



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

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DEC 21 2016

Ms. Margo Schulze-Haugen
Chief, Atlantic Highly Migratory Species Management Division (F/SF1)
National Marine Fisheries Service, NOAA
1315 East West Highway,
Silver Spring, Maryland 20910

Re: Draft Environmental Impact Statement (DEIS): Amendment 5b to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan; ERP No.: NOA-E91038-00; CEQ No.: 20160242

Dear Ms. Schulze-Haugen:

The Environmental Protection Agency (EPA) reviewed the subject document pursuant to the Clean Air Act (CAA) §309 and the National Environmental Policy Act (NEPA) §102(2)(C). The National Marine Fisheries Service (NMFS) proposes 2 recreational and 4 commercial fishery management measures as its preferred alternatives to reduce Dusky shark (*Carcharhinus obscurus*) bycatch mortality, to end overfishing, and to rebuild Atlantic Dusky sharks consistent with the 2016 update to the 2011 stock assessment (SEDAR 21). To meet these three protective goals, proposed management measures require both recreational and commercial fishermen to complete shark identification and regulation training (A2 & B5) and to implement circle-hook requirements (A6a & B9). Additionally, commercial fishermen are subject to "shark release" (B3) and a "fleet communication and relocation" protocol (B6) requirements. According to the DEIS, the proposed management measures collectively are expected to reduce overall Dusky shark mortality by at least 35% by reducing bycatch, reducing discard mortality rates, and increasing compliance with prohibited species regulations. The NMFS also proposes to improve Dusky shark catch data collection that will help to ascertain the success of the proposed management measures.

The EPA rates this DEIS as lack of objections (LO) per its EIS rating criteria (available at: <http://www2.epa.gov/nepa/environmental-impact-statement-rating-system-criteria>). The EPA supports the overall efforts by NMFS to further protect this shark species. However, the EPA identified several technical issues that were not fully addressed in the DEIS and which are detailed in the enclosed comments (See enclosure).

These technical comments include recommendations for the NMFS' consideration in the development of the Final EIS (FEIS) and in the final selection of the preferred alternative(s).

Should you have any questions, please contact Ms. Beth Walls, of my staff, by e-mail at walls.beth@epa.gov or 404-562-8309.

Sincerely,

A handwritten signature in blue ink, appearing to read "G. Alan Farmer". The signature is fluid and cursive, with the first name "G." being particularly prominent.

G. Alan Farmer
Director
Resource Conservation and Restoration Division

Enclosure
EPA Detailed Comments

ENCLOSURE
EPA's Detailed Comments
Draft Environmental Impact Statement (DEIS): Amendment 5b to the 2006 Consolidated Atlantic
Highly Migratory Species Fishery Management Plan (FMP)
CEQ No.: 20160242

Key or Significant Environmental Impacts

The proposed action concerns the Dusky shark, one of 19 shark species in the prohibited shark complex explicitly banned from commercial and recreational landings and retention. The Dusky shark is a highly migratory species (HMS) and is included in the National Marine Fisheries Service (NMFS)' Atlantic Highly Migratory Species (HMS) FMP. The Dusky shark inhabits warm temperate and tropical coastal waters of the western North Atlantic, ranging from southern New England to the Caribbean and Gulf of Mexico to southern Brazil. This shark avoids areas of lower salinity and rarely is found in estuarine environments. The proposed action's key impacts are primarily to the recreational and commercial fishermen who target sharks and the Dusky shark may benefit incidentally from the action.

Background

In the 1993 FMP for Sharks of the Atlantic Ocean, the NMFS identified large coastal sharks (LCS) including Dusky sharks as being overfished. It established a quota based on a 1992 stock assessment. The 1994 stock assessment determined the 1993 FMP's proposed total allowable catch increases could risk preventing stock recovery. Consequently, commercial LCS levels were capped at 1994 levels and a recreational trip limit of four LCS per vessel was established. The 1996 stock assessment found no clear evidence of stock rebuilding. The 1998 stock assessment found LCS were being overfished and the stocks would not rebuild under the 1997 harvest levels. The 1999 FMP, influenced by the 1998 stock assessment, included numerous measures to rebuild or prevent overfishing of Atlantic sharks in commercial and recreational fisheries, such as reducing commercial LCS quotas and recreational retention limits, and adding Dusky sharks along with 13 additional species to the list of prohibited shark species.

