursions, as well as Old Salt Charters. Snug Harbor Marina in Wakefield also has charter boat bookings for Rhode Island. Charter boats here take passengers both on inshore trips and offshore big game excursions, and have the opportunity to catch more than 30 species of fish. Miller Time Charters offers fishing for bluefish, striped bass, sea bass, flounder, tuna, and shark. Snappa Charters targets shark, tuna, sea bass, porgies, dolphin fish, cod, bonito, and other species, as well as shark cage diving trips. (State of Rhode Island 2008)

Subsistence

Information on subsistence fishing in Wakefield is either unavailable through secondary data collection or the practice does not exist.

FUTURE

No information was collected on plans or perspectives for the future of Wakefield specifically. The Town encourages new and expanded industrial development in an effort to

[8] Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

[9] The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

increase diversity of the tax base to reduce dependence on residential tax payers.[10] The town has experienced significant residential expansion, and development of its summer resort and tourist facilities due to its shoreline and beach areas. Increasing tourism at the port of Point Judith has caused parking issues and rent increases. As values of local dock space and land increase, further declines in fishing infrastructure may follow (Griffith and Dyer 1996).

References

Association of Religion Data Archive (ARDA). 2000. Interactive Maps and Reports, Counties within one state [cited Oct 2005]. Available from: http://www.thearda.com/

Commercial Fisheries Center of Rhode Island (CFCRI). nd. Web site [cited July 2007]. Available at: http://www.cfcri.com/

Explore Rhode Island (Explore RI). 2008. Explore Narragansett Bay [cited Sept 2008]. Available at: http://www.visitrhodeisland.com/what-to-do/jewels-of-the-bay/

Griffith D, Dyer CL. 1996. An Appraisal of the Social and Cultural Aspects of the Multispecies Groundfish Fishery in the New England and the Mid-Atlantic Regions [cited Jan 2007]. Repared prepared under Contract Number 50-DGNF-5-00008, National Oceanic and Atmospheric Admin and Aguirre International. Available at: http://www.nefsc.noaa.gov/clay/overvue.htm

Hall-Arber M, Dyer C, Poggie J, McNally J, Gagne R. 2001. New England's Fishing Communities. Cambridge (MA): MIT Sea Grant 01-15. Available at: http://seagrant.mit.edu/cmss/

Rhode Island Public Transportation Authority (RIPTA). nd. Web site [cited Sept 2008]. Available at: http://www.ripta.com/

Rhode Island Sea Grant (RI Sea Grant). 2008. Web site [cited Jan 2007]. Available at: http://seagrant.gso.uri.edu

State of Rhode Island. nd. Web site [cited Jan 2007] Available at: http://www.ri.gov/

Rhode Island Department of Environmental Management (RIDEM). 2004. Annual Report 2004 [cited Sept 2008]. Available at: http://www.dem.ri.gov/

Rhode Island Economic Development Corporation (RIEDC). 2008. Data and Publications: State and Community Profiles [cited Jan 2007]. Available at: http://www.riedc.com/

South Kingstown Chamber of Commerce (SKCC). 2004. Web site [cited Jan 2007]. Available at: http://www.skchamber.com/

Town of South Kingstown. 2008. Web site [cited Jan 2007]. Available at: http://www.southkingstownri.com/

US Census Bureau. 1990. 1990 Decennial Census [cited Jul 2008]. Available at: http://factfinder.census.gov/

US Census Bureau. 2000a. United States Census 2000 [cited Jul 2007]. Available at: http://www.census.gov/

US Census Bureau. 2000b. Poverty thresholds 2000 [cited Jun 2007]. Available at: http://www.census.gov/hhes/www/poverty/threshld/thresh00.html

US Geological Survey (USGS). 2008. US Board on Geographic Names: Geographic Names Information System (GNIS) [cited Sep 2008]. Available at: http://geonames.usgs.gov/pls/gnispublic/

[10] Profile review comment, Raymond T. Nickerson, Principal Planner, South Kingstown Town Hall, 180 High St., Wakefield, RI 02879, September 27, 2007

Appendix 17

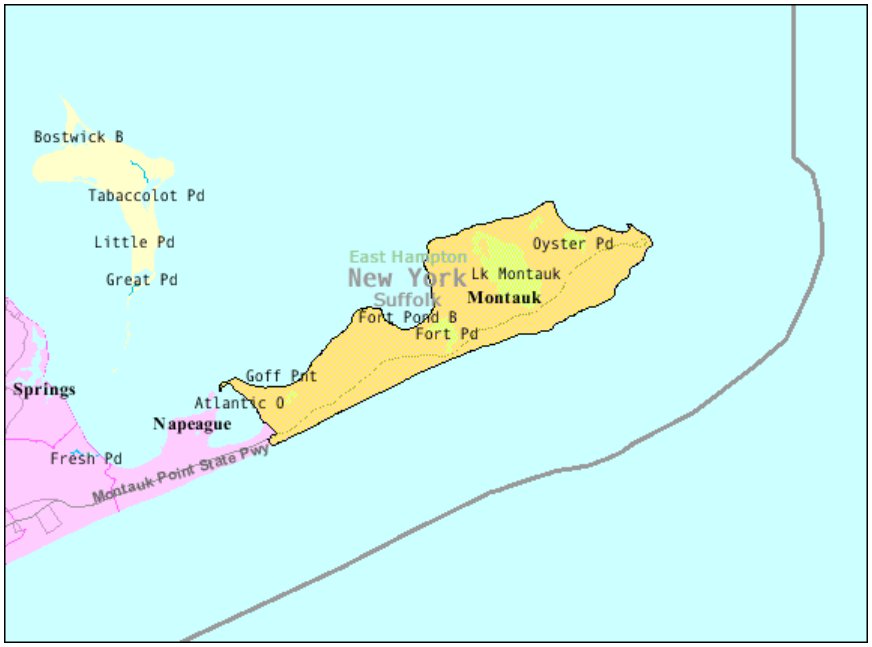
MONTAUK, NY[1]

Community Profile[2]

PEOPLE AND PLACES

Regional orientation

Montauk (41.00°N, 71.57°W) is located in Suffolk County at the eastern tip of the South Fork of Long Island in New York. It is situated between the Atlantic Ocean to the south, and Block Island Sound to the north, about 20 miles off the Connecticut coast. The total area of Montauk is about 20mi², of which 2.3 mi² of it (11.5%) is water (USGS 2008).



Map 1. Location of Montauk, NY

Historical/Background

Montauk was originally inhabited by the Montauket tribe, who granted early settlers permission to pasture livestock here, essentially the only function of this area until the late 1800s. The owner of the Long Island Railroad extended the rail line here in 1895, hoping to develop Montauk "the first port of landing on the East Coast, from which goods and passengers would be transported to New York via the rail. While his grandiose vision was not fulfilled, the rail provided the necessary infrastructure for the transportation of seafood, and Montauk soon became the principal commercial fishing port on the East End. In the early 1900s, the railroad also brought recreational fishermen to the area from the city by the car-load aboard the

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[1] These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

[2] For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

'Fishermen's Special', depositing them right at the dock where they could board sportfishing charter and party boats." Montauk developed into a tourist destination around that time, and much of the tourism has catered to the sportfishing industry since (Montauk Sportfishing 2005).

Demographics[3]

According to Census 2000 data, Montauk had a total population of 3,851, up 28.3% from a reported population of 3,001 in 1990. Of this 2000 total, 51.3% were males and 48.7% were females. The median age was 39.3 years and 77.4% of the population was 21 years or older while 17.7% were 62 or older.

Montauk's age structure (Figure 1) showed large variation between sexes in different age groups. It is important to note that the differences appear dramatic because this population is small. In the age group including people from 20 to 29 years old, there were more than twice as many males as females in Montauk. A similar pattern exists in the 30 to 39 year age group. This is probably because males come to the area to work after high school for demanding labor jobs such as landscaping and construction. Females do not traditionally seek after these types of jobs that are available in Montauk.

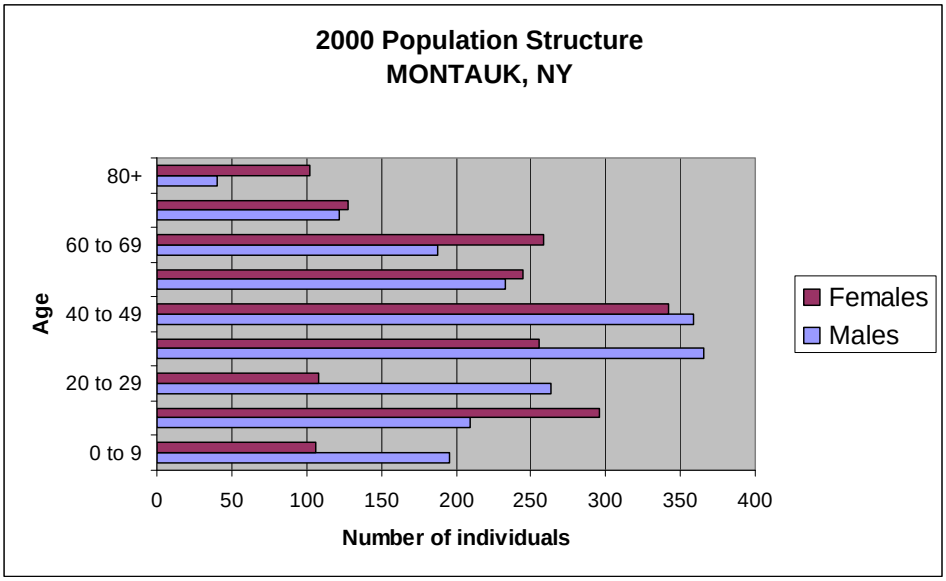

Figure 1. Montauk's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population of Montauk was White (88.2%), with 0.9% of residents Black or African American, 0.1% Native American, 0.8% Asian, and none Pacific Islander or Hawaiian (Figure 2). A reported 23.9% of the population identified themselves as Hispanic/ Latino (Figure 3). Residents linked their backgrounds to a number of different ancestries including: Irish (26.5%), German (17.3%) and Italian (13.1%). With regard to region of birth, 61.1% were born in New York, 11.1% were born in a different state and 27.0% were born outside of the U.S. (including 21.2% who were not United States citizens).

[3] While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

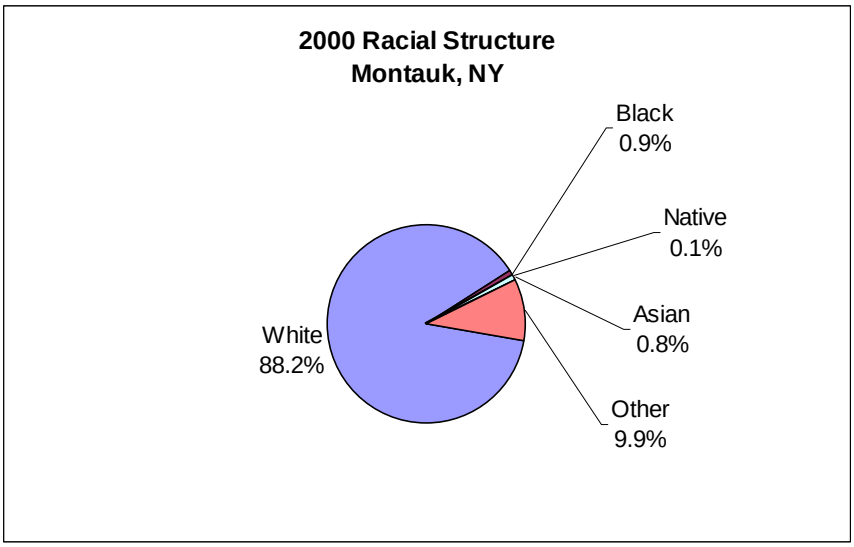

Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

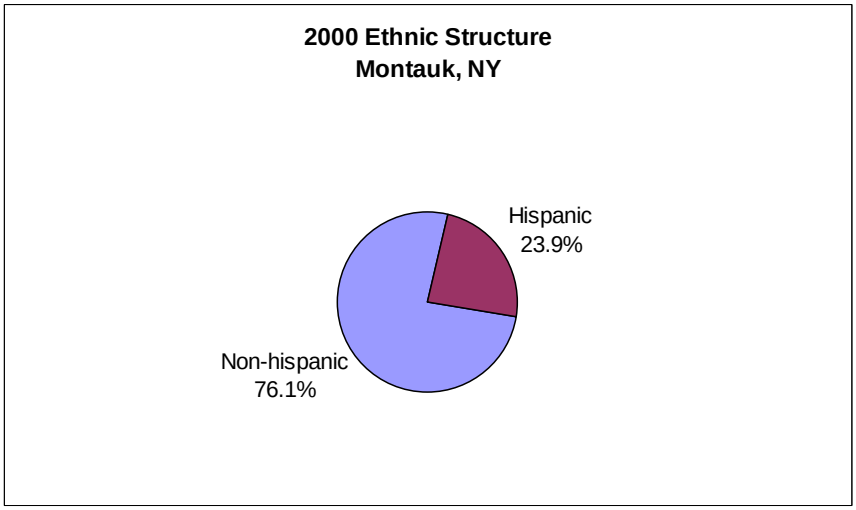

Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 69.7% of the population, only English was spoken in the home, leaving 30.3% in homes where a language other than English was spoken, including 15.6% of the population spoke English less than "very well" according to the 2000 Census.

Of the population 25 years and over, 84% were high school graduates or higher and 24.8% had a bachelor's degree or higher. Again of the population 25 years and over, 7.6% did not reach ninth grade, 8.4% attended some high school but did not graduate, 31.9% completed high school, 19.6% had some college with no degree, 7.8% received an associate's degree, 17.0% earned a bachelor's degree, and 7.8% received either a graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Suffolk County was Catholic with 72 congregations and 734,147 adherents. Other prominent congregations in the county were Jewish (48 with 100,000 adherents), United Methodist (47 with 22,448 adherents), Episcopal (40 with 16,234 adherents),

Evangelical Lutheran Church (26 with 19,378 adherents), and Muslim (9 with 12,139 adherents). The total number of adherents to any religion was up 3.8% from 1990 (ARDA 2000).

Issues/Processes

Some fishermen are concerned about the accuracy of their assigned historical landings by species for fisheries (often used for promulgating new regulations), as the method used to land fish in New York varies from that in most other states. Called the "box method" it involves fish being boxed at sea, then landed at a consignment dock and from there shipped to Hunts Point Market in the Bronx, New York. Prior to the implementation of dealer electronic reporting NMFS port agents counted the number of boxes landed from each vessel and received a species breakdown from the dock manager (who did not open the boxes but rather based the breakdown on his knowledge of the vessel's general fishing patterns). This system allowed greater potential for accidental misreporting. Now, the boxes are landed at the consignment dock and immediately shipped to Fulton, where the dealer opens the boxes and reports the landings. (Further, individual fishermen report using VTR, logbooks and other methods.)

While this method is more accurate in terms of the number and type of fish landed, it can still lead to another type of accidental reporting error. That is, landings are assigned to the incorrect state. This can have inequitable effects on states should an allocation scheme be developed, such as the one for summer flounder, that bases a state's allocation on the landings of a particular species in that state.

The docks make money by charging $10-12 per box (2007 prices) and by selling fuel. Catch limits and trip limits reduce the number of boxes to be shipped, and have made it very difficult for the docks to stay in business. New York is losing much of its infrastructure, and many of the docks have closed or changed hands in recent years.[4]

Inlet Seafood, the largest seafood packing operation in the state, recently expanded their facility to include a restaurant and convenience store, which met with considerable opposition from those living in the surrounding neighborhood, as residents were concerned about a resulting increase in traffic (Packer and McCarthy 2005). There are very strict zoning regulations in the town, which make it very difficult for any industry located on the waterfront to expand (McCay and Cieri 2000). There was also a bill proposed recently to limit beach access by vehicles in areas where coastal erosion is a problem, which would restrict access to many of the spots favored by surf casters in Montauk (Anonymous 2005a). There is also concern that recent regulations reducing allowable catches of certain species by recreational fishermen will have a negative impact on the party and charter fishing industry (Anonymous 2004).

The Long Island Power Authority is seeking permission to construct a wind farm off Long Island, a proposal which has met with opposition from commercial fishermen in Montauk and elsewhere on the island, because the turbines will block access to a highly productive squid fishery (Anonymous 2005b). The lobstermen working out of Montauk have seen their industry decline largely because of the prevalence of shell disease in lobsters taken from Long Island Sound (von Bubnoff 2005).

Cultural attributes

Montauk has several annual festivities that celebrate sport fishing and one that celebrates commercial fishing. The Blessing of the Montauk Fleet takes place in June. The Grand Slam Fishing Tournament has been in Montauk since 2002. The Harbor Festival at Sag Harbor, which

[4] Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

is located next to Montauk, is celebrated in September. There is also a Redbone Fishing Tournament, the Annual Striped Bass Derby (13th year in 2005), and the Annual Fall Festival (24th year in 2005), which is includes shellfish related activities such as a clam chowder festival and clam shucking (Montauk Chamber of Commerce nd). There is also a monument in Montauk dedicated to over 100 commercial fishermen from the East End who have lost their lives at sea over the years (Oles 2005).

INFRASTRUCTURE

Current Economy

The majority of the employers in Montauk are seasonal and dependent on the tourist industry, including restaurants and hotels. Probably the largest seasonal employer is Gurney's Inn, which is a resort hotel, spa, and conference center, open year round, with 350 employees during the summer months.[5] "With the exception of a few resorts and retail businesses, (Inlet Seafood) is one of the only full-time, year-round employers in Montauk, employing between four and six dock workers, a secretary, and a manager. All of the employees live in Montauk or East Hampton, but housing is a problem due to the high cost of living in the area. Labor turnover is low due to the ability of the dock to provide equitable wages and predictable pay throughout the year. The dock does compete with landscaping and construction companies for labor, especially from among immigrant populations. All of the dock workers are immigrants from Central and South America" (Oles 2005). Many of the fishermen have had to learn Spanish to communicate with the dock workers. This has been a dramatic change within the last 5 years, said NMFS port Agent Erik Braun. He also stated that there are no new fishermen starting up, and the children of fishermen, even those that are doing well, are not encouraged to enter into this business.[6] The marinas here also employ a large number of people, including Montauk Marine Basin, with 21 employees during the summer months.[7]

According to the U.S. Census 2000[8], 61.5% (1,944 individuals) of the total population 16 years of age and over were in the labor force (Figure 4), of which 7.7% were unemployed, none were in the Armed Forces, and 53.8% were employed.

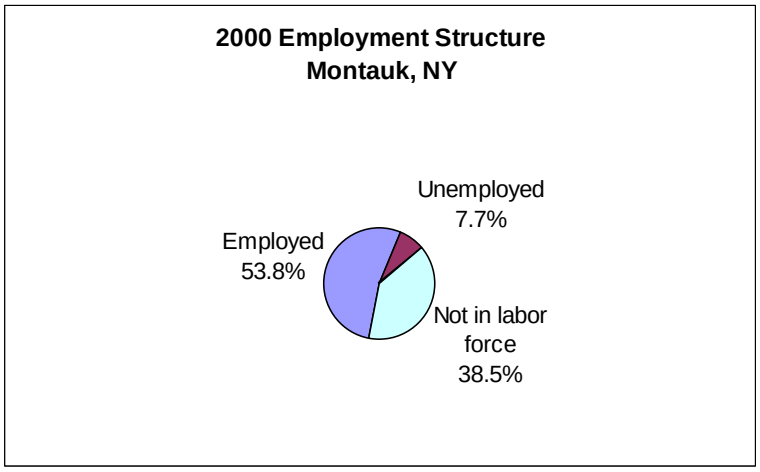

Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

[5] Personal communication, Gurney's Inn, 290 Old Montauk Highway, Montauk, NY 11954, July 19, 2005.
[6] Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005
[7] Personal communication, Montauk Marine Basin, 426 W. Lake Dr., Montauk, NY 11954, July 19, 2005
[8] Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 103 positions or 6.1% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 314 positions or 18.5% of jobs. Arts, entertainment, recreation, accommodation and food services (20.3%), construction (18.5%) and retail trade (10.1%) were the primary industries.

Median household income in Montauk was $42,329 (up 32.9% from $23,875 in 1990 [US Census Bureau 1990]). For full-time year round workers, males made approximately 41.6% more per year than females.

The average family in Montauk consists of 2.90 persons. With respect to poverty, 8.3% of families (unchanged from 1990 [US Census Bureau 1990]) and 10.6% of individuals earned below the official U.S. Census poverty threshold. This threshold is $8,794 for individuals and ranges from $11,239-35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 40.0% of all families (of any size) earned less than $35,000 per year.

In 2000, Montauk had a total of 4,815 housing units of which 33.1% were occupied and 61.7% were detached one unit homes. Less than 10% (9.4%) of these homes were built before 1940. Mobile homes, boats, RVs, and vans accounted for 4.0% of the total housing units; 84.1% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was $290,400. Of vacant housing units, 62.9% were used for seasonal, recreational, or occasional use, while of occupied units 34.3% were renter occupied.

Government

Montauk is an unincorporated village within East Hampton Township. The Town Board runs the town (Town of East Hampton nd). The town was established in 1788. Although Montauk is not incorporated, there is one incorporated village situated within the East Hampton's borders, the Village of East Hampton, and part of a second village, Sag Harbor (Town of East Hampton nd).

Fishery involvement in government

The Town Board of East Hampton organized a “Fishing Committee” to represent the fishing industry’s interests in the development of the town’s comprehensive plan (Oles 2005).

Institutional

Fishing associations

The Long Island Commercial Fishing Association, located in Montauk, promotes commercial fishing throughout Long Island (Oles 2005). The Montauk Tilefish Association (MTA) “is a registered non-profit organization whose objective is to provide an organizational structure for making collective decisions for its members. “The MTA also provides member protection under the Fishermen’s Collective Marketing Act” (Oles 2005). Further, it “has worked to create and foster a fisheries management regime that is efficient and encourages resource stewardship at the local level. Other important outcomes from this collaboration include fresher fish for the market and a more stable operating environment” (Kitts et al. 2007).

The New York Seafood Council is the larger association representing fishing interests in the state. “The New York Seafood Council (NYSC) is an industry membership organization comprised of individuals, businesses, or organizations involved in the harvesting, processing, wholesale, distribution or sale of seafood products or services to the seafood industry in New York” (NYSC 2008).

Fishing assistance centers

Information on fishing assistance centers in Montauk is unavailable through secondary data collection.

Other fishing-related organizations

The Montauk Boatmen's and Captain's Association has a membership of over 100 captains of charter and party boats, and is one of the only organized, politically active charter boat associations in New York (Oles 2005). The Montauk Surfcasters Association is an organization of surf fishermen with over 900 members who wish to preserve their access to surf casting on the East End beaches of Long Island. They hold beach clean-ups and educate the public about the proper use of the beach (Montauk Surfcasters Association nd).

Physical

The fishing fleet is located in Lake Montauk, which opens to the north onto Block Island Sound. "Montauk is connected to points west via Route 27, and the Metropolitan Transportation Authority's Long Island Rail Road." Montauk Airport on East Lake Drive provides another mode of access to the area, but is strictly for small, private aircraft. On the easternmost tip of Long Island, Montauk is roughly 117 miles from New York City, but only about 20 miles by boat from New London, CT. There is one small airport in Montauk, and Long Island Islip MacArthur Airport is 67 miles away (MapQuest 2005). During the summers, a ferry service runs between Montauk and New London on weekends, daily to Block Island, RI, and occasionally to Martha's Vineyard (Viking Fleet nd). There are also three different ferry services that run between New London and nearby Sag Harbor (Easthampton.com nd). Most fish landed in Montauk is sold at the Fulton Fish Market in New York City (McCay and Cieri 2000).

The infrastructure needed for a commercial and sport fishing fleet is available in the village, including docks with off-loading facilities and other services that commercial fishermen need to land their catch (NYSC 2008). Montauk used to have five docks used by the commercial fishing industry for packing out fish, but they now only have two.[9] Inlet Seafood Company, a corporation owned by six Montauk fishermen (NYSC 2008), includes a dock with unloading and other services, and is the largest fish packing facility in the state (Easthampton Star 2003). There is another dock servicing commercial fishermen, but this dock is barely surviving financially.[10] There are also at least fourteen marinas used by the sportfishing industry (Oles 2005).

[9] Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005
[10] Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

INVOLVEMENT IN NORTHEAST FISHERIES[11]

Commercial

The village of Montauk is the largest fishing port in the state of New York. Montauk's main industry has been fishing since colonial times, and it continues to be an important part of its economy and traditions (Oles 2005). Montauk is the only port in New York still holding on to a commercial fishing industry.[12] Montauk's location naturally provides a large protected harbor on Lake Montauk and is close to important fishing grounds for both commercial and recreational fishermen.

Montauk has a very diverse fishery, using a number of different gear types and catching a variety of species; in 1998, there were a total of 90 species landed in Montauk (McCay and Cieri 2000). According to NMFS Landings Data, the top three valued fisheries in 2003 were Squid ($2.3million), Golden Tilefish ($2.1million), and Silver Hake ($2.1million). There was a striking difference between the 2006 scallop landings value and the value for the 1997-2006 average. The 2006 values were over $1.5 more than the nine year average (Table 1).

There used to be a number of longline vessels that fish out of Montauk, including 4-5 fishing for tilefish and up to 8 fishing for tuna and swordfish. Additionally, a number of longline vessels from elsewhere in New York State and New Jersey sometimes land their catch at Montauk (NYSC 2008). As of April 2007, there were 3 tilefish longliners in Montauk, one of which has bought out a fourth.[13] There were also 35-40 trawlers based in Montauk, with a number of others that unload their catch here, and between 10-15 lobster vessels (NYSC 2008). The six owners of Inlet Seafood each own 1-2 trawlers.[14] There are also a number of baymen working in the bays around Montauk catching clams, scallops, conch, eels, and crab as well as some that may fish for bluefish and striped bass. However, these baymen may move from one area to another depending on the season and fishery, and as a result may not be a part of the permanent fleet here (NYSC 2008).

The number of vessels home ported in Montauk showed a slightly decreasing trend between 1997 and 2006, while the number of vessels whose owner's city was Montauk showed a slight increasing trend over the same time period. Both the level of fishing home port and landed port also stayed fairly consistent, with a jump in 2005, but generally ranging from over $9 million to over $16 million for the 1997-2006 year period (Table 2).

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[11] In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

[12] Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

[13] José Montañez, MAFMC, April 18, 2007; NMFS landings data.

[14] Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

Appendix 17

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landing in Montauk

	Average from 1997-2006	2006 only
Squid, Mackerel, Butterfish	3,146,620	3,640,565
Tilefish	2,366,489	2,942,310
Smallmesh Groundfish[15]	2,028,574	1,198,711
Summer Flounder, Scup, Black Sea Bass	1,964,880	3,900,690
Other[16]	1,652,214	1,379,958
Largemesh Groundfish[17]	646,634	426,272
Lobster	585,627	613,598
Monkfish	373,486	643,731
Scallop	366,169	1,869,196
Bluefish	91,346	123,277
Skate	29,360	40,981
Dogfish	9,895	1,323
Herring	413	874
Surf Clams, Ocean Quahog	20	150
Salmon	9	90
Red Crab	5	CONFIDENTIAL

Vessels by Year[18]

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# vessels (owner's city)	Level of fishing home port ($)	Level of fishing landed port ($)
1997	165	89	9,222,288	13,556,572
1998	146	88	9,652,978	12,080,693
1999	158	98	10,863,508	12,124,707
2000	166	103	10,286,306	13,139,382
2001	160	103	12,302,916	13,231,619
2002	153	99	11,981,882	11,131,789
2003	152	104	12,405,663	11,033,366
2004	152	98	11,243,881	13,061,890
2005	144	96	14,104,902	16,475,642
2006	145	96	13,517,890	16,781,742

 # Vessels home ported = No. of permitted vessels with location as homeport
 # Vessels (owner's city) = No. of permitted vessels with location as owner residence[19]
Level of fishing home port ($) = Landed value of fisheries associated with home ported vessels
Level of fishing landed port ($) = Landed value of fisheries landed in location

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[15] Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)
[16] "Other" species includes any species not accounted for in a federally managed group
[17] Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock
[18] Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.
[19] The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

Montauk is the home port of a large charter and party boat fleet, and a major site of recreational fishing activity (Oles 2005). The facilities supporting the recreational fishing industry include six bait and tackle shops and 19 fishing guide and charter businesses.

According to one website there are at least 27 fishing charters in Montauk. Montauk has been called the "sport fishing capital of the world", and even has its own magazine dedicated to Montauk sportfishing (Montauk Sportfishing nd). Between 2001- 2005, there were 122 charter and party vessels making 18,345 total trips registered in logbook data by charter and party vessels in Montauk carrying a total of 185,164 anglers.