The Dusky shark stock, independent of the LCS complex, was first assessed in 2006. All assessment model results indicated this shark stock had been heavily exploited and as a result had a predicted rebuilding timeframe of 100 to 400 years. In 2011, the Dusky shark stock was assessed using the Southeast Data, Assessment, and Review (SEDAR) process which determined that the Dusky shark stock had been both overfished and was experiencing continued overfishing (SEDAR 21).¹ In 2016, the 2011 SEDAR 21 assessment was updated. The NMFS determined that this species' prohibited status makes the use of catch data in the assessment largely impractical, the 2016 Dusky shark stock assessment update used an age-structured catch-free production model. Again, the NMFS determined the status of Dusky sharks as overfished and with overfishing continuing despite the 2000 prohibition of landing and retaining Dusky sharks. Despite the implementation of the 2008 adopted rebuilding plan, which set the year 2108 as the terminal year for rebuilding Dusky shark stock consistent with the

¹ Stock Status Determination for Atlantic Dusky Sharks. 81 FR 69043 (Oct. 5, 2016) Vol. 81, No. 193.

finding, the stock could rebuild within 100 to 400 years. And despite the 2010 establishment of annual catch limits and associated accountability measures. According to the 2016 assessment update (page 33), “[t]he combination of some life-history parameters and the vulnerability of dusky sharks to the various gears long before they become mature suggest a population that cannot support much exploitation. However, the prohibition on catches in recent years appears to have reduced, but apparently not ended, overfishing. With the present allocation of effort among fishing sectors, projection results indicate that the stock appears to be capable of rebuilding by the end of the current rebuilding time period (2086-2200, depending on the scenario), and that it could sustain a small amount of fishing-related mortality during this period”.

Proposed Action

The NMFS is the federal agency responsible for the management, conservation, and protection of living marine resources within federal waters. In this action, the NMFS proposes recreational and commercial fishery management measures to reduce Dusky shark bycatch mortality in its effort to end overfishing and rebuild Atlantic Dusky sharks consistent with the 2016 update to the 2011 stock assessment (SEDAR 21). These management measures (preferred alternatives) require both recreational and commercial fishermen to complete shark identification and regulation training (A2 & B5) and implement circle-hook requirements (A6a & B9). Additionally, commercial fishermen are subject to “shark release” (B3) and a “fleet communication and relocation” protocol (B6) requirements. The proposed management measures collectively are expected to reduce overall Dusky shark mortality by at least 35% by reducing bycatch, reducing discard mortality rates, and increasing compliance with prohibited species regulations. NMFS also aims to improving Dusky shark catch data collection (Pages 26 and 129 of the DEIS).

Affected Environment

The proposed action affects both the recreational and commercial targeted shark fisheries operating in the Atlantic Ocean holding HMS FMP permits. It will likely affect the Dusky shark species and other large coastal sharks within both the prohibited shark species complex and the large coastal shark complex.

The proposed action builds upon previous regulatory efforts to protect LCS species. The 1999 FMP for Atlantic Tunas, Swordfish, and Sharks established 6 individual permits: 3 for swordfish (directed, incidental, & hand gear permits), 2 for sharks (directed & incidental), and 1 for the Atlantic tunas longline. These permits were designed so that the swordfish directed and incidental permits are valid only if the permit holder also holds both a tuna longline and a shark permit. This reduced bycatch in the pelagic longline (PLL) fishery, by allowing limited retention of species that otherwise would likely have been discarded. Incidental shark catches could be retained (or not) consistent with the shark permit. This FMP also prohibited the landing and retention of Dusky sharks, among several other species of shark, which became effective in 2000. In 2005 for the period January – July in an area where Dusky sharks are known to frequent, the NMFS created the Mid-Atlantic Shark Closure Area offshore North Carolina because these sharks are still susceptible to gillnet and longline fishing gear despite being listed in the NMFS prohibited shark species complex. The 2008 Amendment 2 to the 2006 HMS FMP led to the reduction of the commercial, directed shark bottom-longline fishery impacts to Dusky sharks primarily

by prohibiting commercial harvest of Sandbar sharks (*Carcharhinus plumbeus*) outside of the Shark Research Fishery. Anecdotal evidence suggested vessels targeting Sandbar sharks were more likely to catch Dusky sharks due to similar habitat preferences of these two sharks. Because of this prohibition, shark fishermen started targeting shark species occurring closer to shore whereas the Sandbar and Dusky sharks tend to occur further offshore. In 2013, the NMFS established a Dusky shark interaction cap for the entire shark research fishery, with regional-specific caps, to reduce Dusky shark mortality. In 2014, in response to a petition for endangered species listing under the Endangered Species Act, the NMFS determined that the Northwest Atlantic Dusky shark population currently and in the foreseeable future has a low risk of extinction.¹

Recommendations

The EPA acknowledges the enormity of the NMFS' challenge in managing and rebuilding the Dusky shark stock from its overfished and continuing overfishing status. While Mexican landings appear to be decreasing and U.S. bycatch levels appear relatively low, at-vessel mortality rates appear to be high and when combined with the Dusky shark life history characteristics, this species is inherently more vulnerable to exploitation/bycatch and slower to recover from depletion than most other shark species.² We defer to the NMFS' expertise in these matters. However, after reviewing the DEIS, the EPA was unable to determine whether NMFS had fully considered the issues raised below.

Recommendation #1

The proposed management measures (preferred alternatives) collectively are expected to reduce overall Dusky shark mortality by at least 35% by reducing bycatch, reducing discard mortality rates, and increasing compliance with prohibited species regulations, while improving Dusky shark catch data collection to better understand the effects of these actions. It is unclear from the DEIS whether the above is consistent with the 2010/2011 stock assessment recommendation for a decrease in Dusky shark mortality of 58% against 2009 levels.² The EPA recommends that the FEIS clarify the proposed 35% reduction estimate in context of the 2010/2011 stock assessment recommendation to reduce mortality by 58%.