Subsistence

Information on subsistence fishing in Montauk is either unavailable through secondary data collection or the practice does not exist.

FUTURE

The comprehensive plan for the town of East Hampton recognizes the importance of the commercial and recreational fishing industries here, and includes a commitment to supporting and retaining this traditional industry (Oles 2005). There has been discussion of developing a large wholesale seafood market on Long Island similar to the Fulton Fish Market so that fish caught here could be sold directly on Long Island rather than being shipped to New York City (NY Sea Grant nd).

Nonetheless Erik Braun, the port agent for this part of New York, was not hopeful about the future of the fishing industry. He said there are no new fishermen getting into commercial fishing, and that even those who have done well are not encouraging their children to get into the industry. Much of the fishing infrastructure is disappearing, and those who own docks can make much more by turning them into restaurants. Montauk is the one port still holding on to a commercial fishing industry, however.[20]

REFERENCES

Anonymous (Anon). 2004. New limitations imperil fish biz. New York Post, 2004 Apr 4.

Anon. 2005a. Questions of turf on LI surf. Newsday (NY): Nassau and Suffolk Ed, 2005 Jun 10.

Anon. 2005b. The fold: LIPA's windmill farm. Newsday (NY): Nassau and Suffolk Ed, 2005 Apr 25.

Association of Religion Data Archive (ARDA). 2000. Interactive maps and reports, counties within one state [cited Feb 2007]. Available from: http://www.thearda.com/

Easthampton.com nd. Web site [cited Apr 2007]. Available at: http://www.easthampton.com/

Easthampton Star. 2003. News story [cited Apr 2007]. Available at: http://www.easthamptonstar.com/

Kitts, Andrew, Patricia Pinto da Silva and Barbara Rountree. 2007. The evolution of collaborative management in the Northeast USA tilefish fishery. Mar Pol 31(2):192-200.

MapQuest. 2005. Web site [cited May 2007]. Available at: http://www.mapquest.com/

McCay B, Cieri M. 2000. Fishing ports of the Mid-Atlantic: a social profile. Report to the Mid-Atlantic Fishery Management Council, Dover, Delaware, February 2000. Available at: http://www.st.nmfs.gov/st1/econ/cia/McCay_Port_Study-Apr2000_Revised.pdf

[20] Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

Montauk Chamber of Commerce. nd. Web site [cited Apr 2007]. Available at: http://www.montaukchamber.com/

Montauk Sportfishing. nd. Web site [cited Apr 2007]. Available at: http://www.montauksportfishing.com/

Montauk Surfcasters Association. nd. Web site [cited Apr 2007]. Available at: http://www.surfcasters.org/

New York Sea Grant. nd. Seafood Science and Technology pages [cited Apr 2007]. Available at: http://www.seagrant.sunysb.edu/

New York Seafood Council (NYSC). 2008. Web site [cited Jul 2006]. Available at: http://www.nyseafood.org/

Oles B. 2005. Montauk, New York Community Profile(draft). Fishing Communities of the Mid-Atlantic. Contact Patricia.Pinto.da.Silva@noaa.gov for information.

Packer D, McCarthy J, editors. 2005. Appendix I to: Essential Fish Habitat Source Document Update Memo: Tilefish, Lopholatilus chamaeleonticeps, life history and habitat characteristics. Mid-Atlantic Fisheries Management Council. Available at: http://www.mafmc.org/mid-atlantic/mafmc.htm

Town of East Hampton. nd. Web site [cited Apr 2007]. Available at: http://www.town.east-hampton.ny.us/

US Census Bureau. 1990. 1990 Decennial Census [cited Jun 2007]. Available at: http://factfinder.census.gov/

US Census Bureau. 2000a. United States Census 2000 [cited July 2007]. Available at: http://www.census.gov/

US Census Bureau. 2000b. Poverty thresholds 2000 [cited June 2007]. Available at: http://www.census.gov/hhes/www/poverty/threshld/thresh00.html

Viking Fleet. nd. Web site [cited Apr 2007]. Available at: http://www.vikingfleet.com/

Von Bubnoff A. 2005. Sea birds fly pollution to the Arctic. Nature, 2005 Jul 14.

Appendix 17

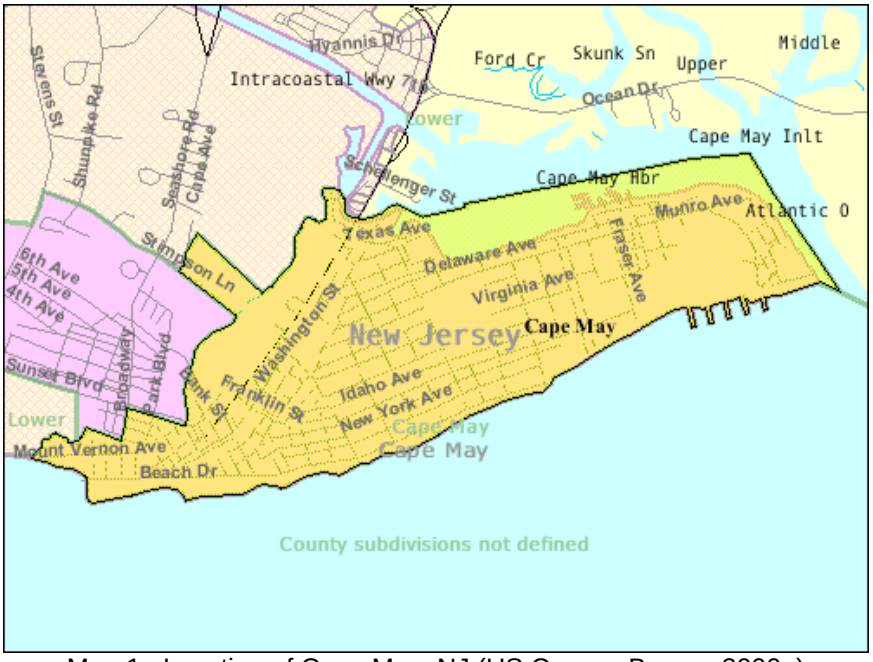
CAPE MAY, NJ[1]

Community Profile[2]

PEOPLE AND PLACES

Regional orientation

The city of Cape May, New Jersey (38.94°N, 74.91°W), is located in Cape May County (see Map 1). It is at the southern tip of the state of New Jersey on Cape Island at the end of Cape May Peninsula, with the Atlantic Ocean to the east and Delaware Bay to the west (USGS 2008).



Map 1. Location of Cape May, NJ (US Census Bureau 2000a)

Historical/Background

Cape May is part of Cape Island at the southern tip of Cape May Peninsula. The island was artificially created in 1942 when the U.S. Army Corps of Engineers dredged a canal that passes through to the Delaware Bay (City of Cape May nd). Fishing and farming have been important in this area since its beginnings, and whaling, introduced by the Dutch, was a significant industry in Cape May for roughly a century beginning in the mid-1600s. In the 18th century, this area became a summer resort for wealthy residents of Philadelphia wishing to escape the crowded city during the summer months, and is known as "America's oldest seaside resort." Because of this history and because of a fire that destroyed much of the city in 1878, Cape May has numerous Victorian homes and hotels, and was declared a National Historic Landmark City in 1976 (Cape Publishing 2005). "Today commercial fishing is still the backbone of the county and is the second largest industry in Cape May

[1] These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

[2] For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

County. The port of Cape May is considered one of the largest and busiest seaports along the eastern seaboard and generates more than $500 million annually"(Cape May County nd).

Demographics[3]

According to the Census 2000 data[4], Cape May had a total population of 4,034, down from a reported population of 4,668 in 1990 (US Census Bureau 1990). Of this total in 2000, 49.3% were males and 50.7% were females. The median age was 47.4 years and 77.7% of the population was 21 years or older while 32.4% were 62 or older.

Cape May's population structure by age group (see Figure 1) was similar for all age categories. However, men were dominant for the population between 0 and 29 years, and then the population for male and female was the same until age 40 when it switched to female dominance through 80 years and over. Further, unlike the U.S. as a whole, the middle years are overall in lower percentages than the youngest and oldest. This large number of males in the 20-29 age bracket followed by a drop in the ages 30-59 is also very unlike most other fishing communities.

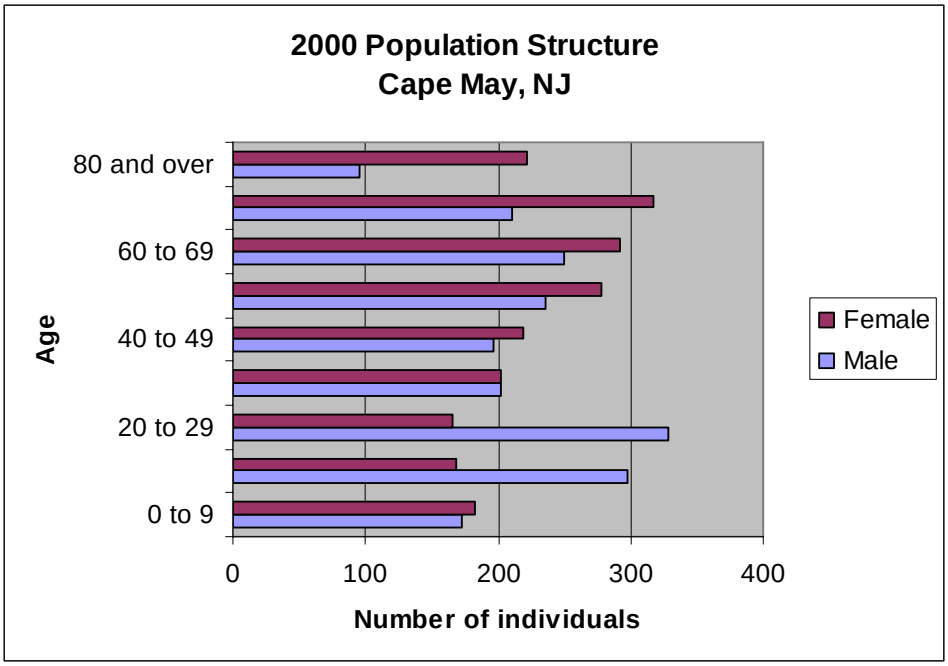


Figure 1. Cape May's population structure by sex in 2000 (US Census Bureau 2000a)

The vast majority of the population of Cape May in 2000 was white (91.0%), with 5.9% black or African American, 0.6% Native American or Alaskan, 0.8% Asian, and 0.07% Pacific Islander or Hawaiian (see Figure 2). Only 3.8% of the population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their heritage to a number of European ancestries including: Irish (26.9%), German (21.9%), English (16.2%), Italian (14.2%), Polish (6.9%), French (3.5%), and Scottish (2.7%). With regard to region of birth, 25.6% of residents were born in New Jersey, 66.9% were born in a different state, and 6.1% were born outside the U.S. (including 2.4% who were not United States citizens).

[3] While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

[4] These and all census data, unless otherwise referenced, can be found at http://factfinder.census.gov/home/saff/main.html; census data used are for Cape May city

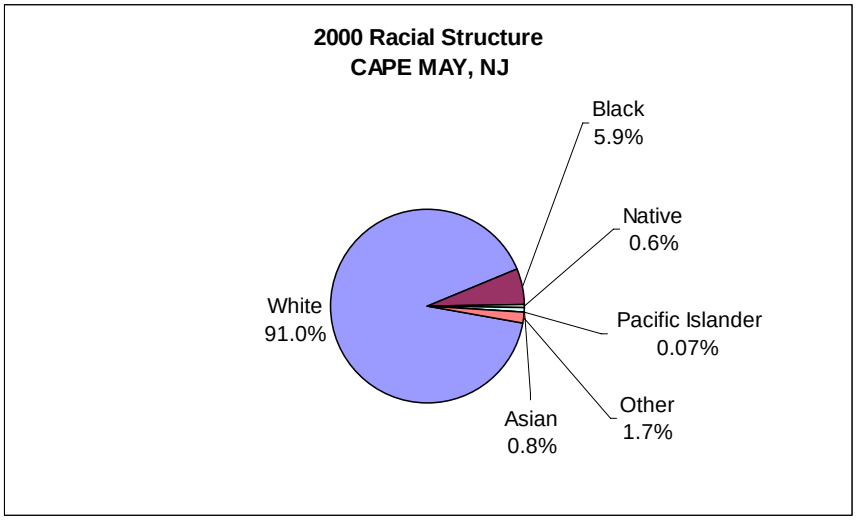


Figure 2. Racial Structure in 2000 (US Census Bureau 2000a)

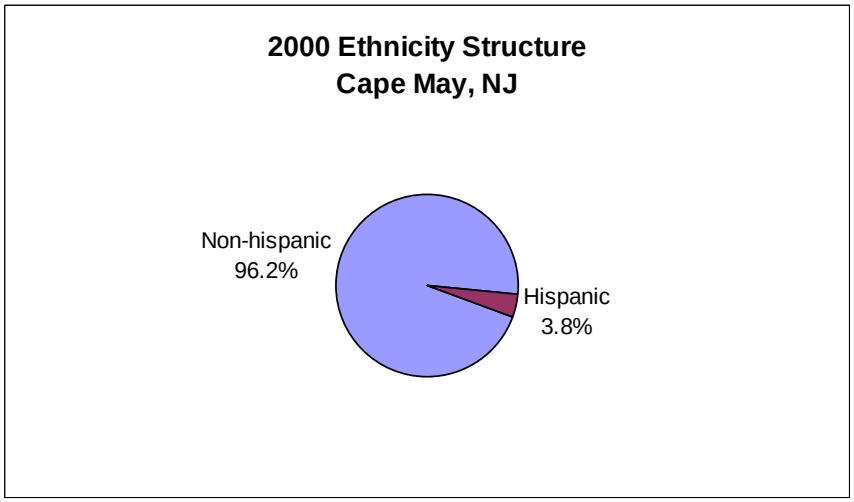


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 91.1% of the population in 2000, only English was spoken in the home, leaving 8.9% in homes where a language other than English was spoken, including 2.9% of the population who spoke English less than "very well" according to the US Census Bureau.

Of the population 25 years and over, 87.6% were high school graduates or higher and 30.8% had a bachelor's degree or higher. Again of the population 25 years and over, 2.6% did not reach ninth grade, 9.8% attended some high school but did not graduate, 30.5% completed high school, 20.1% had some college with no degree, 6.2% received an associate's degree, 19.0% earned a bachelor's degree, and 11.8% received a graduate or professional degree.

Although religious percentages are not available through U.S. Census data, according to the Association of Religion Data Archive in 2000 the religion with the highest number of congregations in Cape May County was Catholic, with 15 congregations and 32,307 adherents. Other prominent congregations were United Methodist (25 with 5,133 adherents), Episcopal (6 with 1,588 adherents) and Evangelical Lutheran Church in America (6 with 2,142 adherents). The total number of adherents to any religion was up 15% from 1990 (ARDA 2000).

Issues/Processes

Offshore wind farms have been proposed for four locations off of Cape May County, and fishermen are concerned about the impact wind turbines could potentially have on the fish or on their access to the fisheries (AP 2005). In 2006, rising fuel costs were having a detrimental effect on the charter fishing industry, especially on those boats going further out to go canyon fishing. The boat owners have been forced to raise their prices, and many potential customers were thinking twice about taking a trip offshore (McCann 2006).

Like in many other fishing communities with a significant tourism industry, commercial fishermen in Cape May are often competing with recreational fishing and with residential development for space. Lower Township, the municipality where the fishing industry is based, currently has three "marine development" zones in place, which are mostly used by recreational businesses; Schellenger's Landing, where much of the commercial fishing industry is based, is specially zoned for "marine general business" to permit expansion of the fishing-related businesses located here (McCay and Cieri 2000).

Cultural attributes

The Lobster House dock and fish packing plant operates a 45-minute tour to teach visitors about Cape May's commercial fishing industry (CMCDT nd). The Cape May County Fishing Tournament is one of the longest continuously running fishing tournaments on the East Coast (Cape May County nd). Cape May has a fisherman's memorial, with a woman and child looking out to sea, which was created thanks to a now defunct fishermen's wives association (McCay and Cieri 2000). Cape May County holds an annual seafood festival each July (Cape May Lewes nd); the commercial fishing industry reportedly has little involvement in the festival (McCay and Cieri 2000). A significant seafood festival is being organized (August 2007) to promote Cape May seafood as well as preparing for the Annual Seafood Cook-off held in New Orleans, LA. The Garden State Seafood Association is helping to coordinate this event along with many local restaurants and other groups throughout the state.[5]

INFRASTRUCTURE

Current Economy

"Like many Jersey Shore communities, much of Cape May's and Wildwood's economies are dependent on seasonal tourism - which is dependent both on the weather and the overall state of the economy. The year-round character of commercial fishing is a major factor in keeping these communities going in the off-season" (CMCPCBA nd). Commercial fishing is the second largest industry in Cape May County after tourism (CMCDT nd). The tenth largest employer (140 employees) in Cape May County is Snow's/Doxsee Inc. (NJDA nd; CMCCC nd), with an 86,000 square-foot plant in Cape May that produces clam products including chowder, soups, canned clams, clam juice, and seafood sauces. Cold Spring Fish and Supply employs 500 people, and is the third largest employer in the county. Other top employers in the county include Burdette Tomlin Memorial Hospital (now the Cape Regional Medical Center) (1100), Acme Markets (600), WaWa (485), Holy Redeemer Visiting Nurse (250), and Super Fresh (250) (CMCCC nd). Cape May also has the only basic training facility for the U.S. Coast Guard (USMilitary.com 2007).

According to the U.S. Census 2000, 57.5% (1,985 individuals) of the total population over 16 years of age and over was in the labor force (Figure 4), of which 3.8% were unemployed, 14.2% were in the armed forces, and 39.5% were employed.

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[5] Community Review Comments, Greg DiDomenico, Garden State Seafood Association, 212 West State Street, Trenton, NJ, 08608, August 24, 2007

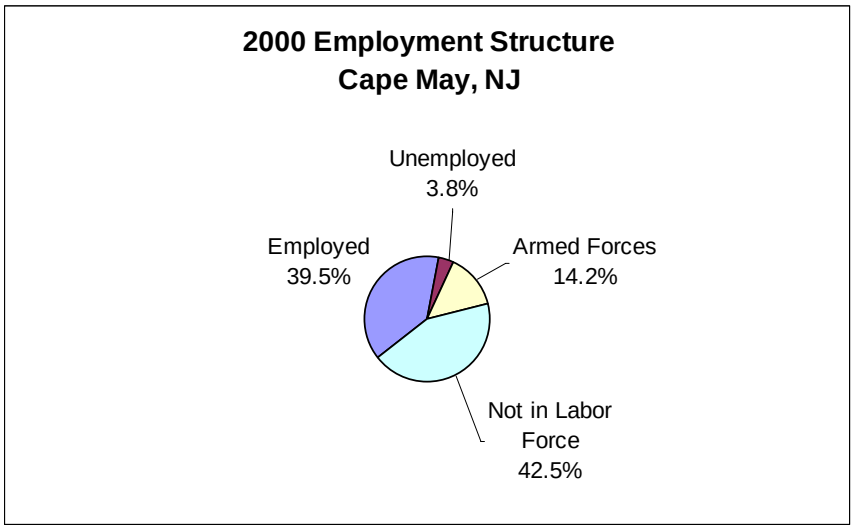

Figure 4. Employment Structure in 2000 (US Census Bureau 2000a)

According to the U.S. Census 2000[6], jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 5 positions or 0.4% of all jobs. S elf employed workers, a category where fishermen might be found, accounted for 205 positions or 15% of jobs. Arts, entertainment, recreation, accommodation and food services (21.1%), retail trade (16.4%), and educational, health and social services (13.6 %), and finance, insurance, real estate and rental and leasing (10.6%) were the primary industries.

Median household income in Cape May in 2000 was $33,462 (up 21.4% from $27,560 in 1990 [US Census Bureau 1990]) and median per capita income was $29,902. For full-time year round workers, males made approximately 13.0% more per year than females.

The average family in Cape May in 2000 consisted of 2.69 persons. With respect to poverty, 7.7% of families (up from 2.7% in 1990 [US Census Bureau 1990]) and 9.1% of individuals were below the U.S. Census poverty threshold. This threshold is $8,794 for individuals and ranges from $11,239 through $35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 36.7% of all families in Cape May (of any size) earned less than $35,000 per year.

In 2000, Cape May had a total of 4,064 housing units, of which 44.8% were occupied and 40.8% were detached one unit homes. Fewer than a third (29.1%) of these homes were built before 1940. Mobile homes and boats accounted for only 0.3% of the total housing units; 82.3% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was $212,900. Of vacant housing units, 93.1% were used for seasonal, recreational, or occasional use. Of occupied units, 43.2% were renter occupied.

Government

The City of Cape May operates under the Council/Manager form of government. Cape May voters directly elect the Mayor. The person elected serves a four year term. The mayor presides over the council and has a vote. There are four members of Council, in addition to the Mayor. Their terms are staggered, where the members of the first council draw lots to determine who serves a four year term. The remaining three will serve a two year term. Subsequently, all councilmen elected serve for four years (City of Cape May nd).

[6] Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Fishery involvement in government

The Cape May County Planning Board expresses in its comprehensive plan its policies regarding commercial fishing, which include promoting and encouraging land use policies which benefit the commercial fishing industry and protecting the fishing industry from economic or environmental harm by opposing projects which may have a negative effect (Cape May County nd).

NOAA Fisheries Statistics Office has port agents based in Cape May. Port agents sample fish landings and provide a 'finger-on-the-pulse' of their respective fishing communities (NOAA FSO nd).

Institutional

Fishing associations

Garden State Seafood Association (GSSA) in Trenton is a statewide organization of commercial fishermen and fishing companies, related businesses and individuals working in common cause to promote the interests of the commercial fishing industry and seafood consumers in New Jersey. Lunds, Atlantic Capes, and Cold Spring are all members of the GSSA. Lunds and Atlantic Capes are founding contributors of the National Fisheries Institute, Scientific Monitoring Committee, which raises millions of dollars through the Research Set-Aside Program. Rutgers University is a major contributor to these science-based efforts and has an office in Cape May.[7]

The Jersey Coast Anglers Association (JCAA) is an association of over 75 saltwater fishing clubs throughout the state. Founded in 1981, the purpose of the organization is to unite and represent marine sport anglers to work towards common goals. The JCAA website (www.jcaa.org) also provides links for many NJ anglers associations.

Fishery assistance centers

The Cape May County government, along with the State of New Jersey, developed the Cape May County Revolving Fishing Loan Program. Instituted in 1984, it is designed "to help commercial, charter and party boat fishermen with low interest loans for safety and maintenance of fishing vessels." More than $2.5 million has been loaned to date (Cape May County nd). The Cape May County Technical School integrates projects such as commercial fishing net mending and gear construction and operating a fish market in their curriculum to prepare students for careers in the commercial fishing industry (CMCTSD nd).

Other fishing related organizations

The Cape May County Party and Charter Boat Association is an organization of small recreational fishing boats located along the coast of Southern New Jersey. The Cape May Marlin & Tuna Club hosts several tournaments throughout the year.

Physical

Cape May, like all of New Jersey's seafood industry, is within easy reach of airports in Newark, New York and Philadelphia. All these offer next-day service for fresh seafood to virtually every major market in the world. The container port in Newark/Elizabeth handles hundreds of thousands of shipping containers each month, many of them packed with chilled or frozen food products (NJ Fishing nd). Cape May also has extensive bus service to the surrounding area as well as Philadelphia and Atlantic City (NJ Transit nd). There is also a ferry terminal connecting Cape May to Lewes, DE. It is 48 miles from Atlantic City, NJ, 87 miles from Philadelphia, PA, and 169 miles from New York City.

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[7] Community Review Comments, Greg DiDomenico, Garden State Seafood Association, 212 West State Street, Trenton, NJ, 08608, August 24, 2007

Commercial and recreational fishing docks are scattered around Cape May or, more properly, Lower Township, but centered in an area known as Ocean Drive (McCay and Cieri 2000), "a road which leaves the main highway and crosses the marshes toward the Diamond Beach section of Lower Township and Wildwood Crest, and Schellenger's Landing, just over a large bridge that connects the mainland with the center of Cape May and its beaches." [8] The fishing industry is really based in Lower Township, rather than within Cape May proper. Schellenger's Landing has a dock and fish market; a number of large vessels are located here. In the vicinity are also a marine railway, two marinas, two bait and tackle shops, two marine suppliers, and a "marlin and tuna club". Some commercial fishing boats also use Cape May's recreational marinas (McCay and Cieri 2000). Two Mile Landing is a marina with recreational boats and a restaurant; some commercial fishing activity is found here as well (McCay and Cieri 2000).

INVOLVEMENT IN NORTHEAST FISHERIES[9]

Commercial

The combined port of Cape May/Wildwood is the largest commercial fishing port in New Jersey and is one of the largest on the East Coast. Cape May/Wildwood is the center of fish processing and freezing in New Jersey. Some of the largest vessels fishing on the East Coast are home ported here. Cape May fishing vessels have frequently been responsible for developing new fisheries and new domestic and international markets. The targeted species are diverse; fisheries focus on squid, mackerel, fluke, sea bass, porgies, lobsters and menhaden. Some of the boats out of Wildwood are also targeting surf clams and ocean quahogs (NJ Fishing nd).

F.H. Snow's Canning Co/Doxsee is a large clam cannery based in Lower Township (not Cape May)[10], and the only domestic manufacturer to harvest its own clams. Snow's/Doxsee has the nation's largest allocation for fishing and harvesting ocean clams. Established in 1954 in Cape May, Lund's Fisheries, Inc., is a freezer plant and a primary producer of various species of fish found along the Eastern Seaboard of the USA. It is also a member of the Garden State Seafood Association. There is one other exporter of seafood in Lower Township[11], the Atlantic Cape Fisheries Inc. which exports marine fish and shellfish, oysters, scallops, clams and squids (NJDA nd). The Axelsson and Johnson Fish Company Inc. which used to export shad, marine fish, conch, American lobster, lobster tails, scallops and whole squid went out of business several years before the creation of this profile.[12]

The top species landed in Cape May in 2006 were scallops (over $23 million), squid, mackerel, butterfish (over $12 million) and summer flounder, scup, and black sea bass (over $1.9 million) (Table 1). Between 1997 and 2006 home ported vessels increased from 109 to 184 while the number of vessels whose owner's city was Cape May also increased from 73 to

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[8] Community Reviewer Comments, James Smith, Cape May County Planning. Comments received September 12, 2007.

[9] In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

[10] Community Reviewer Comments, James Smith, Cape May County Planning. Comments received September 12, 2007.

[11] Community Reviewer Comments, James Smith, Cape May County Planning. Comments received September 12, 2007.

[12] Community Review Comments, Walter Makowski, NMFS Port Agent, August 8, 2007

88 vessels. Additionally, home port value and landed port value also steadily increased over the same time period, with the exception of a decline in the later category in 2006 (Table 2).

Landings by Species

Table 1. Dollar value of Federally Managed Groups of Landings for Cape May

	Average from 1997-2006	2006 only
Scallop	22,263,937	23,677,160
Squid, Mackerel, Butterfish	7,584,550	12,375,958
Summer Flounder, Scup, Black Sea Bass	2,044,420	1,979,899
Other[13]	1,696,617	1,637,321
Surf Clams, Ocean Quahog	588,296	0
Lobster	420,312	8,861
Herring	412,103	2,896,122
Monkfish	322,895	397,841
Red Crab	40,358	0
Smallmesh Groundfish[14]	23,939	2,997
Bluefish	20,626	4,267
Skate	12,299	4,387
Largemesh Groundfish[15]	8,067	3,705
Dogfish	6,574	0
Tilefish	597	1,230

Vessels by Year[16]

Table 1. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port ($)	Level of fishing landed port ($)
1997	109	73	27,687,667	23,636,983
1998	105	68	27,614,763	25,770,007
1999	106	72	29,153,706	22,353,284
2000	116	74	30,488,271	23,936,235
2001	116	71	32,923,798	27,155,864
2002	118	72	34,529,920	28,312,296
2003	129	78	42,777,501	36,372,658
2004	135	73	62,308,441	60,630,752
2005	155	82	69,641,897	63,298,068
2006	184	88	75,058,370	42,989,748

 # Vessels home ported = No. of permitted vessels with location as homeport
 # Vessels (owner's city) = No. of permitted vessels with location as owner residence[17]
Level of fishing home port ($) = Landed value of fisheries associated with home ported vessels
Level of fishing landed port ($) = Landed value of fisheries landed in location

Recreational

In NJ the charter/party fleet is the largest on east coast. Many vessels are over 120ft long and carry over 150 people.[18] The Cape May County Party and Charter Boat Association lists several dozen charter and party vessels based out of the City of Cape May. There are 35

[13] "Other" species includes any species not accounted for in a federally managed group
[14] Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)
[15] Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock
[16] Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.
[17] The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.
[18] Community Review Comments, Bruce Freeman, NJ Coast Anglers Association, 1201 Route 37 East, Suite 9, Toms River, NJ 08753, October 2, 2007

vessels listed carrying 1-6 passengers, six vessels which can carry more than six passengers, and three party boats (NJ Fishing nd). The Miss Chris fleet of party boats makes both full- and half-day trips, targeting largely fluke and stripers for most of the year. The Porgy IV, another party boat, targets sea bass, blackfish, and flounder. Many of the charter boats go offshore canyon fishing (McCay and Cieri 2000). Between 2001- 2005, there were 56 charter and party vessels making 6,599 total trips registered in NMFS logbook data by charter and party vessels in Cape May, carrying a total of 116,917 anglers (NMFS VTR data). There are several fishing tournaments held throughout the year sponsored by the Cape May Marlin and Tuna Club.

Subsistence

Information on subsistence fishing in Cape May is either available through primary data collection or the practice does not exist.

FUTURE

Information on the future in Cape May was unavailable through secondary data collection.

REFERENCES

Associated Press (AP). 2005. Shore residents leery about offshore wind turbines. Associated Press State & Local Wire, 2005 Apr 14.

Association of Religion Data Archive (ARDA). 2000. Interactive Maps and Reports, Counties within one state [cited October 2005]. Available from: http://www.thearda.com/

Cape May County. nd. Official web site [cited Dec 2006]. Available at: http://www.co.cape-may.nj.us/

Cape May County Chamber of Commerce (CMCCC). nd. Community: Facts & Figures [cited Feb 2007]. Available at: www.cmccofc.com/chamber/facts_figures.htm

Cape May County Department of Tourism (CMCDT). nd. Escape to the Jersey Cape [cited Jun 2007]. Available at: http://www.beachcomber.com/Capemay/Tourism/natsites.html

Cape May County Party & Charter Boat Association (CMCPCBA). nd. Web site [cited Dec 2006]. Available at: http://www.fishingnj.com

Cape May County Technical School District (CMCTSD). nd. Natural Science Technology [cited Jun 2007]. Available at: http://www.capemaytech.com/NaturalSci.htm

Cape May Lewes.com. nd. Events [cited Jun 2007]. Available at: http://www.capemaylewes.com/Events.html

Cape Publishing. 2008. Cape May Magazine [cited Jun 2005]. Available at: http://www.capemay.com/

City of Cape May. nd. Official web site [cited Oct 2008]. Available at: http://www.capemaycity.com/

MapQuest. nd. Web site [cited Jul 2006]. Available at: http://www.mapquest.com

McCann C. 2006. Fuel costs sinking charter boat businesses. Press of Atlantic City, 2006 Aug 7.

McCay BJ, Cieri M. 2000. Fishing Ports of the Mid-Atlantic: A Social Profile. Report to the Mid-Atlantic Fishery Management Council, Dover DE. [cited Jan 2007]. Available at: http://www.st.nmfs.noaa.gov/st5/

New Jersey Department of Agriculture (NJDA). nd. Jersey seafood [cited Feb 2007]. Available at: www.jerseyseafood.nj.gov/

NOAA Fisheries Service: Fisheries Statistics Office (NOAA FSO). nd. Web site [cited Feb 2007]. Available at: http://www.nero.noaa.gov/fso/

Port Authority of New York & New Jersey (PANYNJ). nd. Web site [cited Dec 2006]. Available at: http://www.panynj.gov/

US Census Bureau. 1990. 1990 Decennial Census [cited Jul 2008]. Available at: http://factfinder.census.gov/

US Census Bureau. 2000a. United States Census 2000 [cited Jul 2007]. Available at: http://www.census.gov/

US Census Bureau. 2000b. Poverty thresholds 2000 [cited Jun 2007]. Available at: http://www.census.gov/hhes/www/poverty/threshld/thresh00.html

US Fish & Wildlife Service (USFWS). nd. Cape May Wildlife Refuge [cited Oct 2008]. Available at: http://capemay.fws.gov/

USMilitary.com. 2007. Coast Guard basic training [cited Oct 2008]. Available at: http://www.usmilitary.com/735/coast-guard-basic-training/

VisitNJ.org. nd. Cape May County Department of Tourism web site [cited Dec 2006]. Available at: http://www.thejerseycape.com/

Appendix 18

Recruitment Failure in The Southern New England Lobster Stock

April 17, 2010

Prepared by:

American Lobster Technical Committee
Atlantic States Marine Fisheries Commission

Executive Summary

The executive summary represents the consensus statements crafted during the March 23 and 24, 2010, Lobster Technical Committee meeting in New Bedford, Massachusetts. These statements have formed the basis for the larger research document contained within.

Status of the Stock:

The Southern New England stock (SNE) is critically depleted and well below the minimum threshold abundance (25th percentile) (Figure 1). Abundance indices are at or near time series lows (ASMFC 2009) and this condition has persisted (ASMFC 2006).

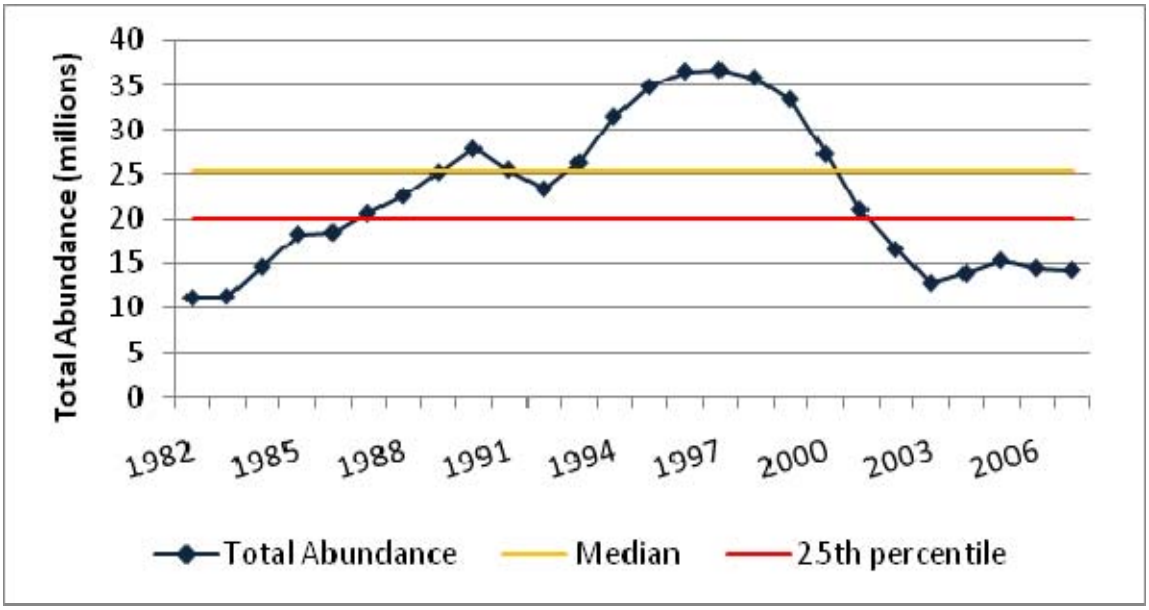


Figure 1. Total lobster abundance as measured by the University of Maine Length Based Model for the 2009 assessement. The median (yellow) and 25th percentile (red) of the 1984-2003 reference period are noted.

Since the release of the 2009 Assessment, additional monitoring information has been reviewed which documents that the reproductive potential and abundance of the SNE stock is continuing to fall lower than data presented in the latest assessment. The TC contends that the stock is experiencing recruitment failure caused by a combination of environmental drivers and continued fishing mortality. It is this recruitment failure in SNE that is preventing the stock from rebuilding. The TC formed this conclusion only after an extensive review of a number of long-term monitoring programs which include sea sampling data, YOY indices, state and federal trawls study results, ventless trap data, and post larval studies.

In all cases, the last several years have produced indices below the median and at or below the 25th percentile relative to the 1984-2003 reference years (Figure 2-4). Larval production and settlement are inherently variable. However, sustained poor production

can only lead to reduced recruitment and ultimately to reduced year class strength and lower future abundance levels.

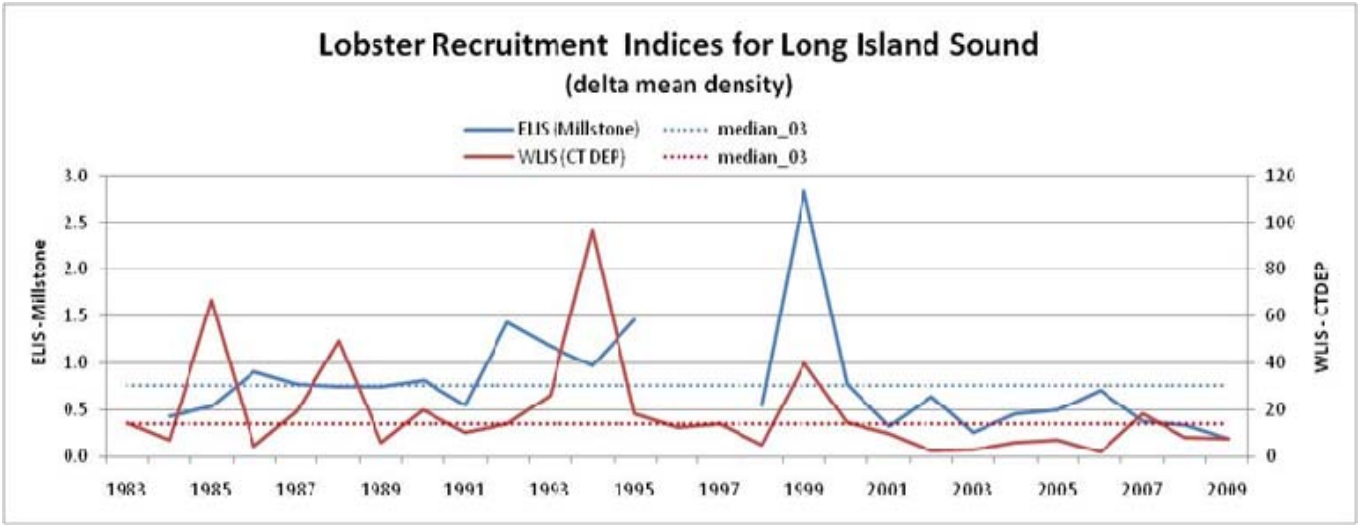


Figure 2. Larval indices for the Long Island Sound lobster population. Eastern Long Island Sound (ELIS) data are entrainment densities of lobster larvae at the Millstone Power Station; data provided courtesy of Dominion Nuclear Connecticut. Western Long Island Sound (WLIS) data are densities of stage 4 lobster larvae caught in the CT DEP plankton survey at seven fixed stations in NY and CT waters of western Long Island Sound.

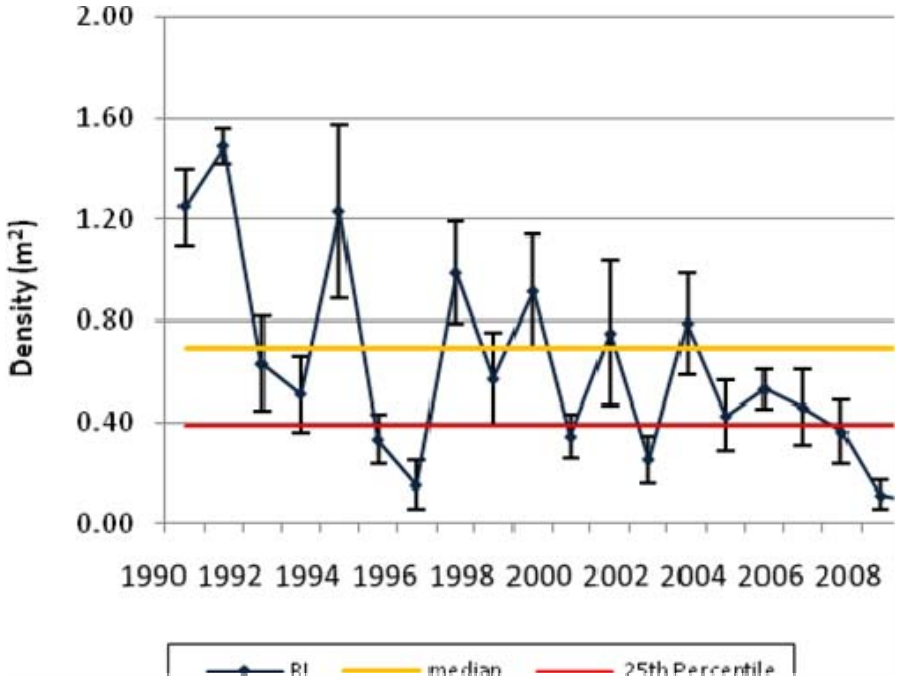


Figure 3. Rhode Island YOY Settlement Survey. The median (yellow) and 25th percentile (red) of the 1984-2003 reference period are indicated.

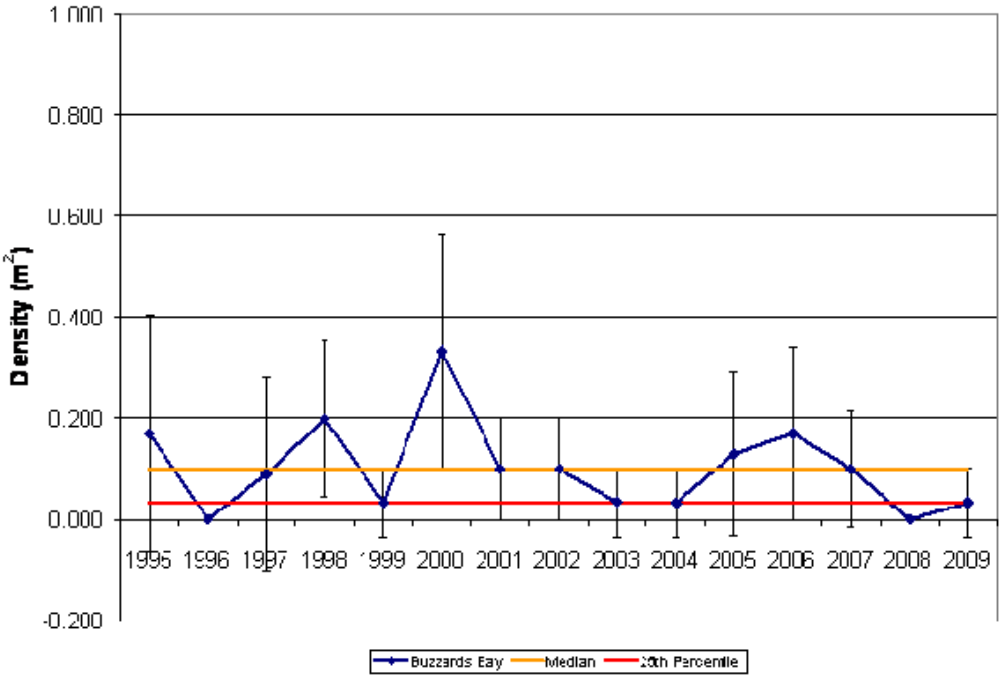


Figure 4. Massachusetts DMF YOY Settlement Survey in Buzzards Bay, Area 2. The median (yellow) and 25th percentile (red) of the 1984-2003 reference period are indicated.

Additional evidence suggests that the distribution of spawning females has shifted away from inshore SNE areas into deep water in recent years. This shift may impact larval supply to inshore nursery grounds. All but one of the SNE fall trawl survey relative abundance indices for recruit and legal size lobster are generally consistent, with a peak in the 1990's and then a decline to low levels in recent years. Recent recruit and legal indices have generally remained at or below the 25th percentile since 2002.

Impediments to Rebuilding:

Overwhelming environmental and biological changes coupled with continued fishing greatly reduce the likelihood of SNE stock rebuilding. There has been a widespread increase in the area and duration of water temperatures above 20^{0}C throughout SNE inshore waters. Long term trends in the inshore portion of SNE show a pronounced warming period since 1999. Prolonged exposure to water temperature above 20^{0}C causes respiratory and immune system stress (Worden et al. 2006, Dove et al 2005, Crossin et al 1998), increased incidence of shell disease (Glenn and Pugh, 2006), acidosis and suppression of immune defenses in lobster (Dove et al. 2004, Robohm et al. 2005). Lobster avoid water > 19^{0}C (Crossin et al. 1998). Loss of optimal shallow habitat area is causing the stock to contract spatially into deeper water (see Appendices A, B, and C). In Area 6, the potential expansion of chronic hypoxia under conditions of high temperature compounds the physical effects of both factors (Draxler et al. 2005) as well as additionally limiting the spatial extent of suitable habitat. In addition the shift in

abundance to deeper water may reflect increased mortality in shallow water by mid-Atlantic predators (e.g. striped bass, dogfish, and scup) whose abundance has increased substantially in the last decade. The routine discarding of lobster (sublegal, egg bearing, V-notched) from traps increases the exposure of lobster to the now abundant predators as lobster sink to the bottom and seek new shelter.

In Area 2, recent larval drift studies suggest that the re-distribution of spawning females into deep water areas may be causing larvae to be transported away from traditional settlement areas and potentially into less favorable areas.

In addition to environmental drivers, continued fishing pressure reduces the stock's potential to rebuild, even though overfishing is currently not occurring in SNE. Total trap hauls have declined significantly yet have not declined at the same rate as lobster abundance. Although current measures prevent the harvest of egg-bearing and v-notched lobster, the legal catch represents a loss of egg production to the system. In deep water areas where the fishery remains or has moved to, the majority of the catch (>75%) is comprised of females (Table 1). In the case of Area 6, the largest proportion of landings now come from the eastern Sound which has been traditionally dominated by females (>70%) compared to catch from the western Sound.

Table 1. Percent of the marketable female catch in SNE by region, 2007-2009.

	2007	2008	2009
CT - WLIS	14%	31%	24%
CT - CLIS	16%	19%	16%
CT - ELIS	21%	35%	36%
RI	55%	55%	53%
MA	82%	80%	82%

Management Response:

In August 2009, the TC submitted recommended management recommendations which were designed to promote stock rebuilding using existing parent stock by significantly reducing landings. Given additional evidence of recruitment failure in SNE and the impediments to stock rebuilding, the TC now recommends a 5 year moratorium on harvest in the SNE stock area. The TC acknowledges the severity of this recommendation and understands the catastrophic effects on the fishery participants, support industries, and coastal communities. This recommendation provides the maximum likelihood to rebuild the stock in the foreseeable future to an abundance level that can support a sustainable long-term fishery.

During the 5 year moratorium period, monitoring of all phases of the lobster life cycle should be intensified. Fishery dependent sampling will no longer be collected, therefore assessment of stock status will rely on current fishery-independent surveys (e.g., ventless trap, YOY sampling, larvae) which will need to be continued and intensified.

New surveys and research are needed to further characterize lobster settlement and habitat in SNE.

1. Status of the Southern New England Lobster Stock

The condition of the SNE lobster stock is depleted having declined dramatically since the late 1990s. This determination has remained consistent over the last two stock assessments that used a variety of models to determine total abundance. From a peak in 1997, lobster abundance declined below the 1984-2003 reference median in 2000 and has remained below the 25th percentile since 2002 (Figures 1 and 2; ASMFC 2009, ASMFC 2006).

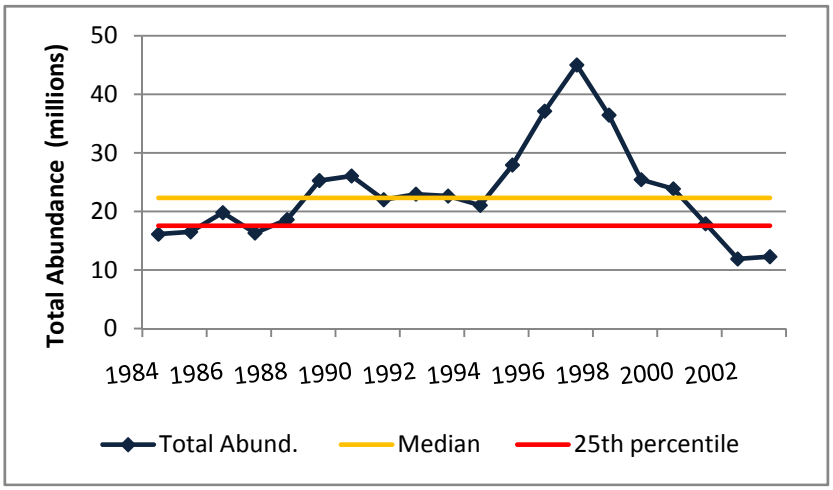


Figure 1. Total lobster abundance as measured by the Collie-Sissenwine model for the 2006 assessment. The median (yellow) and 25th percentile (red) of the 1984-2003 reference period are noted.

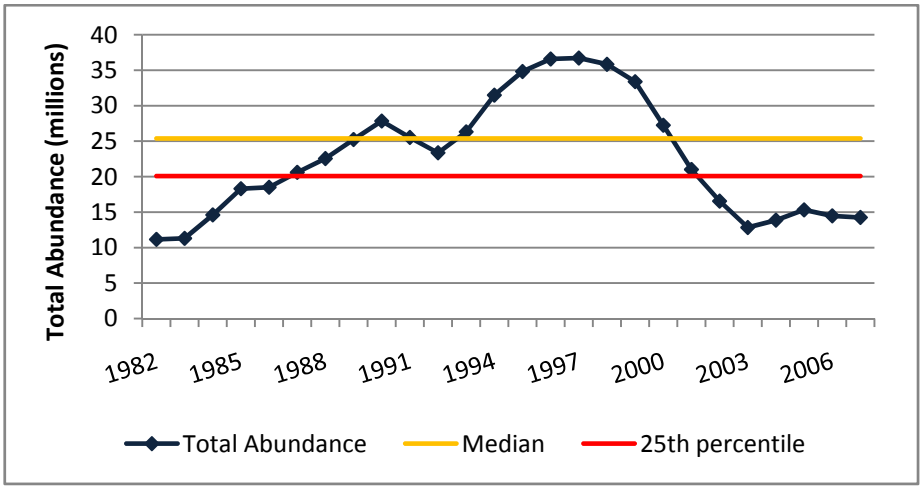


Figure 2. Total lobster abundance as measured by the University of Maine Length Based Model for the 2009 assessement. The median (yellow) and 25th percentile (red) of the 1984-2003 reference period are noted.

The Technical Committee is particularly concerned because recent abundance data indicate the SNE stock is experiencing recruitment failure. We define recruitment failure as the point where environmental conditions and/or fishing have resulted in successive years of poor recruitment. Environmental conditions play a large roll in recruitment regardless of parent stock size. However, when the parent stock is small, the likelihood of favorable recruitment regardless of environmental conditions is greatly reduced (Barnes and Hughes 1998, pp 175). The extent of recruitment failure leading to reduced adult abundance is dependent on the severity and duration of recruitment failure, population turnover and adult longevity (Gibson et al. 2008, pp 266). Recruitment failure prevents stock rebuilding and the decline in adult spawning stock size is only exacerbated by continued fishing.

Evidence of recruitment failure

Spawning Stock Biomass

Review of data from various fishery independent surveys point toward recruitment failure as the major factor impeding stock rebuilding. SNE spawning stock biomass indicators from 2002 -2009 in general were average to poor (Table 1). Figure 3 indicates the detailed spawning stock abundance estimates from the four trawl surveys. The Spawning stock abundance from the RI trawl survey increased to levels at or above the median from 2005 through 2008, but the 2009 estimate is below the 25th percentile.

Table 1. SNE Spawning Stock Biomass. Calculated as the product of the number per tow of recruit and fully recruited females and the SNE maturity curve. Shading indicates the 75 percentile (white), 25-75 percentile (gray) and lower 25 percentile (black) relative to the 1984-2003 reference period.

	RI	CT	NMFS	MA
1981	14,052			11
1982	4,401		206	56
1983	6,904		123	1
1984	14,085	136,864	273	5
1985	9,307	68,450	193	2
1986	8,452	98,894	124	58
1987	28,653	116,198	181	53
1988	32,939	93,728	159	16
1989	18,174	61,373	204	205
1990	11,069	112,243	319	69
1991	16,817	133,285	243	148
1992	13,162	136,128	277	204
1993	43,493	274,312	176	116
1994	15,943	257,049	88	151
1995	18,132	138,625	251	13
1996	30,032	187,330	474	71
1997	29,088	371,033	328	33
1998	11,300	144,739	232	60
1999	7,411	134,275	115	30
2000	11,364	103,752	230	24
2001	11,884	78,337	257	23
2002	1,501	23,853	130	0
2003	9,178	21,947	100	0
2004	12,868	39,270	181	41
2005	14,953	28,411	176	114
2006	20,699	8,274	97	0
2007	15,199	13,321	174	46
2008	17,822	918	96	0
2009	8,204		87	5
25th	10,628	89,880	152	15
50th	13,624	124,741	217	43
75th	20,794	140,153	261	82

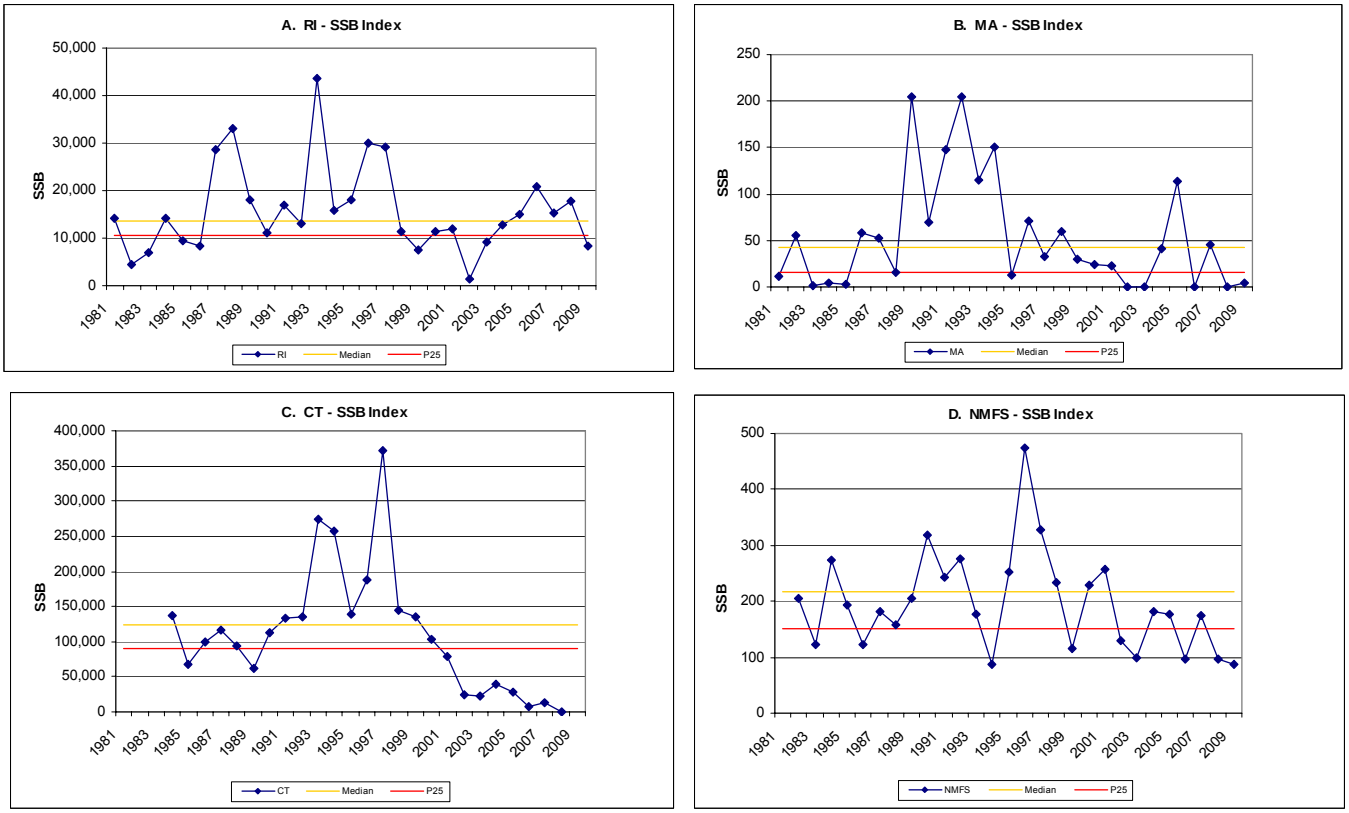


Figure 3. Spawning Stock Biomass Indices from the RI (A), MA (B), CT (C), and NMFS (D) trawl surveys for SNE. (The number per tow of recruit and fully recruited females times the maturity curve). The median (yellow) and 25th percentile (red) of the 1984-2003 reference period are indicated.

Recruitment Indices

Multiple post-larval and young-of-year (YOY) indices are available to monitor larval production and successful settlement annually in SNE. In all cases, the last several years have produced indices below the median and at or below the 25th percentile relative to the 1984-2003 reference years. Larval production and settlement are inherently variable. However, sustained poor production can only lead to reduced recruitment and ultimately to reduced year class strength and lower future abundance levels.

Two indices are available for Area 6 (Long Island Sound). The Connecticut Department of Environmental Protection (CT DEP) Western Long Island Sound Larval Survey has indexed stage 4 post larval abundance annually since 1983. From 1983 through 2001, annual density fluctuated with only single years falling below the time series median (Figure 4). However, this pattern changed dramatically following the 1999 die off; indices for 2001 through 2009 have all been below the median and the lowest in the time series with the one exception of 2007. Annual densities recorded at Millstone power station in eastern Long Island Sound for all larval stages have followed a similar pattern. The 2009 index is the lowest recorded in the 25-year time series.

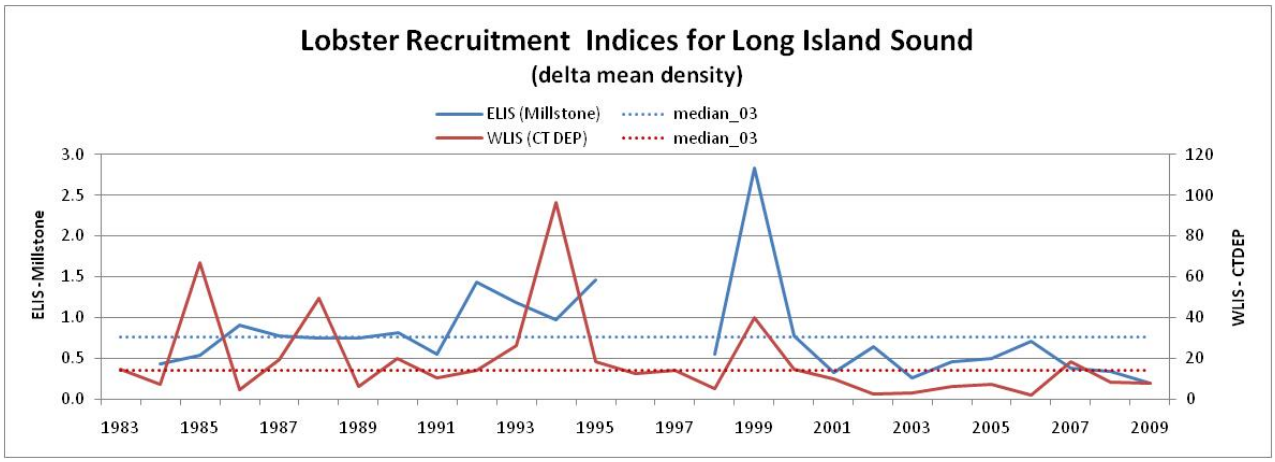


Figure 4. Larval indices for the Long Island Sound lobster population. Eastern Long Island Sound (ELIS) data are entrainment densities of lobster larvae at the Millstone Power Station; data provided courtesy of Dominion Nuclear Connecticut. Western Long Island Sound (WLIS) data are densities of stage 4 lobster larvae caught in the CT DEP plankton survey at seven fixed stations in NY and CT waters of western Long Island Sound.

Two YOY indices are available for Area 2. The YOY settlement index for Narragansett Bay and Rhode Island Sound maintained by Rhode Island Division of Environmental Management (RI DEM) showed a similar fluctuation, with only single or double low-density years, beginning in 1990 through 2007 (figure 5). However, indices for 2008-2009 were recorded as the lowest production years in two decades, leaving the last four years (2006-2009) all below the median. The 20-year time series has a significant negative slope, indicating a decline in settlement over the time series. The Massachusetts Division of Marine Fisheries (MA DMF) YOY settlement time series for Buzzards Bay has been very low and varied without trend since it's inception in 1995 (Figure 6). Without a longer time series it is difficult to determine if current settlement densities in Buzzards Bay are representative of long term conditions or represent a depressed state. Commercial landings and trawl survey indices for Buzzards Bay were high in the late 1980's and early 1990's, suggesting historical settlement in this region would have been much higher. To put the current densities of YOY lobster in Buzzards Bay in context, in 2003, 2004, and 2009 only 1 YOY lobster was observed at 5 stations among sixty 0.5 m quadrat samples. In 2008 not a single YOY lobster was observed in Buzzards Bay.

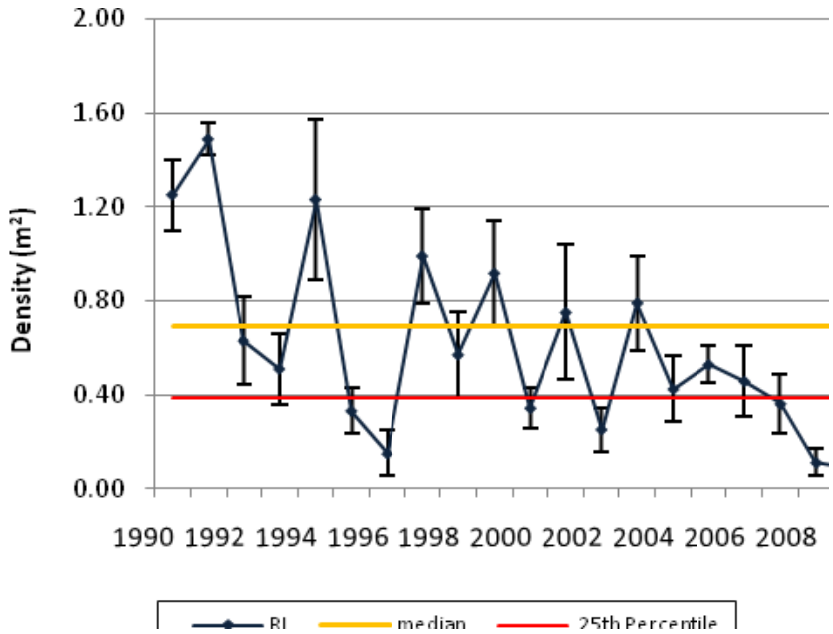


Figure 5. Rhode Island YOY Settlement Survey. The median (yellow) and 25th percentile (red) of the 1984-2003 reference period are indicated.

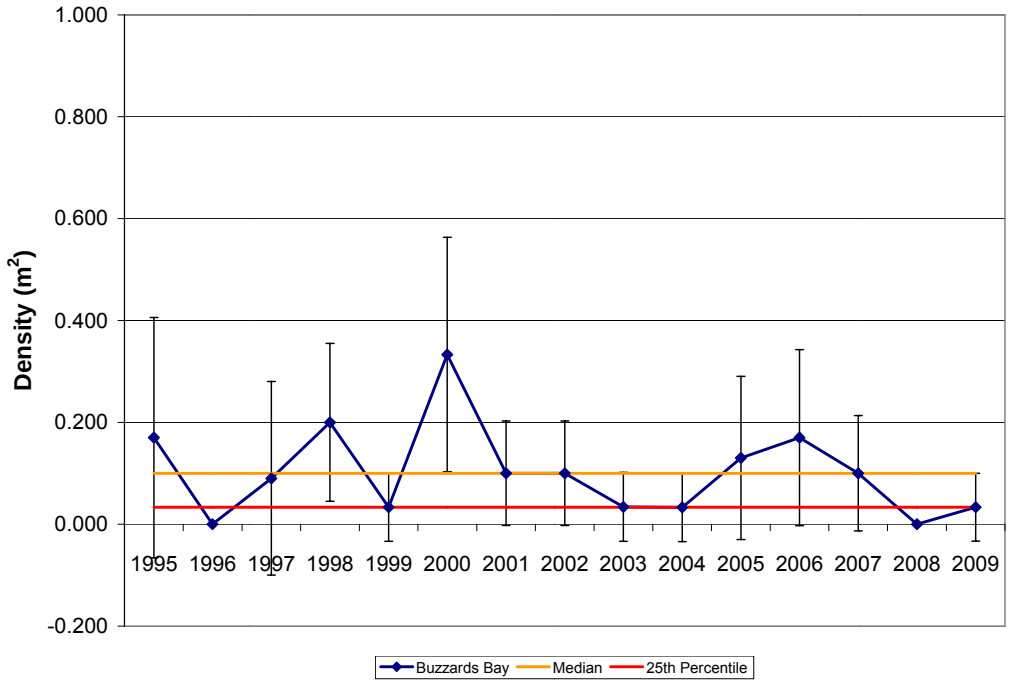


Figure 6. Massachusetts DMF YOY Settlement Survey in Buzzards Bay, Area 2. The median (yellow) and 25th percentile (red) of the 1984-2003 reference period are indicated.

Redistribution of spawning females in SNE

Additional evidence suggests that the distribution of spawning females has shifted away from inshore SNE areas into deep water in recent years. This shift may impact larval supply to inshore nursery grounds. Data from the CT trawl survey in Long Island Sound indicate there has been a shift in lobster catches from inshore shallow sites in the 1980's to deeper sites in the last decade. (In 1984-1991, the geometric mean catch at sites <30ft depth was comparable to the mean for sites >90ft depth; in 2000-2008, the mean catch at shallow sites was less than half the mean for deep sites . The regional Ventless Trap Survey data indicate higher relative abundance of lobster in deeper strata in SNE. This pattern is reversed in the Gulf of Maine, where the highest relative abundance is observed in the shallowest strata (Appendix A). Data collected during the MA lobster sea sampling program detail a shift in the fishery from inshore shallow waters to more offshore deeper waters (Appendix B). This shift in adult abundance may have implications on larval drift and settlement.

Wahle et al. (2009) have developed a passive post-larval collector that has been demonstrated to replicate diver-based YOY estimates. In 2009 MA DMF and RI DEM conducted a larval transport project which revealed that larvae released in deeper areas, which now have the highest relative abundance of spawning females, may be transported away from traditional settlement areas. Little is known about the fate of these larvae. Initial results from collector deployments stratified by depth in SNE, GOM, and most recently in GBK, indicate settlement below 20 m is greatly diminished, confirming earlier work completed along the Coast of Maine (Wahle et al. unpublished, Wilson 1999).

Trawl Survey indices

The SNE fall trawl survey relative abundance indices for recruit and legal size lobster are generally consistent, with a peak in the 1990's and then a decline to low levels in recent years (Figures 7 and 8). Recent recruit and legal indices have generally remained at or below the 25th percentile since 2002. The RI trawl indices have shown somewhat different trends. Consistent with the other SNE indices, the RI indices peaked in the 1990's and then declined to a low in 2002, but then increased from 2003 through 2008.

The somewhat different trend in abundance in RI is not unexpected. As mitigation for an oil spill in 1996, a v-notch program was initiated in 2001. This program ran through 2006. A review of the program (Stokesbury and Bigelow, 2009) confirmed that the target number of V-notches and the intended egg production was achieved. Results of mark-recapture analyses indicate there was a significant increase in the population during the program. In addition, a number of more restrictive management measures was also implemented during this time period. Unfortunately, the increase in the population appears to be short lived.

The 2009 RI trawl survey recruit and legal relative abundance indices are at or below the 25th percentile, and the RI settlement index has declined since 2005 and is currently the

lowest value of the survey. Both the MA and CT Fall survey indices for recruits show a consistent decline from peaks in the late 1990s. Abundance fell below the median in 1999-2000 and below the 25th percentile in 2000-2001. Abundance levels have remained below the 25th percentile since that time. In both surveys, the abundance of legal sized lobster has been below 25th percentile levels in all recent years except 2006 in the MA survey only.

The NJ trawl survey also showed declining legal and recruit indices since peaks in the mid-late 1990s. Abundance levels have remained below the 25th percentile since 2002 (Figure 7). The NEFC Fall trawl survey, our best survey for offshore areas in SNE, peaked in the mid-1990s and has remained at or near the 25th percentile since 2002.

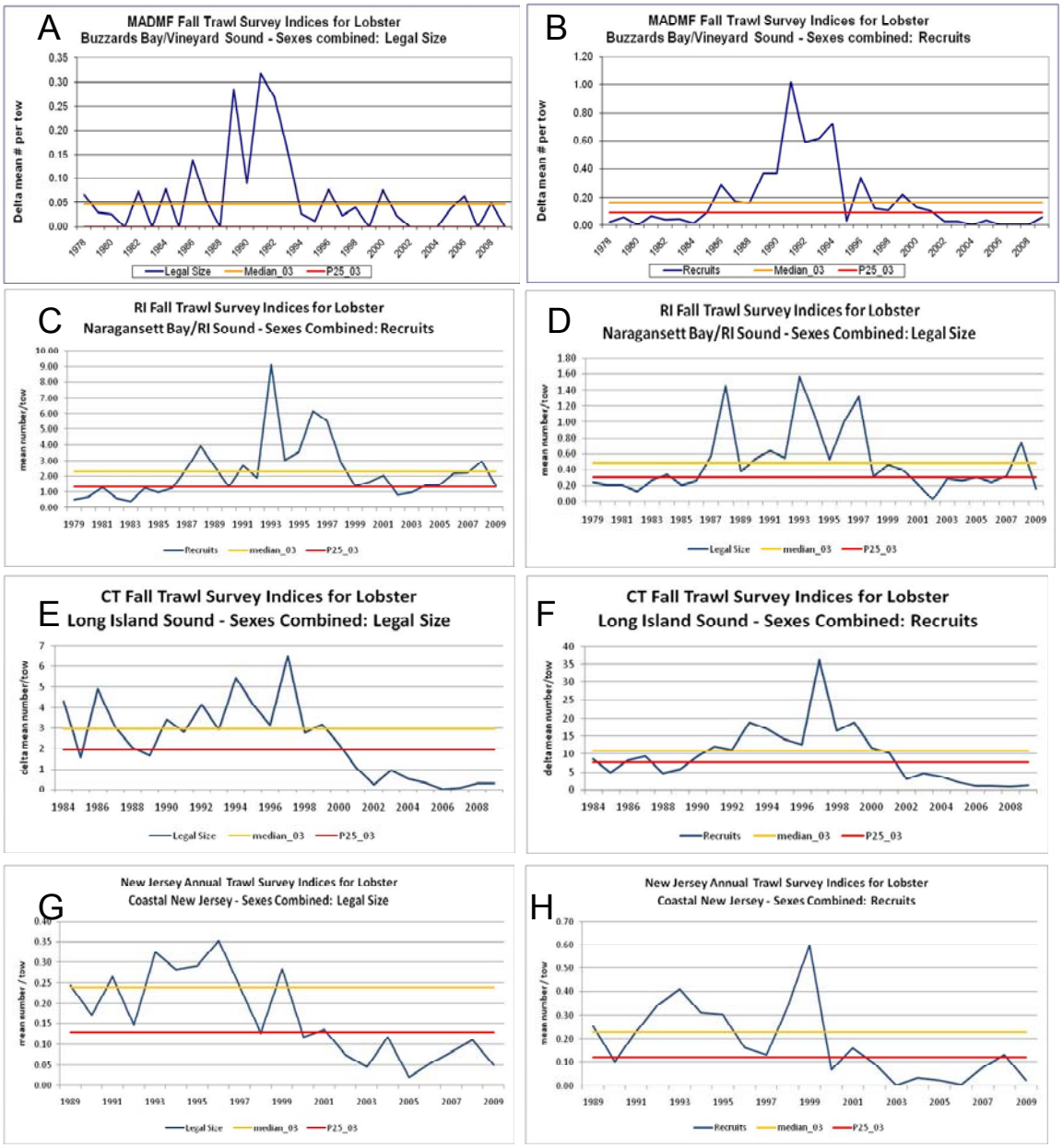
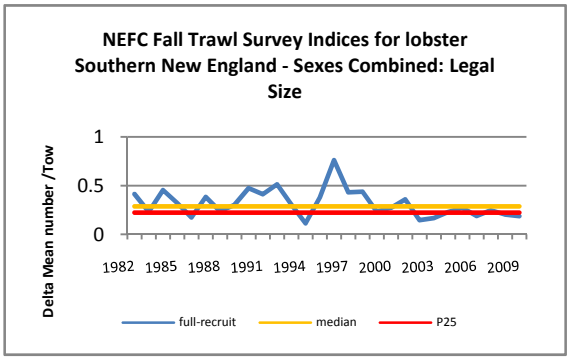


Figure 7. Abundance indices for legal and recruit (10 mm below legal) size lobster captured in MA (south of Cape Cod), RI, CT (including LIS), and NJ Trawl surveys. Medians (red) and 25th percentiles (yellow) were computed for the reference period 1984 – 2003.



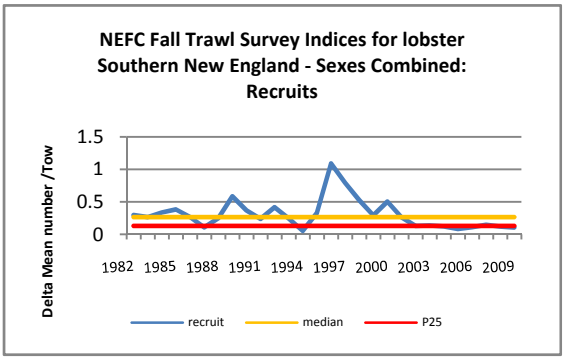


Figure 8. Abundance indices for legal and recruit (10 mm below legal) size lobster captured in NMFS Northeast Fisheries Trawl Survey in SNE

The fishery independent data portray a bleak picture. Since the declines from peak abundance in the 1990's, abundance has generally remained low. Spawning stock biomass is average to poor compared to the last 25 years, and larvae, YOY, and recruits are at low levels. This information indicates the SNE lobster stock is experiencing recruitment failure.

Changes in the SNE Fishery

The SNE landings peaked in 1997 and then declined to a low in 2003. Landings have remained low through 2007 (Figure 9). The data for 2008 and 2009 are preliminary and are thought to be underestimated. NMFS landings information was not available for landings from NJ and south. In the last assessment the NJ and south landings ranged from 4 % – 14% of SNE landings from 2003 – 2007. Landings have been below the 25th percentile of reference period landings since 2002.

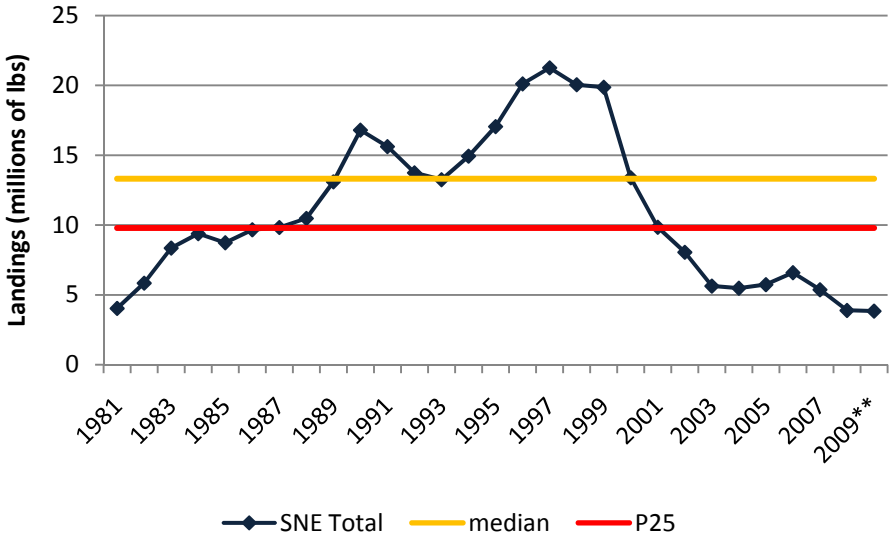


Figure 9. SNE Total Landings. We are missing the 2008 and 2009 NJ-south (NMFS) and NY 2008 and 2009 landings are probably underestimated. The median (yellow) and lower 25th percentile (red) are based on the 1984-2003 reference period.

SNE landings were examined by NMFS statistical areas (Map of NMFS statistical areas – Appendix C). Landings peaked and fell below the 25th percentile in different years in the different stat areas, though there were similarities among a number of areas. Landings in areas 611 (Long Island Sound) and 539 (RI inshore) peaked in the late 1990's and have remained below the 25th percentile since 2003 (Figure 10 and Appendix E). Though there was a small increase in inshore RI landings from 2004 – 2006, they remained below the 25th percentile. Landings trends in areas 613 (eastern south shore of Long Island) and 538 (south of Cape Cod) are somewhat similar to each other and to areas 611 and 539 (Figure 11 and Appendix D). There was a peak in landings in 1998 and landings fell and remained below the 25th percentile starting in 2003 or 2004. It is not surprising to see such similar trends in these areas (538, 539, 611 and 613) since they are all adjacent. The landings trends in areas 527 (offshore RI and MA), 612 (NY Bight), and areas from NJ and south (combined) are similar to each other, and somewhat different from inshore areas to their north (Figure 12 and Appendix D). Landings in these areas peaked in the late 1980's to early 1990's and then declined. Landings in all three areas dropped below the 25th percentile in 2001, and then showed a small increase in some of the areas. Preliminary 2008 and 2009 landings estimates for area 537 are still below the 25th percentile. Current status of area 612 and NJ south are unknown since NMFS-NE landings have not been updated.

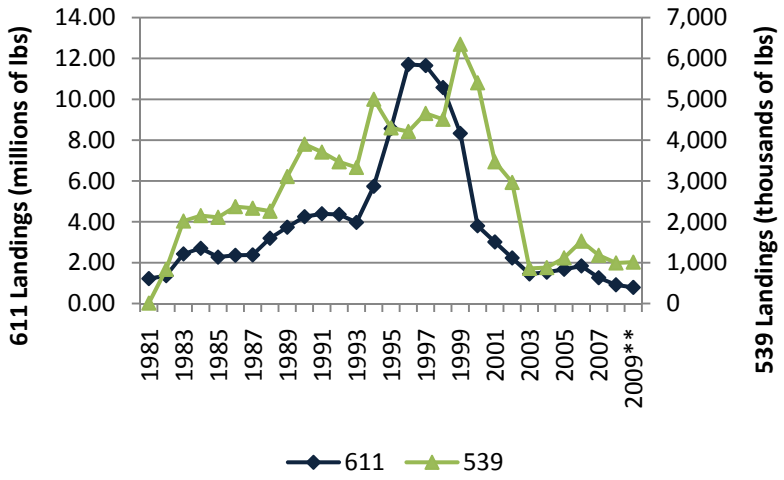


Figure 10. Comparison of Landings in NMFS Statistical Areas 611 and 539

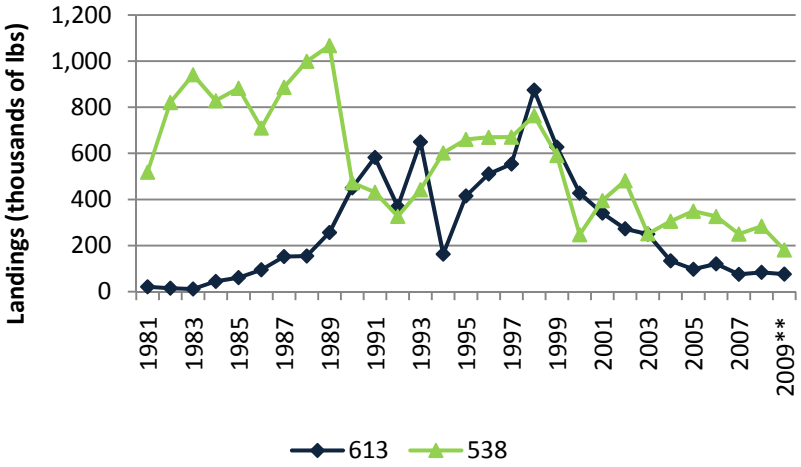


Figure 11. Comparison of Landings in NMFS Statistical Areas 613 and 538

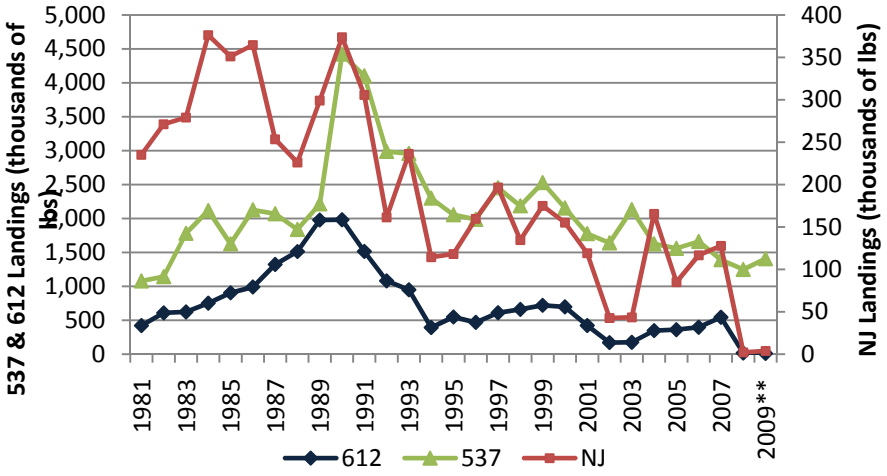


Figure 12. Comparison of Landings in NMFS Statistical Areas 537, 612, and NJ - south

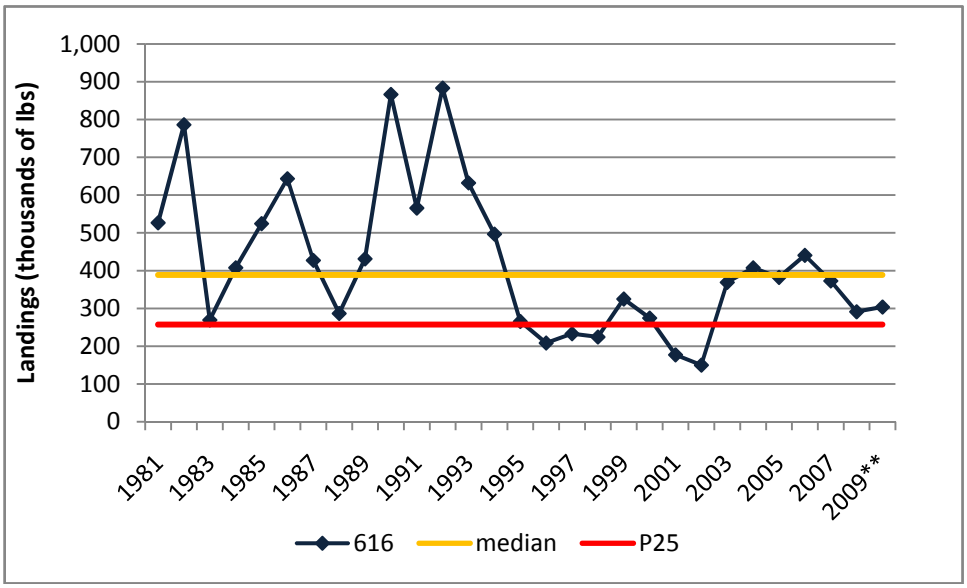


Figure 13. NMFS Statistical Area 616 landings (thousands of lbs). The median (yellow) and lower 25th percentile (red) are based on the 1984-2003 reference period.

Landings trends in area 616 stand out from the rest (Figure 13). Trends were similare to 537, 612, and NJ south with a peak in the early 1990's follwed by a decline and low levels in 2002. Unlike the other areas, landings increased in 2003 and stayed above median landings for a number of years. Recent estimates have declined, but are still above the 25th percentile and may be underestimated due to the lack of NMFS-SNE landings data.

2. Impediments to Rebuilding:

Increased Water Temperature

Water temperature has a pervasive effect on all of the major life history processes of American lobster including growth, maturity, spawning, egg maturation, and larval maturation. Regional differences observed in these parameters are largely due to the differences in thermal regime experienced by lobster. Growth rate is proportional to temperature between 8 and 25 °C (Aiken and Waddy, 1986), meaning that lobster which experience warmer average temperatures grow faster (molt more frequently) than lobster which experience colder temperature regimes.

Similarly, size at sexual maturity is directly related to mean summer water temperatures (Templemen, 1936a; Briggs and Mushacke, 1980; Estrella and McKiernan, 1989). Lobster in warmer temperature regimes, SNE, reach sexual maturity at much smaller sizes (younger ages) than lobster which live in colder environments (e.g. Gulf of Maine or

Georges Bank). The early onset of maturity in warmer areas confounds the proportional relationship between temperature and growth rate in female lobster, as the synchronization of the molt/mate/spawn cycle lengthens, the intermolt duration lengthens to accommodate the brooding of eggs. As a result the average population growth rate of the SNE stock is slower than that of GOM or GBK.

Embryonic development is directly related to the thermal regime experienced by the egg clutch, with the duration from extrusion to hatching lasting for 39 weeks at 10 °C and for only 16 weeks at 20 °C (Annis et al 2007, Perkins 1972). Temperature is also the major factor controlling the incidence, timing and synchronization of spawning (Waddy *et al.*, 1995). Extended periods of winter temperatures below 8 °C are required for ovary maturation and spawning in nearshore stocks (Waddy and Aiken, 1992). In addition, temperature has a profound effect on the rate of larval development. The duration from hatching to the post-larval stage ranges from 11 to 54 days at 20 and 10 °C respectively (Mackenzie 1988, Templemen, 1936b).

Southern New England represents the southern extent of the geographic range of American lobster. The primary habitat constraint within this region is water temperature. American lobster are capable of detecting temperature changes of 1°C (Jury and Watson, 2000), demonstrate a thermal preference between 12 and 18 °C, and will avoid temperatures > 19 °C (Crossin *et al*., 1998). Water temperatures > 28 °C cause mortality to adult lobster within 48 hours and this is exacerbated when the dissolved oxygen is reduced below 6.4 mg/L (McLeese, 1956). Prolonged exposure to water temperature above 20 °C causes physiological stress as indicated by marked hemolymph acidosis (Dove *et al*., 2005), increased respiration rate (Powers *et al.*, 2004), and depression of immunocompetence (Dove *et al.*, 2005; Steenbergen *et al.*, 1978). It has also been linked to increased incidence of disease including epizootic shell disease (Glenn and Pugh, 2006), and a newly described disease, excretory calcinosis (Dove *et al.*, 2004).

There has been a dramatic and widespread increase in the spatial range and duration of water temperatures above 20 °C in the coastal waters of SNE. Long term trends in the inshore portion of SNE show a pronounced warming period since 1999. Specifically, there has been a substantial increase in the duration of the number of days in the late summer when the mean bottom water temperature remains above 20 °C. These trends were observed in sea-surface temperatures recorded in Woods Hole, MA (NOAA unpublished data) (Figure 14), as well as bottom water temperatures from upper Buzzards Bay (Cleveland Ledge 30 ft- MADMF unpublished data) (Figure 15) and eastern Long Island Sound (Millstone Station unpublished data) (Figure 16). Additionally, there has been a substantial increase in the number of days > 18 °C (the upper thermal preference for lobster, Crossin *et al*., 1998) in the deeper water near the mouth of Buzzards Bay (70 ft- MADMF unpublished data) (Figure 17). Although there are no complementary temperature time series from Narragansett Bay or Rhode Island Sound, it is reasonable to expect that temperature trends observed in the rest of SNE have also

occurred in Rhode Island coastal waters given the similarities in latitude and bathymetry in these areas.

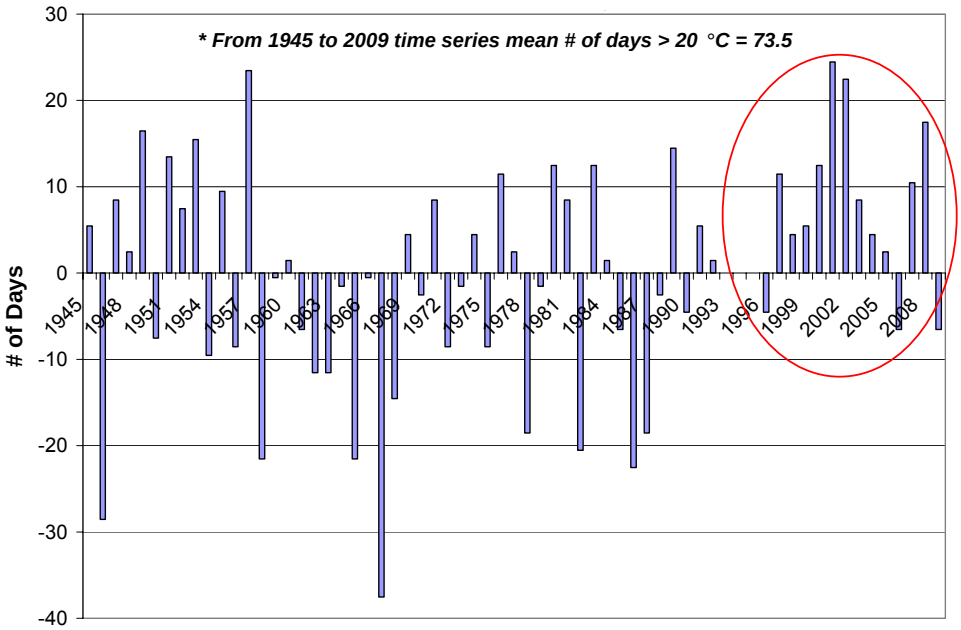


Figure 14. Anomalies from the mean number of days > 20°C of the Woods Hole sea-surface temperature, 1945 - 2009.

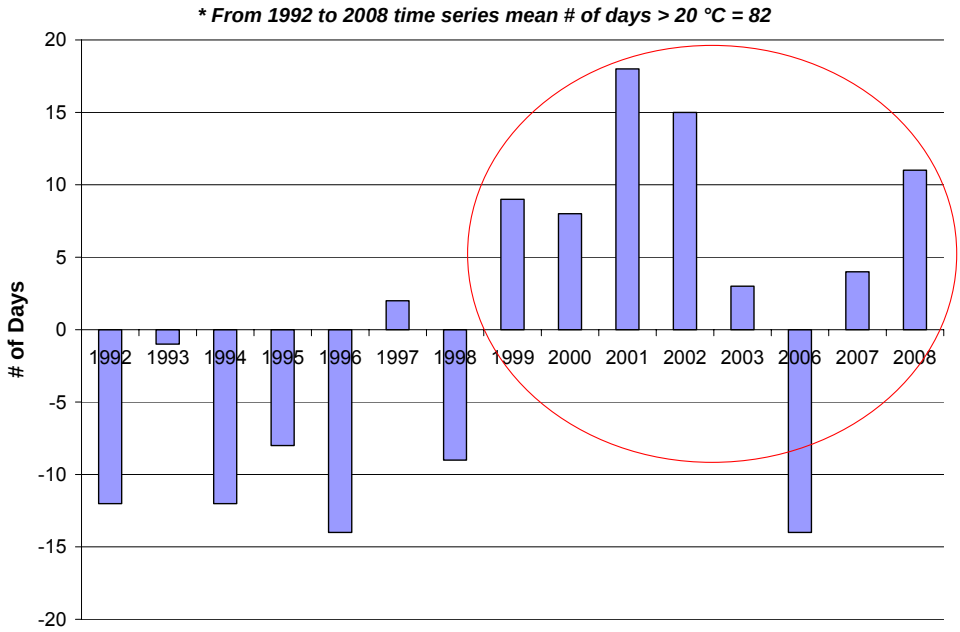


Figure 15. Anomalies from the mean number of days > 20°C of Cleveland Ledge, Buzzards Bay, bottom water (30 ft.) temperature: 1992 - 2008

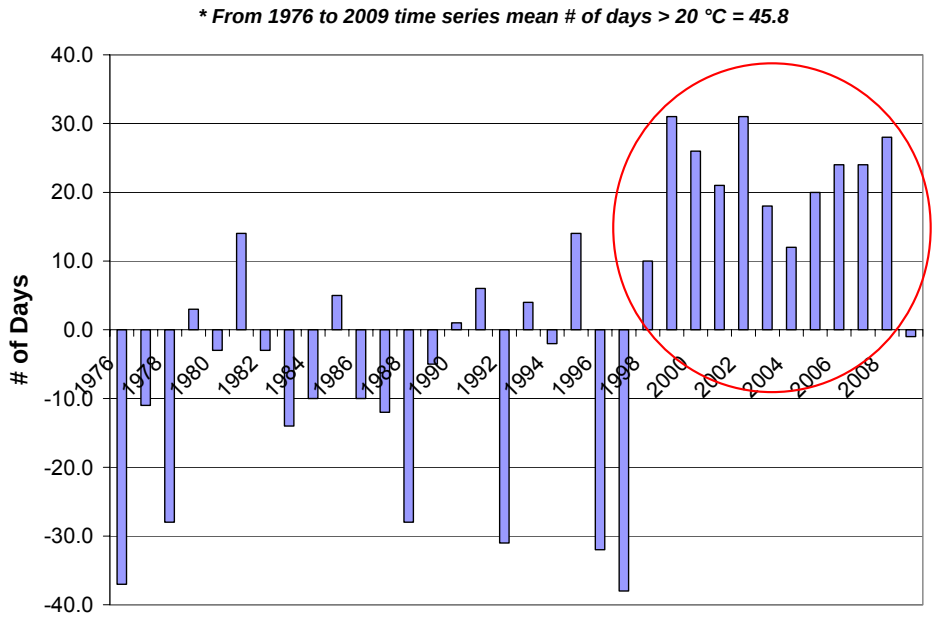


Figure 16. Anomalies from the mean number of days > 20°C of the Millstone Power Station bottom temperature, 1945 - 2009.

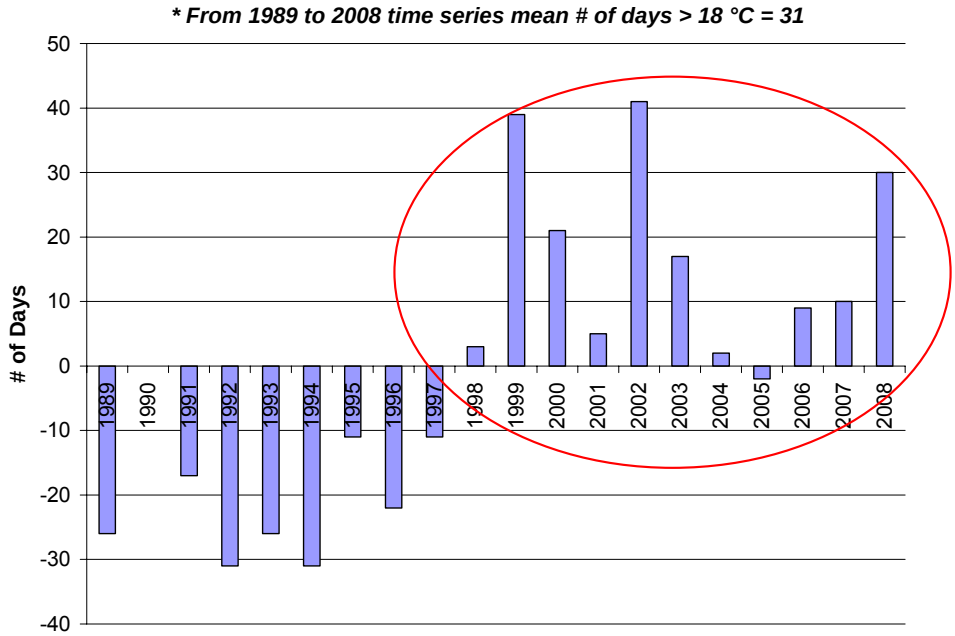


Figure 17. Anomalies from the mean number of days > 18°C at the mouth of Buzzards Bay, bottom water (70 ft.) temperature: 1989 – 2008

The observed increases in water temperature are not above the upper lethal limits to lobster (28.4 °C), nor are the minimum temperatures above the minimum winter temperatures necessary for successful maturation and spawning (8 °C). However, the

duration and areal extent of coastal waters of SNE above the thermal tolerance of lobster have increased. The loss of viable habitat area has caused the stock to contract spatially into deeper water (MADMF & CTDEP unpublished data, Appendices A and B) and into areas more prone to chronic hypoxia (Pearce and Balcom, 2005). The coastal waters of SNE are relatively shallow, most less than 20 m (70 feet). Adult lobster exposed to this temperature regime would experience increased physiological stress, and may adjust their movement patterns to avoid these warmer areas, seasonally migrating into deeper waters which provide thermal refugia. This contraction into relatively small deep water areas likely causes crowding, where lobster are forced to compete for resources (food and shelter), and where they are more vulnerable to commercial exploitation. Early benthic phase lobster (5 to 40 mm CL) are habitat restricted (Wahle and Steneck, 1991) typically requiring shallow water with cobble substrate, and have very small home ranges (Copper and Uzmann, 1977). Lobster in this life history phase are generally considered to be incapable of making substantial migrations to deeper water to find thermal refugia, and as such would be exposed to stressful inshore temperatures for a prolonged period. The effects of prolonged exposure to warm temperatures on early benthic phase lobster are not well known, however it is safe to surmise chronic physiological stress and suppression of the immune system would lead to increases in natural mortality within this life history phase.

There has also been a re-distribution of spawning females (as indicated by the presence of females with fully developed embryos or spent clutches) from shallow water areas throughout Buzzards Bay into deep water areas near the mouth of Buzzards Bay and Vineyard Sound (Appendix B). Preliminary data from satellite-tracked drifter deployments released at locations representing the current locations of spawning females, suggest that larvae hatched outside of the mouths of Buzzards Bay and Narragansett Bay may be transported to the west via coastal currents away from traditional settlement areas and potentially into less favorable areas to the south of Long Island (MADMF unpublished data). Alternatively, drifters released at locations inside Buzzards Bay, where spawning females were previously observed in the early 1990's, were generally transported to the east by wind driven currents to traditional settlement locations. The relationship between the location of spawning females and the ultimate fate of their larvae is still not well understood. However these preliminary data suggest that changes in the geographic distribution of spawning females may be impacting larval transport and settlement success in some portions of SNE.

It is not possible to draw a direct relationship between the decline of the Southern New England lobster stock and increased water temperatures. However, the strong coincidence in the timing of the increase in water temperature with the timing of the decline in landings, spawning stock biomass, and recruitment, coupled with overwhelming experimental evidence of increased physiological stress, immunosupression, and increased rates of disease in lobster exposed to prolonged periods of temperatures ≥ 20 °C, strongly suggest that increasing water temperatures have played a primary role.

Shell Disease

An outbreak of chitinoclastic shell disease has been observed throughout eastern Long Island Sound (Howell *et al.*, 2005), Narragansett Bay and Rhode Island Sound (Castro and Angell, 2000), and Buzzards Bay and Vineyard Sound (Glenn and Pugh, 2005, 2006) since 1997. Since this time the incidence of the disease in the population has varied annually, but has generally remained above 15% of the population (Figures 18). This form of shell disease is characterized by lesions penetrating inwards from the carapace surface. Bacteria are seen at the leading edge of lesions and have been identified as the primary causative organism (Smolowitz *et al.*, 2005). Chistoserdov *et al.* (2005) have described similar microbial communities in lesions of lobster from different locations, and several investigators have suggested that the bacterial activity may be interacting with environmental factors (Chistoserdov *et al.,* 2005; O'Kelly, 2005; Shiaris, 2005; Smolowitz *et al.,* 2005). The high prevalence of disease symptoms observed in some regions, and the wide scale geographic distribution of disease symptoms has led researchers to label this disease as epizootic.

In a recent paper by Wahle, Gibson and Fogarty (2009), the linkage between lobster settlement and subsequent recruitment to the fishery was established. After 1997, when shell disease first became prevalent in Rhode Island waters, this relationship breaks down. They propose the supply of new recruits was greatly impacted by shell disease induced mortality after settlement. When a disease term was added to the model a statistical fit to the observed data was possible. In this case, temperature trends, as measured in the August trawl survey and a composite index of predatory fish did not provide an explanation for variability and downward trend in pre-recruit abundance.

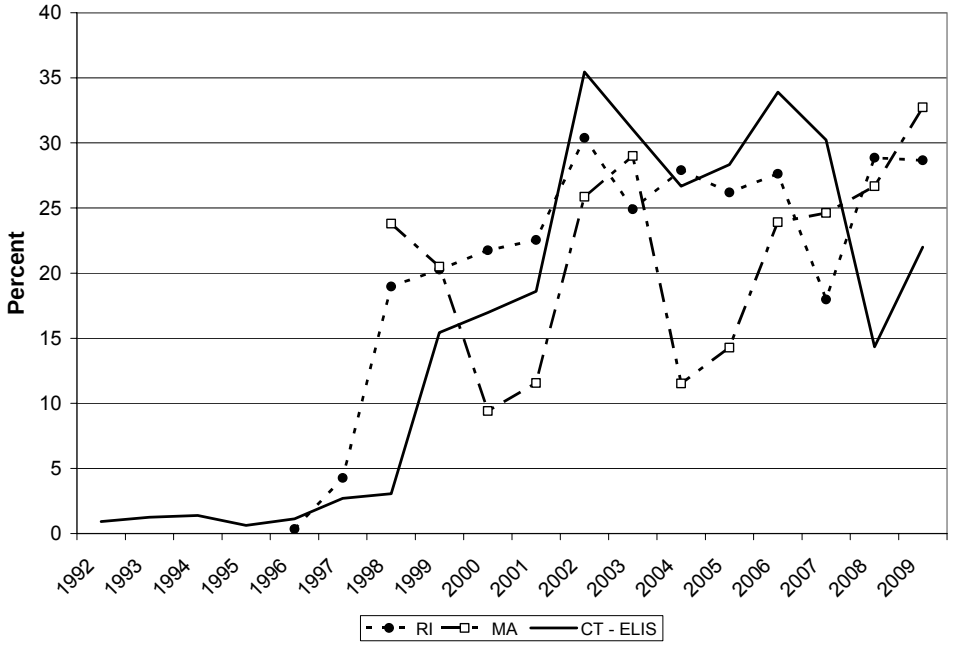


Figure 18. The percent incidence of shell disease observed in the commercial catch of Southern New England

Lobster infected with shell disease, particularly egg-bearing females, have been shown to have high concentrations of ecdysone, the hormone responsible for promoting molting (Laufer *et al.*, 2005). This suggests that shell-diseased lobster molt more frequently to combat the effects of the disease. This observation has been recorded *in situ* in Rhode Island coastal waters, where shell-diseased egg-bearing females were observed prematurely molting, hence losing an entire clutch of eggs (Castro and Angell, 2000). Ecdysis (molting) is a physiologically stressful process and lobster are extremely vulnerable in their "soft" post-molt condition. Lobster experience higher rates of natural mortality in the molting process and post-molt condition than when hard-shelled. Given the high prevalence of the disease observed among sexually mature females, it is likely that any increase in mortality has had a substantial negative impact on the reproductive output in the SNE lobster stock. Of additional concern to reproductive processes, Canadian researchers have described damaged or deformed vas deferens and damaged spermatozoa in male lobster afflicted with shell disease (Comeau and Benhalima 2009).

Commercial Exploitation

In addition to environmental and disease factors, continued fishing pressure reduces the stock's potential to rebuild. Current management measures are designed to protect the spawning stock by preventing harvest of egg-bearing and v-notched female lobster, and the minimum legal size allows 92-100% of females to reach maturity before they are vulnerable to harvest. However, in the deep water areas to which the fishery has shifted and where catch rates are highest, a substantial portion of the catch is comprised of females (Table 2). This legal catch of mature females represents a loss of potential egg

production to the system. In light of the current low spawning stock biomass and poor recruitment in SNE, continued harvest of sexually mature females represents a serious threat to the long term viability of this stock.

Table 2. Percent of the marketable catch in SNE comprised of females by region, 2007 – 2009.

	2007	2008	2009
CT - WLIS	14%	31%	24%
CT - CLIS	16%	19%	16%
CT - ELIS	21%	35%	36%
RI	55%	55%	53%
MA	82%	80%	82%

3. Management Response and Future Advise

Since 2005 the technical committee has recommended several changes to management strategies in SNE including output and input controls. Table 3 shows management changes by lobster conservation management area (LCMA) for all areas that fall within the SNE stock unit. The table lists all new measures and the year they were implemented. The table also indicates if a program is ending, such as the v-notching program in LCMA 2 that was a part of the oil spill mitigation program. The technical committee recommended specific advice to the board after the 2005 and 2009 stock assessments, both indicating the SNE stock was in poor health. Appendix E and F are the memos to the Board with the recommended measures.

Appendix 18

Table 3. Changes in management measures for the SNE stock by LCMA and year.

	LCMA 2	LCMA 3	LCMA 4	LCMA 5	LCMA 6	OCC
2005						
Gauge		3 13/32			3 9/32	3 13/32
v-notching						
2006						
Gauge		3 7/16			3 5/16	3 3/8
v-notching	Last year of oil spill mitigation notching					
2007						
Gauge		3 15/32				
Traps		limited entry trap allocation program				
v-notching (Fall)					notching in CT only replaced gauge increase	
2008						
Gauge		3½ (delayed corresponding vent increase until 2010)				
V notch definition	1/8" with or without setal hairs	1/8" with or without setal hairs	1/8" with or without setal hairs	1/8" with or without setal hairs	1/8" with or without setal hairs	
Max size	5 ¼ male & female	7 male & female	5 ¼ male & female	5 ¼ male & female	5 ¼ male & female	
2009						
Max size		6 7/8 male & female				
v-notching (Spring)					CT program to replace gauge increase ends	
2010						
Gauge					3 3/8	
Max size		6 3/4				

Given additional evidence of recruitment failure in SNE and the impediments to stock rebuilding, the technical committee now recommends a five year moratorium on harvest in the SNE stock area. Declines in survey indices, larval production, settlement, and landings all point to a systemic recruitment failure of the Southern New England lobster stock.

The SNE lobster fishery has declined as the resource has declined, although not at the same rate nor scaled to current levels of abundance. Environmental changes, most notably temperature, likely have forced lobster to seek more suitable habitat in deeper water. Larvae produced by displaced lobster may be lost to traditional inshore nursery grounds. The fishery has adapted to the changes in the resource by shifting effort further offshore. However, fishing continues in most inshore portions of SNE, and continued harvest represents lost spawning stock.

A moratorium provides the maximum likelihood to rebuild the stock to a level that can support a sustainable fishery. Rebuilding the currently depleted SNE stock may take longer than five years. Caddy and Agnew (2004) reviewed stock recoveries of depleted marine resources and reported that invertebrate fisheries most likely to recover were those with reductions in predator pressure, in the center of their geographic range and under favorable regimes. They suggest that the predicted length of recoveries should be treated with caution and conclude that a few stocks have recovered within a decade, but that most require longer.

Crustacean Case Studies

We draw on three examples of crustacean fisheries in the Northwest Atlantic that have implemented complete closures, closed areas or greatly reduced seasons in an attempt to rebuild a depleted stock. The first known lobster fishery that was completely closed in the NW Atlantic for an extended period of time, was the Newfoundland American lobster fishery in the late-1920s. After nearly fifty years of uncontrolled harvest, where nearly all lobster were retained the landings had declined from an average of 5000 to 6000t in the late 1880s (with a peak of 8,000 t in 1889) to 400 t in 1924. A three year fishery moratorium ensued from 1925 through 1927. The fishery was reopened in 1928. One immediate result in landings was an increase to approximately 2000 tons. For several years afterward landings declined to 800 tons, which is typical of exploiting the interest gained during a closure, followed by returning to harvesting the principle (current stock size + any interest carried forward). Within 10 years after the closure landings rose to 2000 t and have remained at or near that level until the present. . . One should apply the caution in comparing historical to current data. The information in the period from the 1870s to the closure were collected in a different manner than from the closure to 1976, and from 1977 to present (Williamson 1992).

The most recent assessment document (DFO 2006) states that minimum size and egg bearing prohibitions were not enforced until the early 1930s. Changes in productivity, a

valuable measure of management, as inferred from landings, is problematic. In this case, one should not compare the "productivity"/landings of the recent commercial fishery with that of a completely unregulated fishery, with different means of attaining landings data. Perhaps if all regulations currently in place were lifted, the "productivity" of the American lobster stock in NL, as indicated by landings data, would exceed 8000 t. However this would almost certainly be followed by the same stock collapse as seen in 1924. This is not an advisable experiment to try.

According to the most recent Newfoundland lobster assessment (DFO 2006), reproductive potential is, in some part, aided by the current management measures, though "the population structure appears to be unhealthy as it is predominately composed of relatively small animals; this may be constraining egg production. Enhanced v-notching could help improve structure of the stock, while reducing exploitation rates and enhancing egg production. Additionally, the establishment of further closed areas may help to achieve these goals."

The second case study that may be informative when considering the likelihood of a 5-year moratorium improving conditions in SNE comes from Browns Bank located southwest of Nova Scotia. This mid shelf area was a known productive fishing ground for many species. In the 1970s, the inshore lobster fleet (LFA 34) was slowly expanding to offshore grounds and the offshore fishery (LFA 41) was expanding following the decline of the swordfish fleet as a result of high mercury levels in swordfish. The convergence of these two competing groups led the DFO to close Browns Bank permanently in 1979. The believed importance of Browns Bank for brood stock has not been quantified. Larval studies suggest tidal and wide transport can disperse larvae to Nova Scotia, the Bay of Fundy and along the Coast of Maine. Large reproductive lobster have limited protection within the closed areas as they have been found to migrate off the bank and are susceptible to fishing in adjacent LFA 34 and 41. The greatest benefit of the closed area may be in the protection to immature lobster which do not migrate. However, a major concern with the closed area is the unknown impact of mobile gear activity, which was allowed to continue, on the lobster resource at various times of year (juvenile, spawning and molting; DFO 1999).

Our final case study involves the northern shrimp Fishery, which has had two instances since the 1970s where the resource crashed, recruitment failed, and the stock rebuilt after either a moratorium of one season (1978) or greatly reduced season length (1979, 2000-2003; Figure 19). Like lobster in SNE, the northern shrimp is at its southern extent of its range and may be heavily influenced by environmental conditions for successful recruitment. Unlike lobster, northern shrimp are fast growing and only live to five years. Recruitment pulses are monitored annually with harvest levels recommended on a yearly basis. Managed under ASMFC, the northern shrimp Fishery is an example where decisive management action, combined with favorable recruitment conditions, can help a depleted resource recover to the benefit of industry participants (ASMFC 2009b).

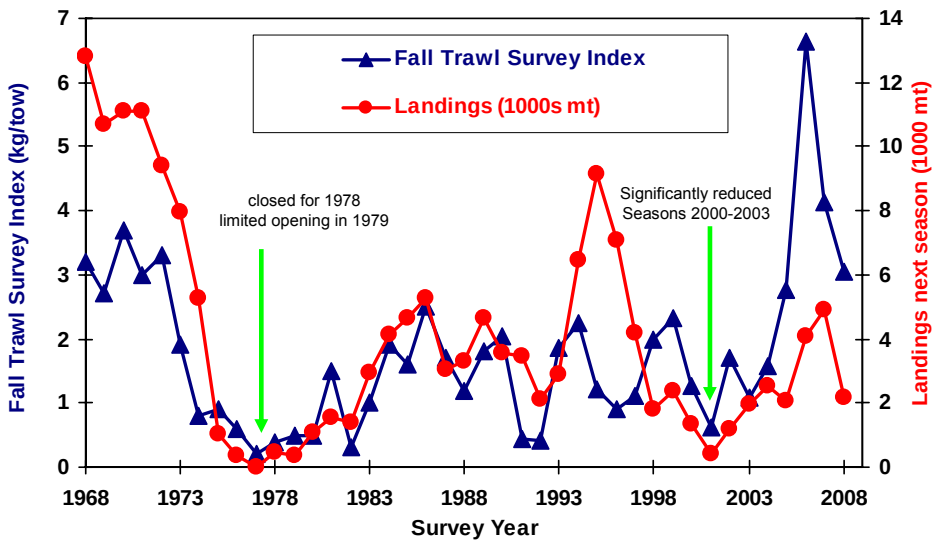


Figure 19. Landings in metric tons and Fall trawl survey index for northern shrimp in New England. The fishing season was closed in 1978 and limited in 1979. In 2000-2003 the season length was greatly reduced. In both cases the stock recovered and exceeded the biological reference points.

Based on the three case studies listed above for crustacean fisheries in the Northwest Atlantic, there are several important lessons to be learned. First, if a moratorium is enacted there is a need to understand the consequences of renewed fishing after the moratorium is lifted. In the case of the Newfoundland closure, short term gains were immediately lost when fishing resumed following pre-moratorium practices. Second, in the case of the Browns Bank closure, it is important to scale the area to reflect the life history of the target species. Lobster movement out of the closed area may erode any benefits to regional egg production and mobile gear may unnecessarily impact lobster during spawning and molting seasons. Finally, for a species at the limit of its range, like the northern shrimp, decisive management action based on reliable survey data can provide the necessary ingredients to capitalize on favorable recruitment conditions to rebuild a depleted stock. In the case of northern shrimp, the rebuilding of the stock twice in 40 years has defied the review of Caddy and Agnew (2004) that suggested depletions aggravated by unfavorable environmental conditions for stocks at the limit of their range are unlikely. In the Newfoundland and northern shrimp examples, a measurable impact was observed after a moratorium or strict seasonal limits. While on Browns Bank, the political nature of the implementation of the closed area likely limited its effectiveness and would have benefited from increased information prior to the closure.

Evaluation of moratorium

During the 5 year moratorium period, monitoring of all phases of the lobster life cycle should be intensified. Fishery dependent sampling will no longer be collected, therefore assessment of stock status will rely on current fishery-independent surveys (e.g.,

ventless trap, YOY sampling, larvae) which will need to be continued and intensified. Caddy and Agnew (2004) suggest that a sentinel Fishery with observer coverage could track changes in catch rate, recruitment and size class distributions in previously heavily fished areas not bound by prior stratification schemes. New surveys and research are needed to further characterize lobster settlement and habitat in SNE.

The multi-phased approach for recovery monitoring will allow evaluation of annual YOY recruitment, and subsequent survival larger sizes. The moratorium will have the greatest chance of promoting a windfall recruitment event that will greatly increase the recovery rate.

Literature Cited

ASMFC 2009b. ASSESSMENT REPORT FOR GULF OF MAINE NORTHERN SHRIMP – 2009. Atlantic States Marine Fisheries Commission's Northern Shrimp Technical Committee.

Annis, ER, LS Incze, N Wolff, RS Steneck (2007) Estimates of in situ larval development time for the lobster, Homarus americanus. J. Crustacean Biology

Barnes, R.J.K. and R.N. Hughes (1999) Marine Ecology, an Introduction (3rd edition) Blackwell, Malden MA pp 174.

Caddy, J.F., and D.J. Agnew (2004) An overview of recent global experience with recovery plans for depleted marine resources and suggested guidelines for recovery planning. Journal Reviews in Fish Biology and Fisheries 14:43-112.

Castro, K. M. and T. E. Angell. 2000. Prevalence and progression of shell disease in American lobster, *Homaurs americanus*, from Rhode Island waters and the offshore canyons. *J. Shell. Res*. Vol. 19, No.2, 691-700.

Chistoserdov, A., S. L. Gubbala, R. Smolowitz, F. Mirazol, and A. Hsu. 2005. A microbiological assessment of epizootic shell disease in the American lobster indicates its strictly dermal etiology. Pp. 12--20 *in*: Tlusty, M. F., H. O. Halvorson, R. Smolowitz, and U. Sharma, eds. Lobster Shell Disease Workshop. Aquatic Forum Series 05-1. New England Aquarium, Boston, Massachusetts.

Comeau, M. and K. Benhalima. 2009. Internal organ pathology of wild American lobster (Homarus americanus) from eastern Canada affected with shell disease. N.Z.J. Mar. Fresh. Res., 43:257-269.

Cooper, R. A., and J. R. Uzmann. 1977. Ecology of juvenile and adult clawed lobster, *Homarus americanus, Homarus gammarus,* and *Nephrops norvegicus. Div. Fish. Oceanogr. Circ. (Aust., C.S.I.R.O.)* 7, 187 – 208.

Crossin, G. T., S. A. Al-Ayoub, S. H. Jury, W. H. Howell, & W. H. Watson. 1998. Behavioral thermoregulation in the American lobster *Homarus americanus.* J. Exp. Bio. 201: 365-374.

DFO, 2006. An Assessment of American Lobster in Newfoundland. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2006/009.

DFO 1999. OFFSHORE LOBSTER (LFA 41) INTEGRATED FISHERY MANAGEMENT PLAN Maritimes Region, 1999-2000. http://www.mar.dfo-mpo.gc.ca/fisheries/res/imp/99offlob.htm

Dove, A. D. M., C. LoBue, P. Bowser, & M. Powell. 2004. Excretory calcinosis: a new fatal disease of wild American lobster *Homarus americanus.* Dis. Aquat. Org. 58: 215-221.

Dove, A. D. M., B. Allam, J. J. Powers, & M. S. Sokolowski. 2005. A prolonged thermal stress experiment on the American lobster *Homarus americanus.* J. Shell. Res. 24: 761-765.

Draxler,A., R. Robohm, D. Wieczorek, D. Kapareiko, and S. Pitchford, 2005. Effect of habitat biochemicals on survival of lobster (Homarus americanus). J. Shellfish Research, 24(3):821-824.

Glenn, R. P. and T. L .Pugh. 2005. Observations on the chronology and distribution of lobster shell disease in Massachusetts coastal waters. Pp.141--155 *in*: Tlusty, M. F., H. O. Halvorson, R. Smolowitz, and U. Sharma, eds. Lobster Shell Disease Workshop. Aquatic Forum Series 05-1. New England Aquarium, Boston, Massachusetts.

Glenn, R. P. and T. L. Pugh. 2006. Epizootic shell disease in American lobster (*Homarus americanus*) in Massachusetts coastal waters: interactions of temperature, maturity, and intermolt duration. J. Crust. Bio. 26(4) 639-645.

Gibson, R.N., R. J. A. Atkinson, J. D. M. Gordon (2008) Oceanography and Marine Biology: An Annual Review, CRC Press Boca Raton, FL. PP 266.

Howell, P., C. Giannini, and J. Benway. 2005. Assessment and monitoring of the American lobster resource and fishery in Long Island Sound. Semi-Annual Performance Report. NOAA Grant # NA16FW1238.

MacKenzie, BR (1988) Assessment of temperature effects on interrelationships between stage durations, JEMBE 18:6-10

McLeese, D. W. 1956. Effects of temperature, salinity and oxygen on the survival of the American lobster. J. Fish. Res. Bd. Canada, 13 (2), 247-372.

O'Kelly, C. J. 2005. The lobster back biofilm: possible role of the total microbial community in lobster shell disease. Pp. 22--24 *in:* Tlusty, M. F., H. O. Halvorson, R. Smolowitz, and U. Sharma, eds. Lobster Shell Disease Workshop. Aquatic Forum Series 05-1. New England Aquarium, Boston, Massachusetts.

Pearce, J. and N. Balcom. 2005. The 1999 Long Island Sound Lobster Mortality Event: Findings of the Comprehensive research Initiative. *J. Shell. Res*. Vol 24 (3); 691-697.

Perkins, H.C. 1972. Developmental rates at various temperatures of embryos of the northern lobster (*Homarus americanus* Milne-Edwards). *Fish. Bull*. 70, 95-99.

Powers, J., G. Lopez, R. Cerrato, & A. Dove. 2004. Effects of thermal stress on Long Island Sound lobster, *H. americanus*. Proceedings of the LIS Lobster Research Initiative Working Meeting. 3-4 May, 2004 University of CT Avery Point, Groton, CT.

Robohm, R.,A. Draxler, D. Wieczorek, D. Kapareiko, and S. Pitchford, 2005. Effects of environmental stressors on disease susceptibility in American lobster: A controlled laboratory study. J. Shellfish Research, 24(3):821-824.

Shiaris, M. 2005. Molecular approaches to characterize bacterial communities and populations associated with lobster shell disease. Pp. 36--41 *in*: Tlusty, M. F., H. O. Halvorson, R. Smolowitz, and U. Sharma, eds. Lobster Shell Disease Workshop. Aquatic Forum Series 05-1. New England Aquarium, Boston, Massachusetts.

Smolowitz, R., A. Chistoserdov, and A. Hsu. 2005. Epizootic shell disease in the American lobster *Homarus americanus*. Pp. 2--11 *in*: Tlusty, M. F., H. O. Halvorson, R. Smolowitz, and U. Sharma, eds. Lobster Shell Disease Workshop. Aquatic Forum Series 05-1. New England Aquarium, Boston, Massachusetts.

Steenbergen, J. F., S. M. Steenbergen, & H. C. Shapiro. 1978. Effects of temperature on phagocytosis in *Homarus americanus*. Aquaculture 14: 23 – 30.

Stokesbury, K. and T. Bigelow. 2009. Mark-recapture analysis of American lobster in Rhode Island Sound. NMFS award # NA07NMF4550321 final report. 69 pgs.

Templeman, W. 1936a. Local differences in the life history of the lobster (Homarus americanus) on the coast of the maritime provinces of Canada. J. Biol. Board. Can. 2, 41-87.

Templeman, W. 1936b. The influence of temperature, salinity, light, and food conditions on the survival and growth of the larvae of the lobster (Homarus americanus). J. Biol. Board. Can. 2, 485-497.

Waddy, S. L. & D. E. Aiken. 1992. Environmental intervention in the reproductive process of American lobster, Homarus Americanus. Invert. Reproduction. and Development, 22:1-3 p 245 – 252.

Waddy, S. L., D. E. Aiken, and D. P. V. DeKleun. 1995. Control of Growth and Reproduction. In Biology of the Lobster *Homarus americanus* (ed. J. P. Factor), pp. 217 -259. Boston Academic Press.

Wahle, RA, M Gibson, M Fogarty (2009) Distinguishing disease impacts from larval supply effects in a lobster fishery collapse. Mar Ecol Prog Ser 376:185-192.

Wahle, R. A., and R. S. Steneck. 1991. Recruitment habitats and nursery grounds of the American lobster *Homarus americanus*: A demographic bottleneck. *Mar. Ecol. Prog. Ser*. 69, 231-243.

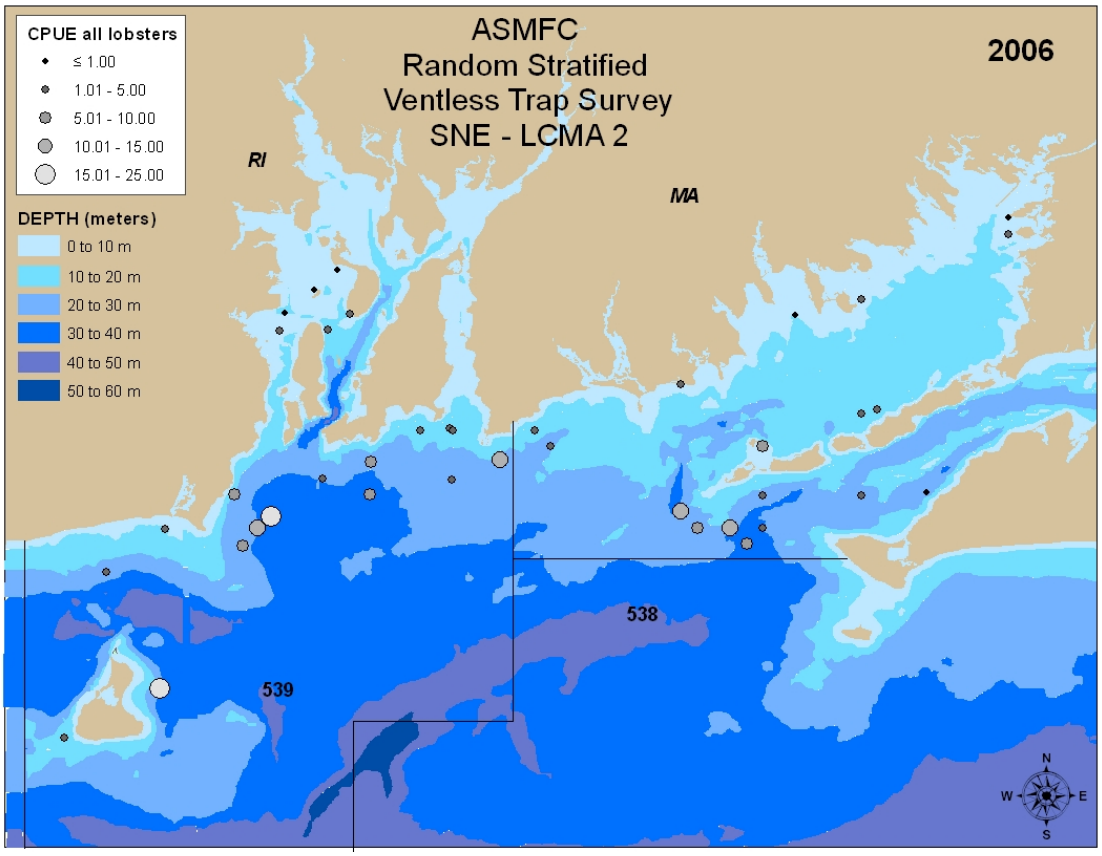
Wahle, RA, C.J. Wilson, M. Parkhurst and CE Bergeron (2009) Passive postlarval collector for American lobster. NZ J. Marine and Freshwater Res. 43: 465-474.

Wilson C 1999. Bathymetric and spatial patterns of settlement in American lobster, *Homarus americanus*, in the Gulf of Maine: insights into processes controlling abundance. Unpublished MSc thesis, University of Maine, Orono, Maine, United States.

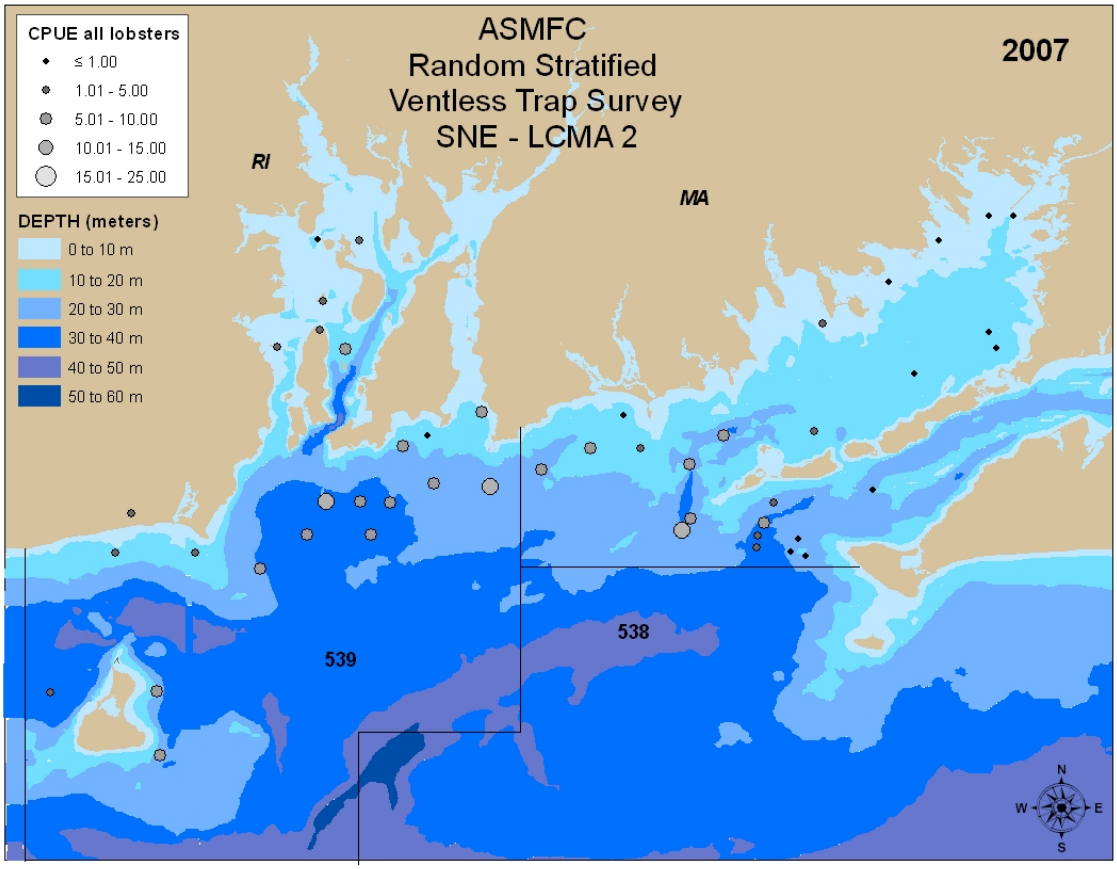
Worden, M., C. Clark, M. Conaway, and S. Qadri, 2006. Temperature dependence of cardiac performance in the lobster Homarus americanus. J. Experimental Biology, 209:1024-1034.

Appendix A

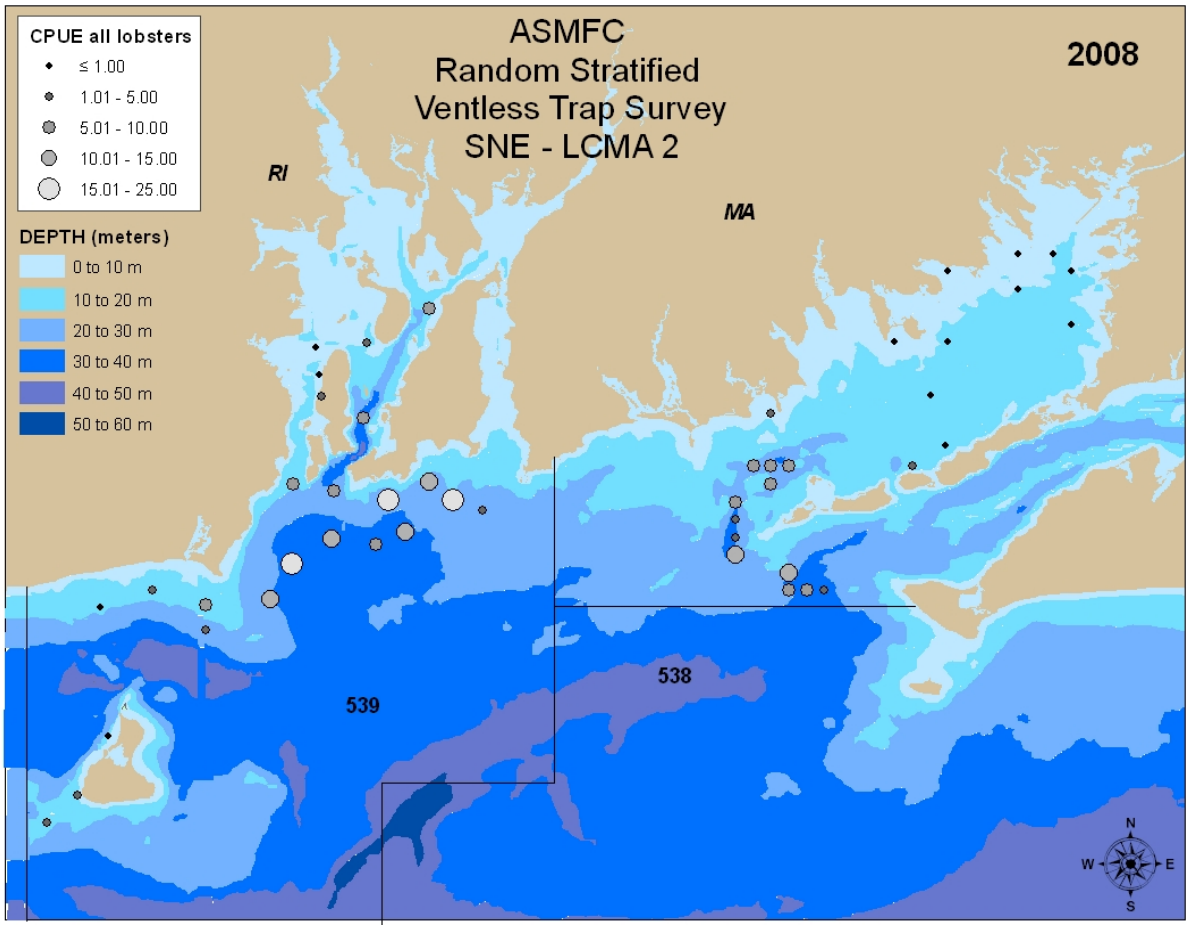
Coastwide Ventless Trap Survey CPUE by station and depth



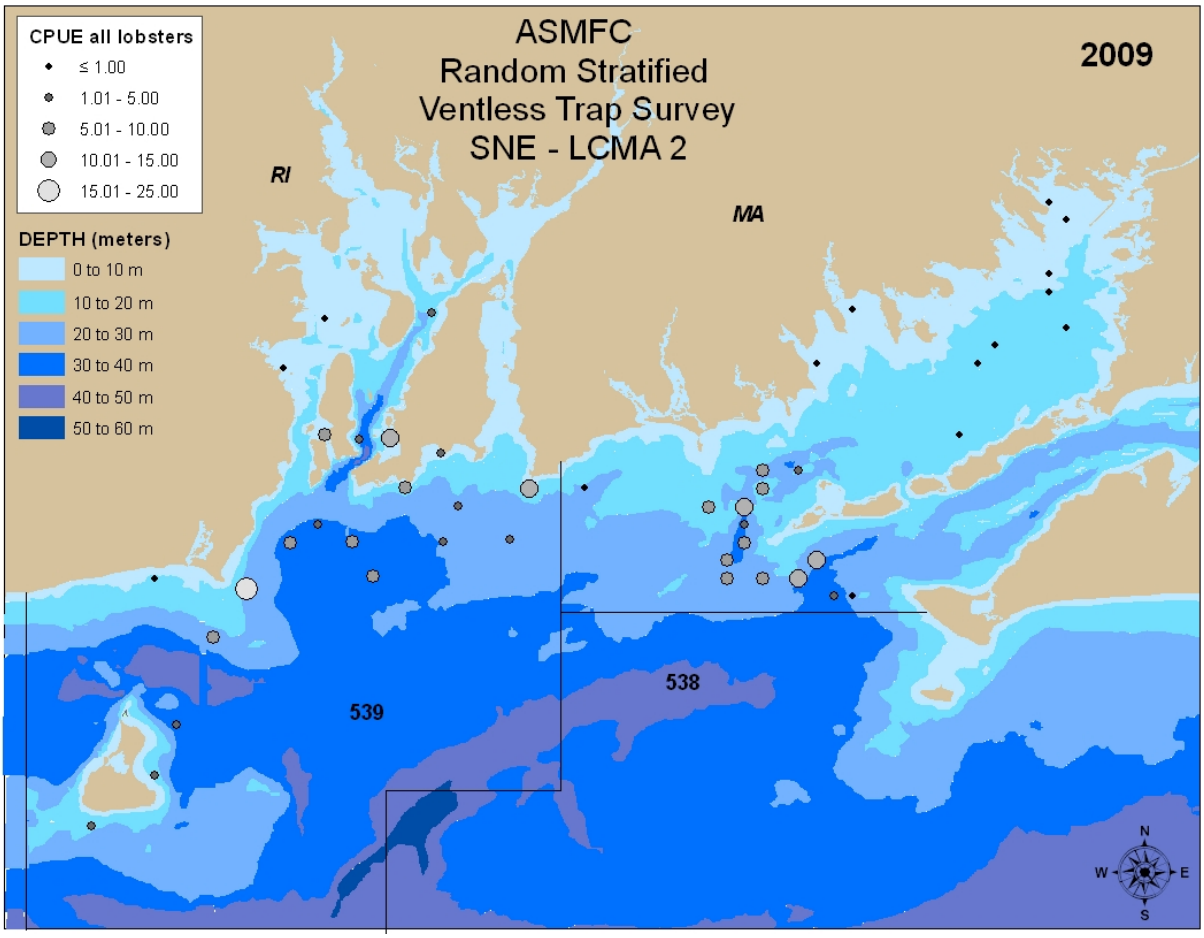
Appendix 18


ASMFC
Random Stratified
Ventless Trap Survey
SNE - LCMA 2
2007
CPUE all lobsters
≤ 1.00
1.01 - 5.00
5.01 - 10.00
10.01 - 15.00
15.01 - 25.00
DEPTH (meters)
0 to 10 m
10 to 20 m
20 to 30 m
30 to 40 m
40 to 50 m
50 to 60 m
RI
MA
539
538
N
W
E
S

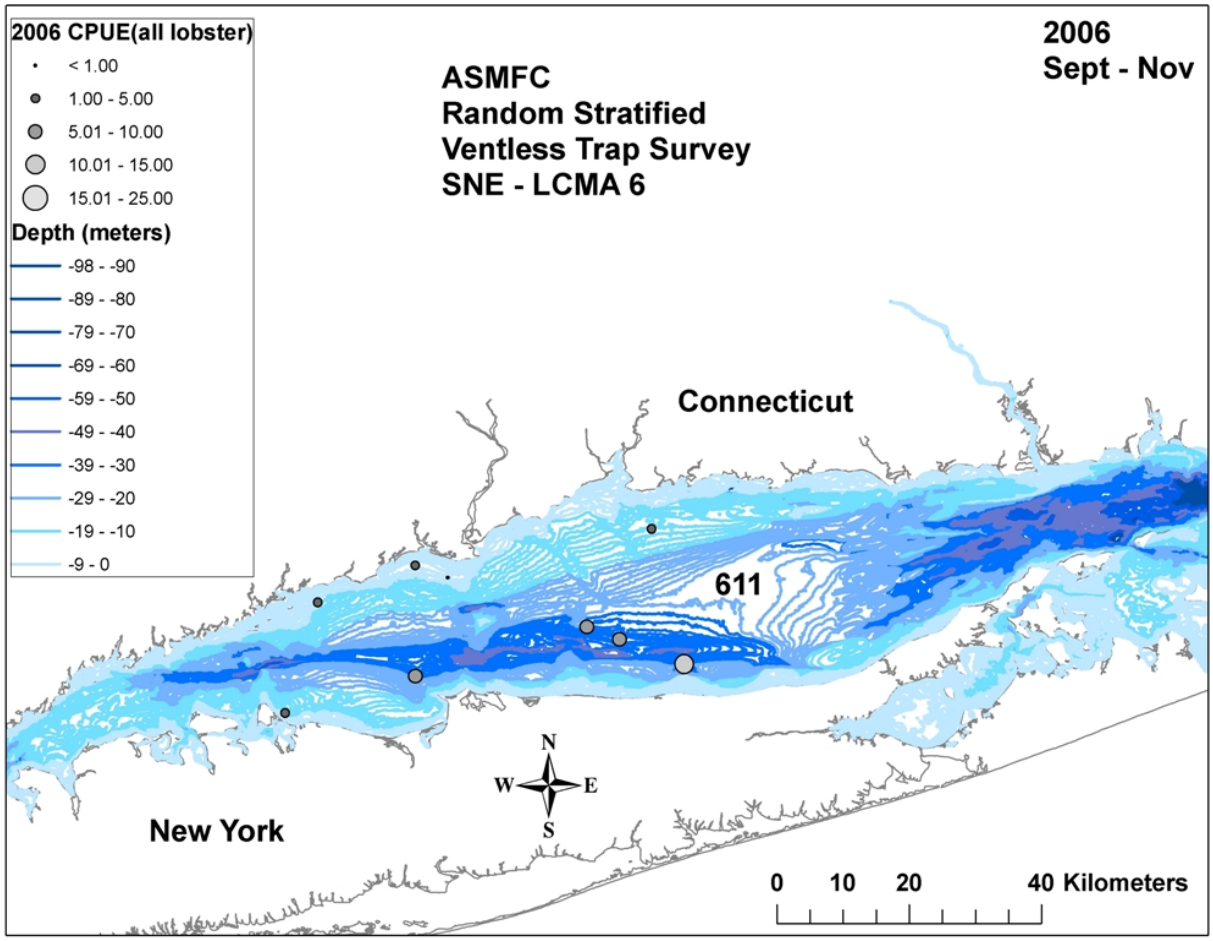
Appendix 18


ASMFC
Random Stratified
Ventless Trap Survey
SNE - LCMA 2
2008
CPUE all lobsters
≤ 1.00
1.01 - 5.00
5.01 - 10.00
10.01 - 15.00
15.01 - 25.00
DEPTH (meters)
0 to 10 m
10 to 20 m
20 to 30 m
30 to 40 m
40 to 50 m
50 to 60 m
RI
MA
539
538
N
W
E
S

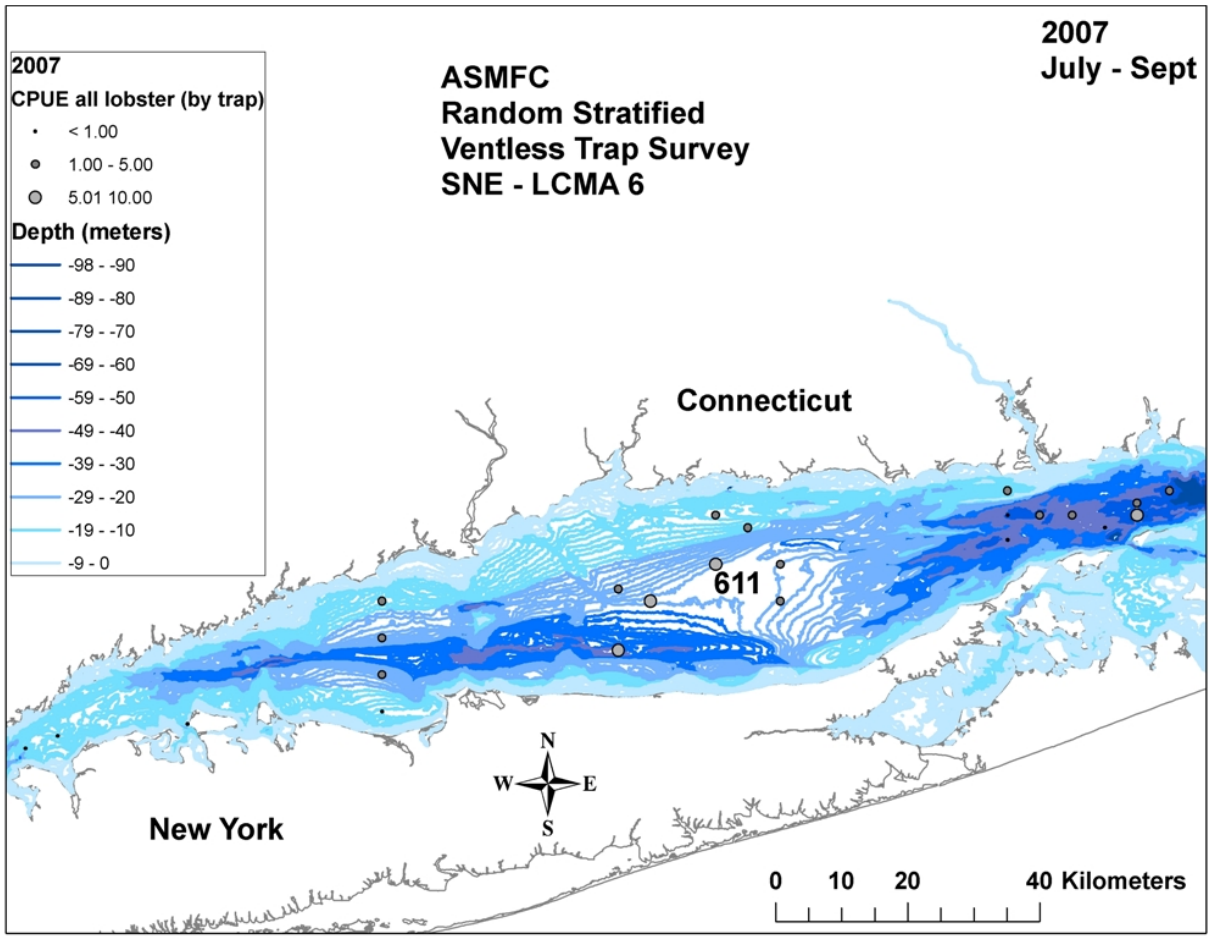
Appendix 18


ASMFC
Random Stratified
Ventless Trap Survey
SNE - LCMA 2
2009
CPUE all lobsters
≤ 1.00
1.01 - 5.00
5.01 - 10.00
10.01 - 15.00
15.01 - 25.00
DEPTH (meters)
0 to 10 m
10 to 20 m
20 to 30 m
30 to 40 m
40 to 50 m
50 to 60 m
RI
MA
539
538
N
W
E
S

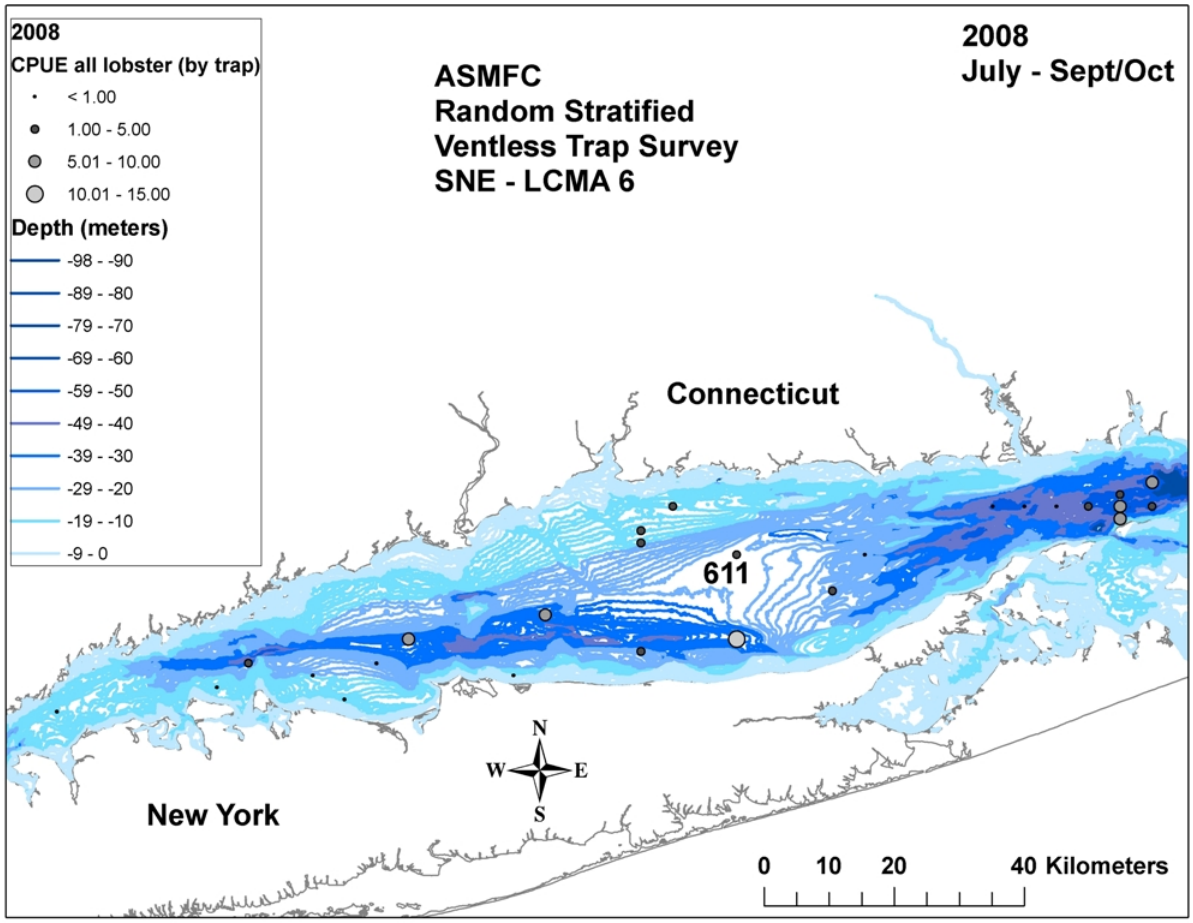
Appendix 18


2006 CPUE(all lobster)
< 1.00
1.00 - 5.00
5.01 - 10.00
10.01 - 15.00
15.01 - 25.00
Depth (meters)
-98 - -90
-89 - -80
-79 - -70
-69 - -60
-59 - -50
-49 - -40
-39 - -30
-29 - -20
-19 - -10
-9 - 0
ASMFC
Random Stratified
Ventless Trap Survey
SNE - LCMA 6
2006
Sept - Nov
Connecticut
611
New York
N
W
E
S
0 10 20 40 Kilometers

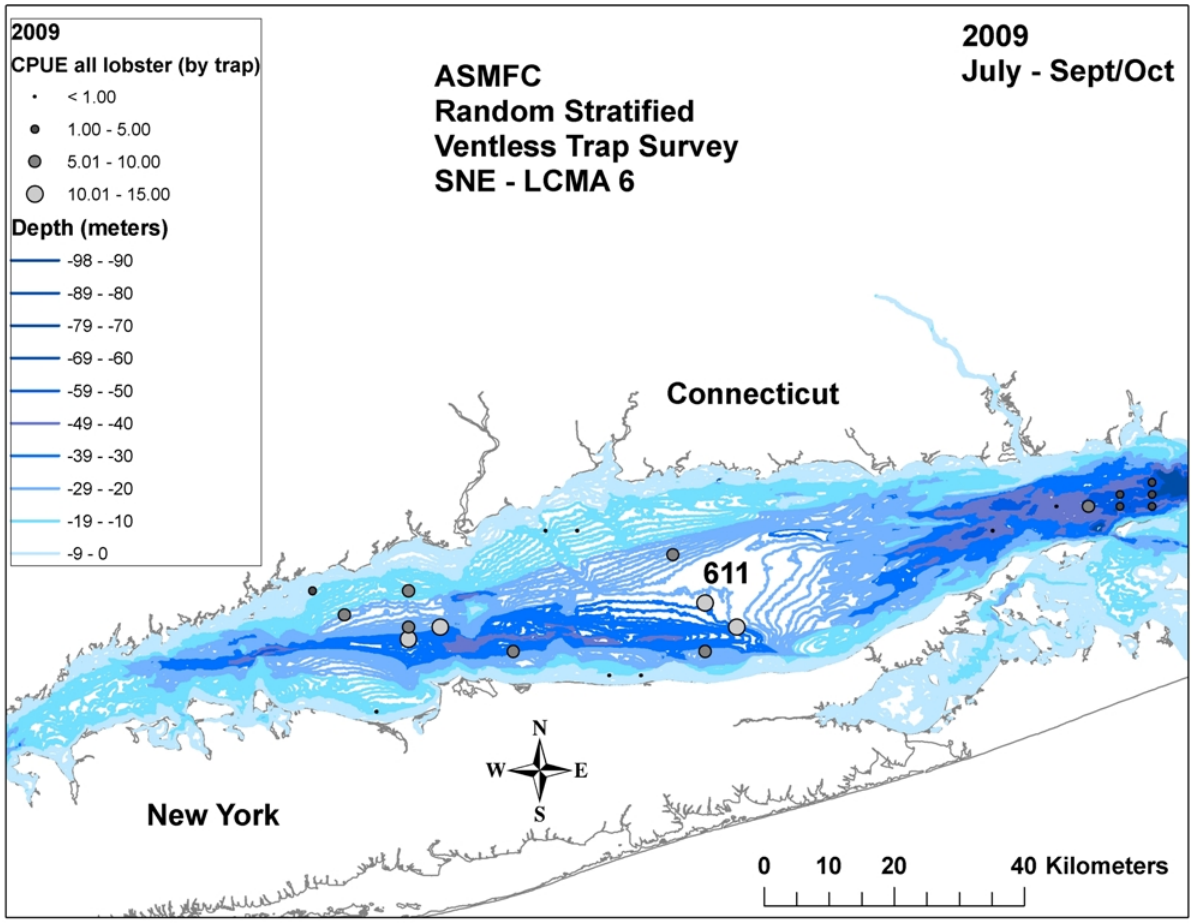
Appendix 18


2007
July - Sept
ASMFC
Random Stratified
Ventless Trap Survey
SNE - LCMA 6
2007
CPUE all lobster (by trap)
< 1.00
1.00 - 5.00
5.01 10.00
Depth (meters)
-98 - -90
-89 - -80
-79 - -70
-69 - -60
-59 - -50
-49 - -40
-39 - -30
-29 - -20
-19 - -10
-9 - 0
Connecticut
611
New York
N
W
E
S
0 10 20 40 Kilometers

Appendix 18

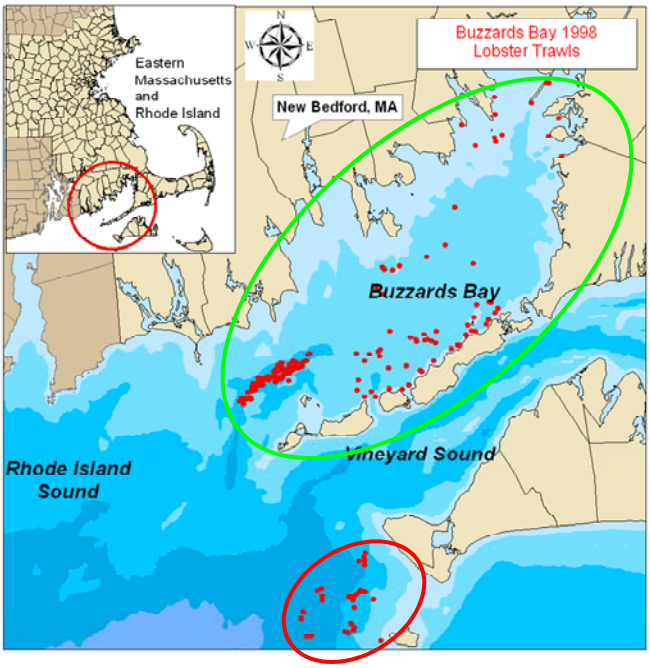

2008
CPUE all lobster (by trap)
< 1.00
1.00 - 5.00
5.01 - 10.00
10.01 - 15.00
Depth (meters)
-98 - -90
-89 - -80
-79 - -70
-69 - -60
-59 - -50
-49 - -40
-39 - -30
-29 - -20
-19 - -10
-9 - 0
ASMFC
Random Stratified
Ventless Trap Survey
SNE - LCMA 6
2008
July - Sept/Oct
Connecticut
611
New York
N
W
E
S
0 10 20 40 Kilometers

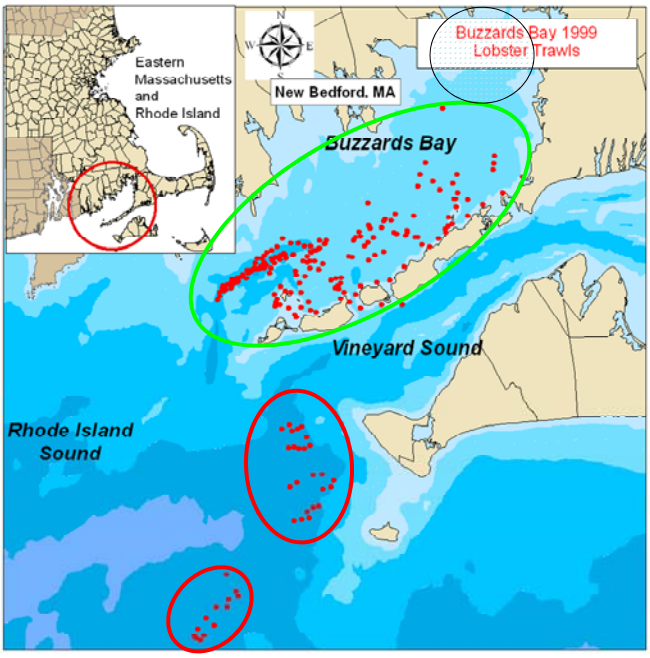
Appendix 18


2009
CPUE all lobster (by trap)
< 1.00
1.00 - 5.00
5.01 - 10.00
10.01 - 15.00
Depth (meters)
-98 - -90
-89 - -80
-79 - -70
-69 - -60
-59 - -50
-49 - -40
-39 - -30
-29 - -20
-19 - -10
-9 - 0
ASMFC
Random Stratified
Ventless Trap Survey
SNE - LCMA 6
2009
July - Sept/Oct
Connecticut
611
New York
N
W
E
S
0 10 20 40 Kilometers

Appendix B

MA Sea Sampling catch by trawl and depth





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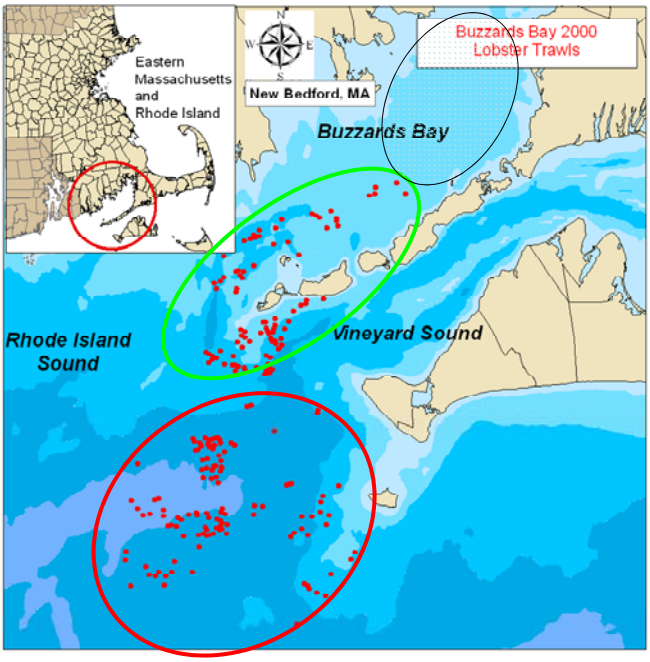
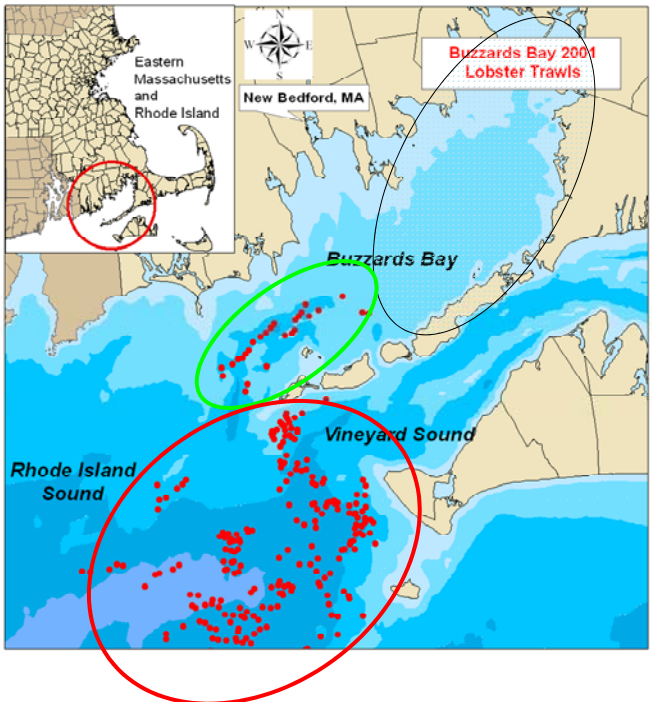

Eastern
Massachusetts
and
Rhode Island
New Bedford, MA
Buzzards Bay 2000
Lobster Trawls
Buzzards Bay
Vineyard Sound
Rhode Island
Sound


Eastern
Massachusetts
and
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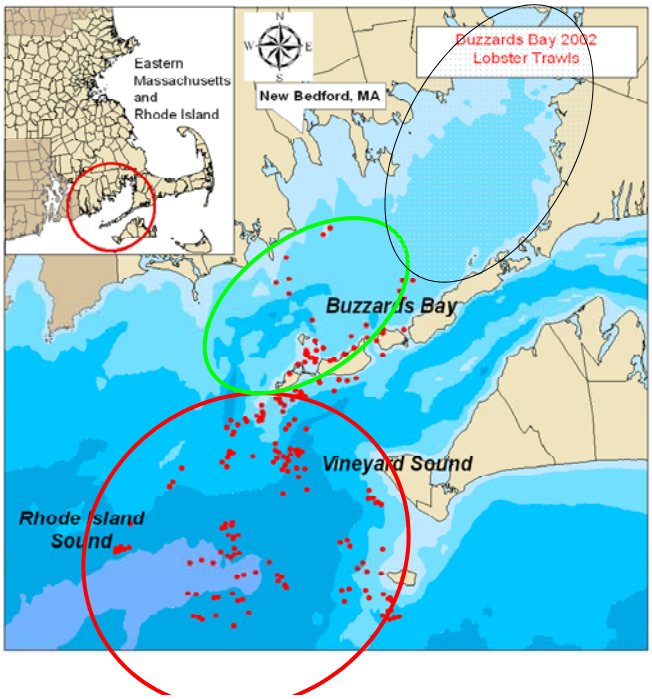
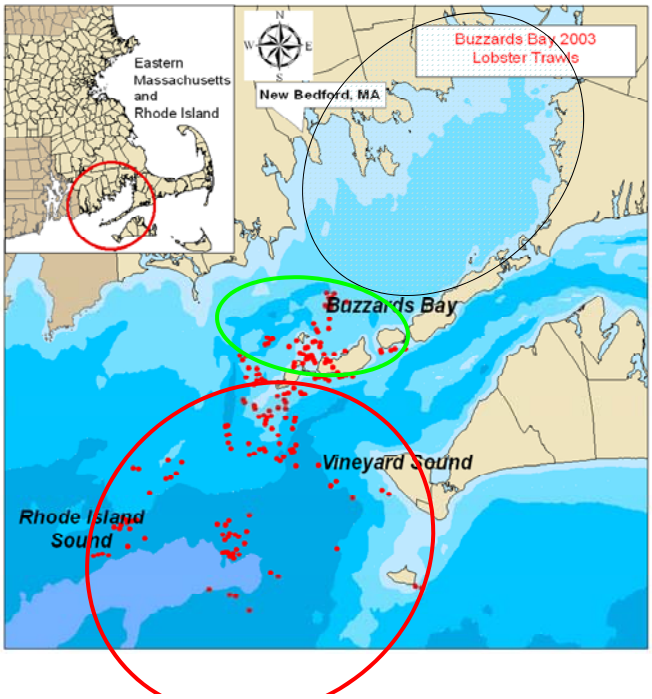
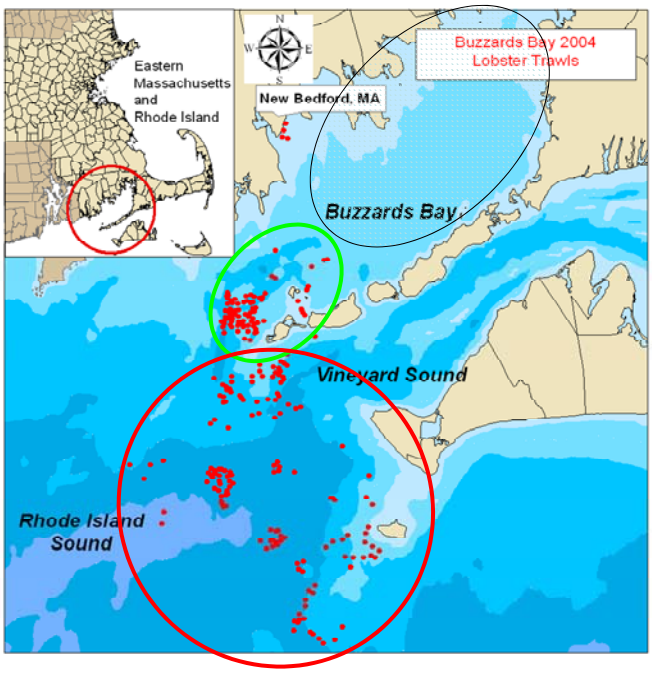
Buzzards Bay 2001
Lobster Trawls
Buzzards Bay
Vineyard Sound
Rhode Island
Sound

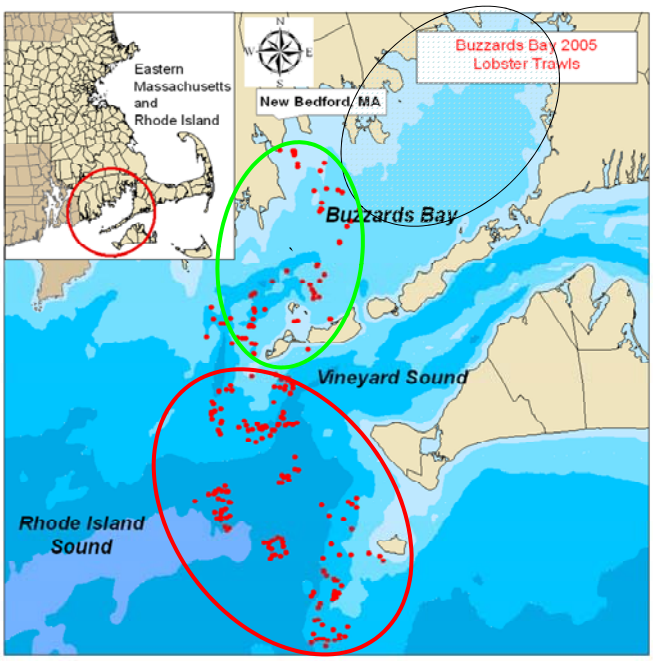
Appendix 18


Eastern
Massachusetts
and
Rhode Island
New Bedford, MA
Buzzards Bay 2002
Lobster Trawls
Buzzards Bay
Vineyard Sound
Rhode Island
Sound

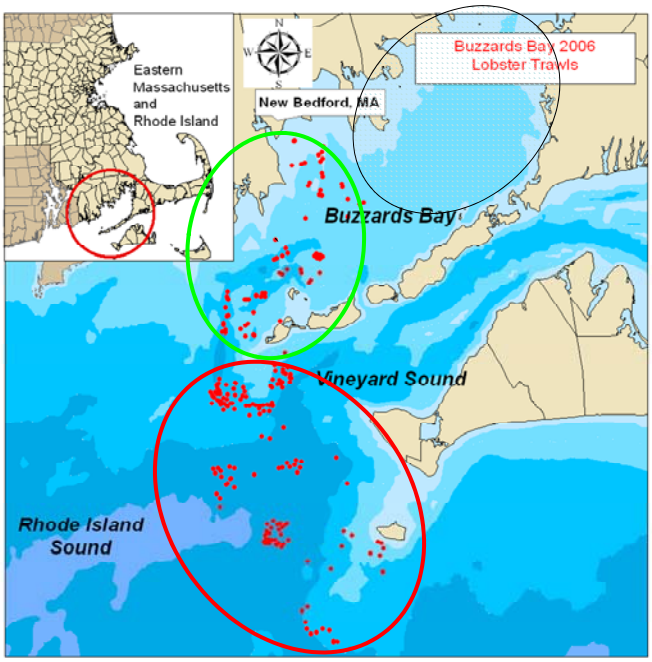

Eastern
Massachusetts
and
Rhode Island
New Bedford, MA
Buzzards Bay 2003
Lobster Trawls
Buzzards Bay
Vineyard Sound
Rhode Island
Sound

Appendix 18


Eastern
Massachusetts
and
Rhode Island
New Bedford, MA
Buzzards Bay 2004
Lobster Trawls
Buzzards Bay
Vineyard Sound
Rhode Island
Sound


Eastern
Massachusetts
and
Rhode Island
New Bedford, MA
Buzzards Bay 2005
Lobster Trawls
Buzzards Bay
Vineyard Sound
Rhode Island
Sound

Appendix 18


Eastern
Massachusetts
and
Rhode Island
N
W
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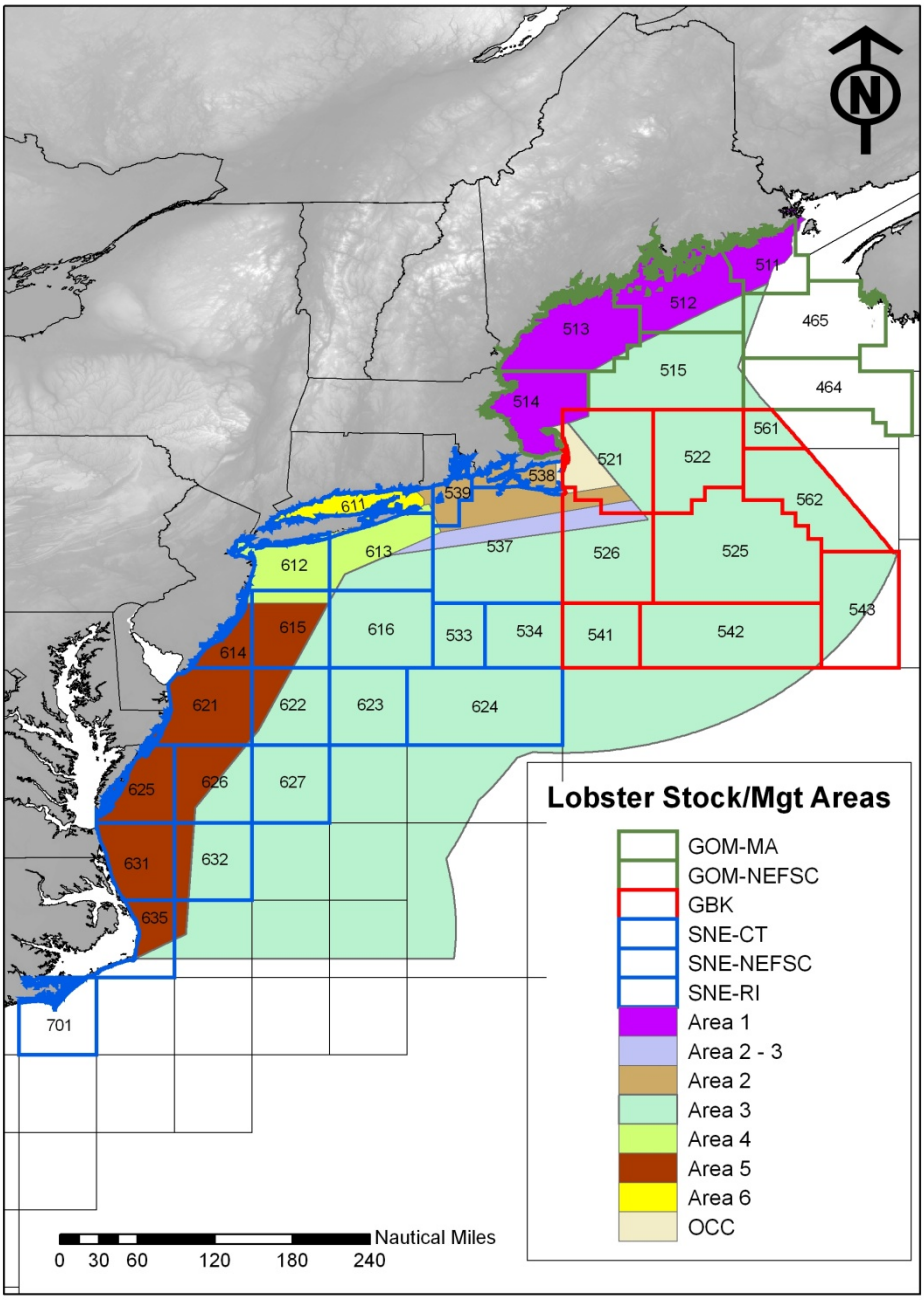
S
New Bedford, MA
Buzzards Bay 2006
Lobster Trawls
Buzzards Bay
Vineyard Sound
Rhode Island
Sound

Appendix C

National Marine Fisheries Service Statistical Area Map



Appendix D

SNE lobster landings (lbs) by NMFS statistical area

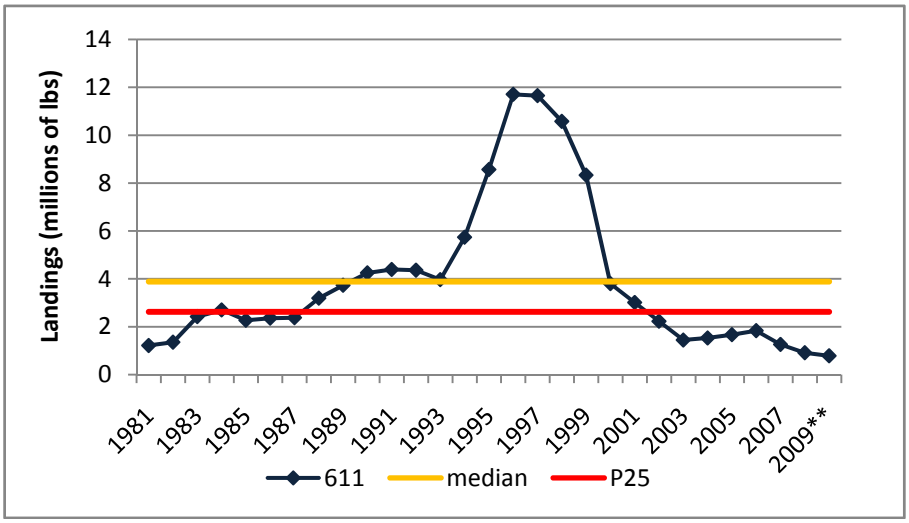


Figure E1. 611 landings (millions of lbs). 2008 & 2009 data preliminary (NY underestimate)

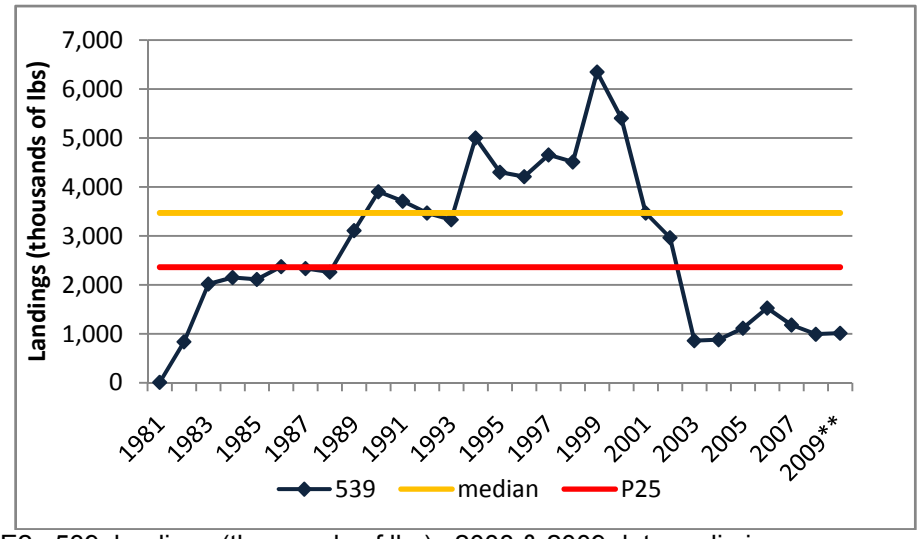


Figure E2. 539 landings (thousands of lbs). 2008 & 2009 data preliminary

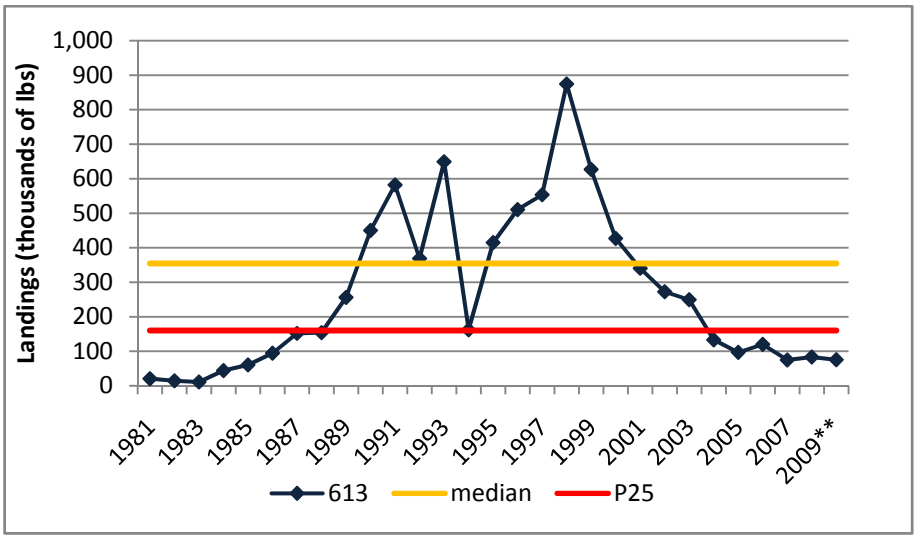


Figure E3. 613 landings (thousands of lbs). 2008 & 2009 data preliminary (2008 & 2009 NJ-south missing, NY underestimate)

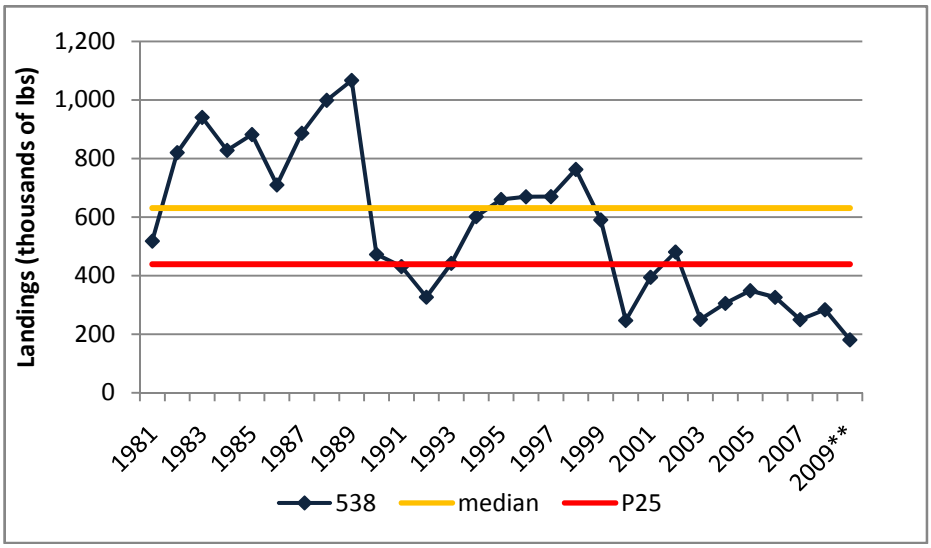


Figure E4. 538 landings (thousands of lbs). 2008 & 2009 data preliminary

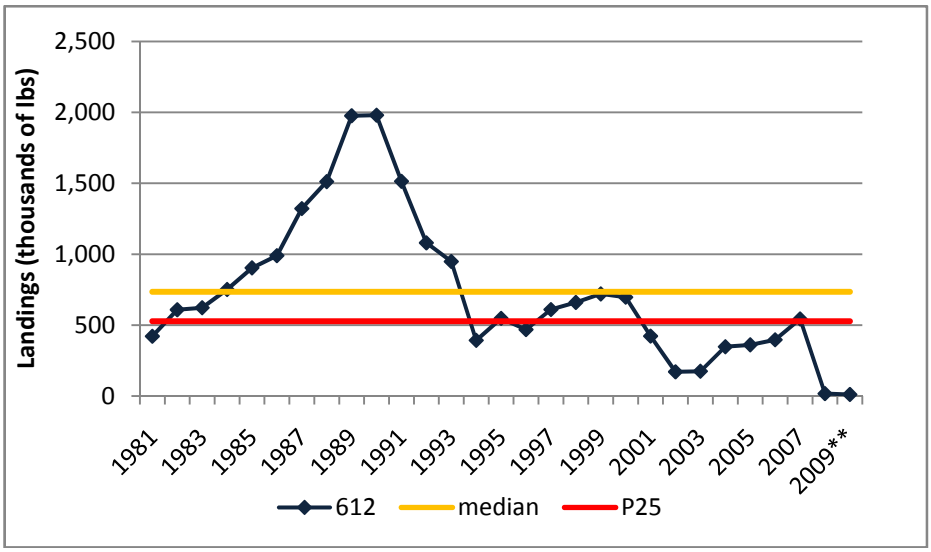


Figure E5. 612 landings (thousands of lbs). 2008 & 2009 data preliminary (2008 & 2009 NJ-south missing, NY underestimate)

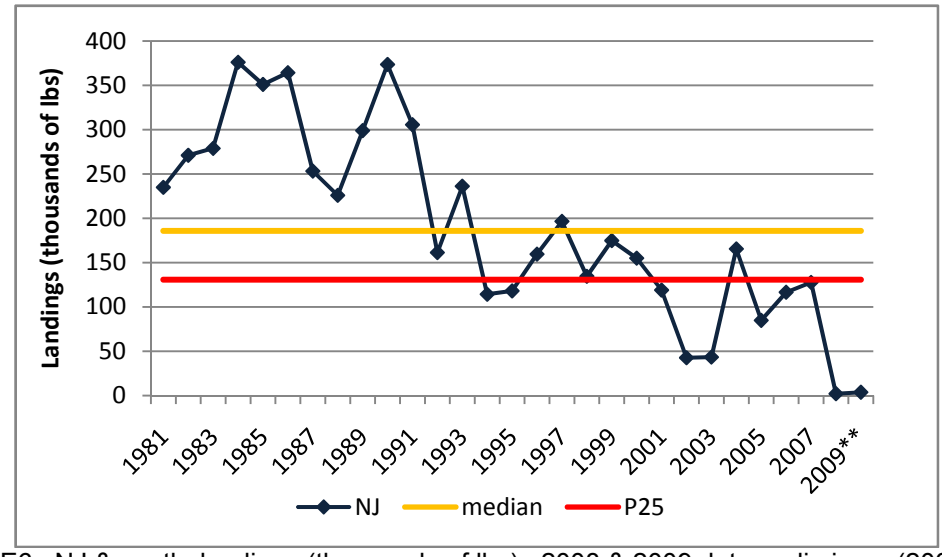


Figure E6. NJ & south landings (thousands of lbs). 2008 & 2009 data preliminary (2008 & 2009 NJ-south missing)

Appendix 18

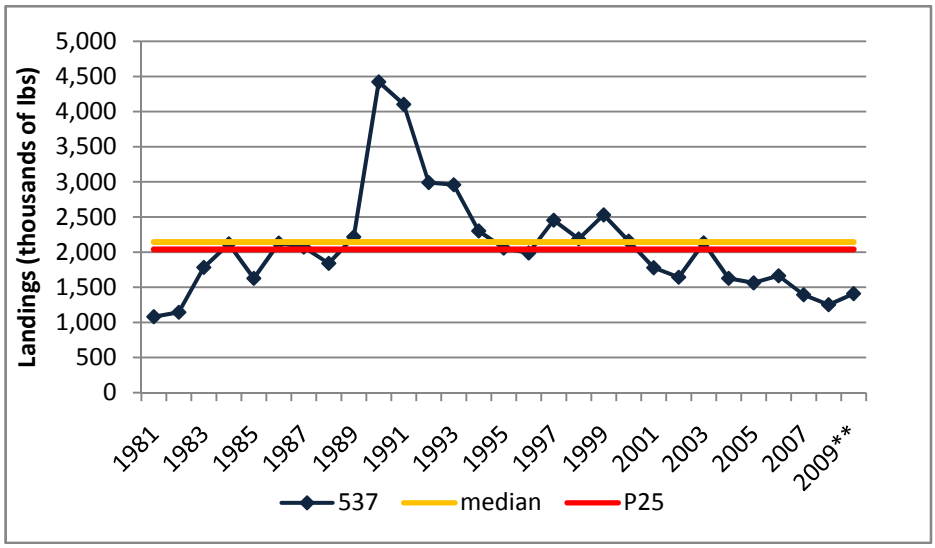


Figure E7. 537 landings (thousands of lbs). 2008 & 2009 data preliminary

Appendix E

Technical Committee Report to the Board in Response to the 2005 Assessment

F10:

- Management measures relevant to achieving F10 may not be meaningful in regards to the new reference points.
- Current measures have contributed to stock status up to 2003. Current can be changed to achieve the goals of the new assessment.
- Because of the poor condition of the SNE stock, the TC recommends that current management strategies remain in place, while the board develops a new strategy based on the results of the 2006 stock assessment.

New Reference Points:

- Proposed reference points cannot be used to compute a quantified rebuilding schedule because they don't have a time step.
- For stocks that need a lot of help, output controls are more effective than input controls. We can't determine effects of input controls such as gauge increases with the new reference points, but we can give advice on output controls such as percent reduction in landings that can be equated to a short-term reduction in fishing mortality.
- The current F generated in the last assessment (2001-2003) can be used to project percentage drops in F for the next few years. As the Length Based Model becomes available for all stock areas, projection scenarios under different management measures will be possible.
- Reducing F through Season closures, Quota, and Area closures
- A suite of measures could be developed that the TC believes would rebuild the stock, then we would continue to evaluate and fine tune the management measures as we go along.

Stock Status by Management Area:

The status of the stocks is clearly pointed out in the 2006 assessment document.

- Area 1 and north Area 3 (GOM) as a whole are ok, though there is concern about Stat area 514.
- Areas 2, 4, 6, 5, and SW portion of Area 3 (SNE) are depleted
- Outer Cape Cod and mid-Area 3 (GBK) are ok.
- Because Area 3 spans the entire coast, its status changes from north to south: East of 70° longitude is ok, West of 70° longitude is depleted

Stock Recommendations:

<u>GOM</u>

Recommend status quo

- The amount of effort in the GOM is a concern, not necessarily for its current impact on F and N but its impact on the fishery.

- The TC recommends that the ASMFC Socio-Economic Subcommittee conduct an economic assessment of the risk to the fishery if abundance were to decline to median levels in the GOM. The Subcommittee should examine whether the industry could respond to a serious drop in abundance without economic hardship.
- Stat Area 514 – Trawl survey indices are at all time low. Recommend more conservative management strategies to rebuild the stock.

There was discussion on the lack of relationship between effort (number of traps) and F. Work in GOM at Monhegan Island has shown that the cumulative catch were similar in areas with 500 and 150 traps, suggesting the ability to compensate for catch even with significant reductions in traps. There is some concern that if the fishery is more efficient, lobstermen can continue to harvest even when abundance is very low. Conversely, a large amount of gear will not increase harvest proportionally. It will only make the fishery inefficient. There were other comments that the Monhegan Island study may not be applicable to all areas or all stock densities. Decreasing trap numbers could, in some cases, decrease the area that can be fished. Data from these trap reduction studies are instructive and should be provided to Economic Subcommittee for their analyses.

GBK

Recommend status quo

- As with the GOM stock, increases in effort in GBK are a concern. There is also concern about the shifting of effort from the SNE canyons to GBK (Area 2-3 overlap to Area 3) due to the depleted stock status in SNE (serial depletion).
- The TC recommends that the board consider limiting movement across a line drawn at 70° longitude and 42° 30' latitude. To prevent effort shifts from south to north within Area 3.
- The TC also voiced some concern that the newly established allocations for Area 3 may be higher than the original 2000 allocations due to allocation decisions made for Area 2-3 overlap.

Preliminary port sampling in Stat Areas 525 and 562 (GBK) sampled very large lobsters. Bob examined potential effect of a maximum size based on the sampling:
5" max size – 50-60% reduction in catch in weight
6" max size – 20-30% reduction in catch in weight
6.5" max size – 10% reduction in catch in weight

There was discussion pro and con about the usefulness of instituting a maximum size on GBK to protect these big lobsters. Pro –these large lobsters produce many more young than small lobsters if they are protected for their lifetime; they are "proven spawners" that may be genetically and behaviorally superior. As result of low harvest rates or migration, areas with a high proportion of large lobster exist. They could be protected now, not waiting for a recovery in other areas. Con – Fishermen would need to harvest a lot more lobsters in the slot size to compensate for the loss of the large lobsters with the max size; harvest rate may be so high that few lobsters reach maximum size. Maximum gauge size

could work if you reduce the F below current levels so the lobsters can grow through the slot limit and reach the maximum gauge size.

SNE

- F is at or near median levels but abundance is depleted well below median levels.

Stock rebuilding options:

1. Most effective way to increase N is to have a complete harvest moratorium.

2. Limit harvest by implementing an annual harvest quota lower than current landings.

3. Input Controls - Propose a suite of iterative measures to reach target abundance levels no later than 2015.

10 year rebuilding plan.

Goal: Reach target abundance levels no later than 2015 through a 30 – 40% decrease in F End point is 3 1/2" minimum length, trap levels 50% lower than 2005 levels, and a 5" maximum length.

Year	Trap Reduction	Min Gauge mm	Min Gauge "	Max Gauge
1 (2006)	5%	84 mm	3 5/16	5"
2 (2007)	5%	85	3 11/32	"
3 (2008)	5%	86	3 3/8	"
4 (2009)	5%	86	3 3/8	"
5 (2010)	5%	87	3 13/32	"
6 (2011)	5%	87	3 7/16	"
7 (2012)	5%	88	3 15/32	"
8 (2013)	5%	88	3 15/32	"
9 (2014)	5%	89	3 1/2	"
10 (2015)	5%	89	3 1/2	"

Monitor and evaluate annually and revise management as needed since there is no direct relationship between reductions in F and increases in N. This schedule could be initially accelerated, followed by a period of years with no change during which stock status could be evaluated. When the target abundance is met, the schedule will be suspended.

Closed season *(this addresses water quality/ lobster health issues):*

August 1 – October 1 Closed Season

The closed season would be instituted during the time period of high water temperatures in Area 6. This is also a time of year when lobsters concentrate in isolated deep cool areas which may make effort more effective or stressed animals more susceptible to disease or death. The closed season by itself would not have a substantial effect on increasing N. If closed season instituted, it should be effective immediately.

Recommendation to Socio-Economic Committee

The TC recommends that the Socio – economic subcommittee examine effects of closed season in relation to elimination of harvest of paper shell lobsters, and an examination of trap reductions in all LCMAs.

Appendix E

Atlantic States Marine Fisheries Commission
1444 Eye Street, N.W., Sixth Floor
Washington, D.C. 20005
(202) 289-6400 phone
(202) 289-6051 fax
www.asmfc.org

MEMORANDUM

July 23, 2009

To: American Lobster Management Board

From: American Lobster Technical Committee

RE: Recommendations for rebuilding

At the May Board meeting the Technical Committee (TC) was tasked to provide the Board guidance on responding to the results of the 2009 lobster stock assessment. The TC suggests the Board adopt the reference points recommended in the stock assessment document rather than those recommended by the peer reviewers because they are more risk averse and reflect conditions experienced by the fishery in the last 25 years. The Southern New England (SNE) stock, currently at historic (1982-2007) low abundance and experiencing relatively low exploitation, will need a rebuilding strategy to attempt to regain its former recruitment productivity. Setting a reference threshold abundance below the current level and exploitation above it, as suggested by the Peer Review, will make these goals almost impossible to accomplish. For the Gulf of Maine stock (GOM), the Assessment reference points increase the probability of maintaining the current high abundance and steady exploitation rate that population has experienced for the last 15-20 years. The Georges Bank (GBK) stock condition is similar, with similar goals of maintaining this fishery as small and productive.

Regardless of the reference points chosen by the board there is an immediate need to address rebuilding in the entire SNE stock area and in portions of the GOM. The following recommendations are based on rebuilding the lobster stock to the assessment document reference points.

Overfishing is not occurring in any of the three lobster stocks. The SNE stock is the only one that is depleted. Current abundance of the SNE stock is the lowest observed since the 1980s and exploitation rates and effort have declined since 2000. Recruitment has remained low in SNE since 1998. Given current low levels of spawning stock biomass and poor recruitment further restrictions are warranted.

In the GOM stock, the assessment showed that Area 514 (the southern most portion of the GOM stock) has continued to experience very high exploitation rates and declines in

recruitment and abundance since the last assessment. The TC recommends further restrictions here given the persistence of low recruitment and its negative effect on total abundance and egg production potential (Xue et al. 2008) . Across GOM, effort levels in recent years are the highest observed since 1982 (both in number of traps and soak time) and further increases in effort are not advisable.

As highlighted in the Advisory Report, the TC recommends that data collection be improved; specifically, increase the percent of harvester trip reports and initiate recreational data collection, standards, and requirements as part of state compliance within the Fishery Management Plan (FMP).

For all three lobster stocks it is important to scale the fishery to match the current abundance and environmental conditions. The recommended management actions have the maximum likelihood of rebuilding depleted stocks even if the environment becomes less favorable. Some of the reasons for decline in abundance are external to the fishery (Balcom and Howell, 2006 and Glenn and Pugh, 2006), however reducing harvest removals of mature adults has the highest likelihood of restoring abundance. The goal is to rebuild and maintain all three stocks at or above historic (1982/4 – 2003) median abundance with a healthy stock structure able to sustain itself within the constraints of the existing environment.

Recommendation for Southern New England (Applicable to LMA's 2, 3, 4, 5, and 6)

Changes to existing management strategies are required in order to rebuild the SNE lobster stock by 2022, as required by the FMP. The magnitude of changes that are necessary to potentially see sustained improvements in stock abundance are significant. Using Assessment modeling results and abundance reference point, the SNE stock abundance 'deficit' is 10.7 million adult lobsters, requiring an increase equivalent to 73% of the current stock size of 14.7 million. In order to see an abundance increase of this magnitude, landings should be reduced by at least 50% from the average of the last 3 years.

The TC recommends output controls as the best method to rebuild the SNE stock.

Alternatively, input controls can accomplish rebuilding, but only if latent effort (traps and permits/licenses) are minimized or removed – and actively fished traps are reduced to a level where effort and catch are linear. Input controls are less certain in obtaining catch reductions that may lead to stock rebuilding, an additional measure is needed to work in concert with effort reduction. Several alternatives were discussed by the TC members. Some members support using a substantial (as listed below) seasonal closure while a minority supports a narrow slot limit. Those that do not support the slot are concerned that such a measure could increase discard mortality and will substantially increase the inefficiency of the fishery. Both of these concerns stem from the substantial increase in the discard rate that would result from having a very narrow slot limit. Those that do not support the season closure are concerned about the potential loss of market and the probability of some recoupment by the fishery; possible larger catches in the open season

could negate an unknown portion of the gains in protection during the closed season and make the fishery economically less stable. The TC believes the recommended input and output controls may have substantial socio-economic and law enforcement effects, and suggests that the Socio-Economic and law enforcement Committees investigate effects of these controls to provide guidance to the Board.

The controls listed below should apply universally to all gear types, both commercial and recreational.

Output Controls:

1. Harvest Moratorium: this measure will eliminate fishing mortality directly and facilitate the fastest rebuilding.
    a. There are concerns that the inshore fishing effort may be displaced into federal waters. Biological and economic problems may occur.
2. Quota/landings reduction (e.g. TACs, ITQs): Quota can directly control total harvest and fishing effort. Quota can promote efficiency within the fishery without the need of direct effort controls. A quota would be the most effective way to reduce harvest of lobster in the Southern New England stock.
    a. There are concerns that under-reporting, no reporting, or mis-reporting will occur under a quota management system due to the large number of points of sale.
    b. Quotas should be designed to minimize discard mortality.

Input controls:
If choosing these measures, the Board will need to implement severe adjustments to current input controls. Minor input controls as adopted in previous years, such as small changes in gauge size or minimal changes in trap numbers, will not be effective in rebuilding the stock. All input controls must be supported by a concurrent reduction in effective effort.

1. Effort reduction
    a. Minimizing/removal of latent effort
    b. Trap reduction
        i. Initially 50% of current reported trap usage.
    c. License reduction

2. Closed Seasons
    a. Summer closure (at minimum June – October) would substantially reduce harvest, while maximizing the reproductive potential of the stock, by allowing lobsters to molt, mate and extrude eggs without being disturbed by the fishery. This seasonal closure would also help minimize discard mortality related to molting and high summer water temperatures. Instituting gear removal during the closed season would facilitate

compliance, eliminate incidental mortality of lobster and other species, and allow for easier collection of abandoned gear.

b. A closed season could have a positive effect on protected species (marine mammals, sea turtles) efforts by greatly reducing gear entanglements.
c. Close seasons generally encourage harvest immediately after opening and likely need to be enacted in conjunction with significant effort reductions.
d. Reduction of gear conflicts among other commercial and recreational activities.

3. Slot limit: biologically could increase the size and productivity of the population. By not harvesting the largest lobster, this measure has the potential to increase abundance at the fastest rate if the existing maximum size is substantially reduced. Larger multiparous animals can provide periodic waves of larval recruitment which have been shown to have a higher survival rate than larvae produced by first-spawners. This production can better compensate for low adult stock size and reduced juvenile survival. The historic record of larval production in Long Island Sound shows spikes of production every 3-5 years during the two decades prior to the 1999 die-off, with an absence of any strong production from 2000 -2008. Retaining larger animals in the population may restore the historic pattern. In SNE the maximum size would have to be reduced from 5 ¼" (133mm) CL to within one molt-size of the minimum size of 3 3/8" (86mm) CL (e.g. 3 ¾" (95mm) CL) to be immediately effective.
    a. There is concern that the discard mortality may be unacceptably high.
    b. There is also great concern that there would be a substantial decrease in the efficiency of the SNE fishery, whereby the fleet would have to expend substantial effort (trap hauls) and resources (bait and fuel) to catch substantially fewer lobsters.
4. Closed Areas
    a. Could be effective if large concentrations of spawning adults were protected from fishing and incidental mortality.
    b. Must be large enough to minimize migration out of closed area

<u>Recommendation for GOM/Area 514 Stock</u>

The TC is concerned with a ~15 year decline in abundance to time series low, a loss of local spawning stock biomass, and decreasing catch rates coupled with increasing soak times. The TC recommends attempting to rebuild productivity in this area by increasing the gauge to 3 3/8 inches (86mm) and reducing the effort by 50% by removal of half of all active traps in Stat Area 514. Anyone fishing in 514 should abide by these regulations. Not only will this improve stock health, it will also promote economic efficiency in the fishery. These actions address the harvest of immature females in 514 (12% of females

are mature at the current minimum length of 82.6mm or 3 ¼”) which may be undermining stock production.

GBK
TC warns against any increases in effort or shifts in effort from other stock areas.

Citations
Balcom, N. and P. Howell, 2006. Responding to a resource disaster: American lobsters in Long Island Sound, Sea Grant Project Final Report CTSG-06-02, 22p.

Glenn, R. and T. Pugh, 2006. Epizootic shell disease in American lobster (Homarus americanus) in Massachusetts coastal waters: interactions of temperature, maturity, and intermolt duration. J Crustacean Biol 26(4):639-645.

Xue, H., L. Incze, D. Xu, N. Wolff, and N. Pettigrew. 2008. Connectivity of lobster populations
in the coastal Gulf of Maine. Part I: Circulation and larval transport potential. Ecological Modelling **210**:193-211.