Recommendation #2

The DEIS does not appear to fully link the alternatives evaluated with their ability to reduce overall Dusky shark mortality by the 35% goal. The DEIS provides no correlated scientific information supporting the achievement of this goal with the combined 5 preferred alternatives or any of the evaluated alternatives. The evaluated alternatives did not appear to be compared regarding the ability of each alternative to achieve the proposed 35% mortality reduction. For example, the commercial hotspot alternatives discussed (B4a-h), do not compare anticipated or estimated results with obtaining the fishery rebuild goal nor do the recreational and commercial shark identification and regulation training alternatives (A2 & B5), make this comparison. The EPA recommends that the FEIS compare each

² DEIS, Section 1, p. 3.

alternative with the potential ability of that alternative to achieve the Dusky shark rebuild goal, particularly for the 5 preferred alternatives that comprise the proposed action.

Recommendation #3

The recreational and commercial shark identification and regulation training alternatives (A2 & B5, and to a certain extent B6) appear to be based upon two assumptions. First, because Dusky shark landings are prohibited in both the recreational and commercial shark fisheries within federal and state waters, continued 'reported' landings are likely the result of either species misidentification or ignorance of prohibited shark species regulations. According to the 2014 Northwest Atlantic Dusky Shark Status Review Report, Dusky sharks have been reported as landed in NMFS recreational fishing survey data, which, in addition to misidentification issues, may be due to limited understanding of the regulations.³ Second, because the NMFS will have an opportunity for focused outreach to shark fishermen to increase knowledge of regulations, Dusky shark features, and survival release techniques, Dusky shark mortality will likely be reduced.

The EPA recommends that the FEIS provide summaries of any studies or other scientifically-supportable information that supports these two underlying assumptions for this preferred alternative and that demonstrates the likelihood for its success. For example, identifying whether these type activities have demonstrated success in other fisheries. Furthermore, according to the DEIS, alternatives were dismissed from consideration because of the insufficient availability of scientifically-supportable information to determine alternative effectiveness in reducing Dusky shark mortality.

Table 1.3 – *Observed shark mortality in the prohibited shark complex from 2008 – 2015*, does indicate the reported number of Dusky shark mortality (4,788) is significantly greater than any of the other prohibited shark species listed (i.e., the next numerous shark reported was the Night shark (*Carcharhinus signatus*) at 1,079, compared to "0" for the Galapagos sharks (*Carcharhinus galapagensis*). However, Table 1.3 could also reflect fishing efforts being more concentrated in areas more likely to interact with Dusky and Night sharks rather than Galapagos sharks. Reportedly, the Galapagos shark tend to have a remote habitat, a preference for clear tropical waters with strong currents over coral or rocky bottom habitats surrounding oceanic islands, and a patchy circumtropical distribution.⁴ In contrast, Dusky sharks tend to migrate north – south along the Atlantic coast: moving north during the spring and returning south during the fall.⁵

Additionally, because Dusky sharks are morphologically very similar to, and genetically indistinguishable from the Galapagos sharks,⁶ differentiating between these two sharks can be difficult without the direct comparison of two specimens. Although the Galapagos shark can be distinguished from the Dusky shark with taller first and second dorsal fins and larger teeth, these characteristics can be difficult to discern from a boat in the ocean.⁷ Moreover, the easiest method to distinguish these two species is by the number of precaudal vertebrae: 103-109 for the Galapagos shark and 86-97 for the Dusky shark. This identification method requires the backbone to be exposed from the back of the skull to the base of the tail, thus killing the specimen, and not likely to be done with a prohibited species.⁸

Consequently, it is unclear how effective the proposed recreational and commercial shark identification training alternatives (A2 and B5) and the proposed communication protocol (B6) will be in differentiating between these two sharks and contributing to the 35% reduction goal in Dusky shark mortality.

Juvenile Dusky sharks can also be difficult to identify due to similarities with other sharks (e.g., young Sandbar and Dusky sharks look very similar even though the adults look quite different⁹, Galapagos, and Silky sharks (*Carcharhinus falciformis*)). The differentiation of Dusky sharks from Sandbar and Galapagos sharks may make minimal contribution to the reduction of Dusky shark bycatch. Distinctions between these three species can only decrease the reported mortality numbers not the actual shark mortality. It may reduce the number of Dusky sharks misidentified and subsequently increase the reported number of properly identified Sandbar and/or Galapagos sharks (assuming they will be properly identified as a result of these preferred alternatives). Moreover, all three species are prohibited from being landed and retained in the recreational and commercial fisheries. It is unclear whether these sharks will have to be landed in order to differentiate between these shark species. Furthermore, the 2016 update to SEDAR 21 still found the Dusky shark to be overfished with overfishing continuing without relying on reported catch data since this shark is on the prohibited species list. The DEIS does not fully explain how differentiating between these other sharks will contribute to the 35% reduction goal in Dusky shark mortality.

Additionally, the EPA also recommends that the NMFS provide incentives to tournament organizers, fishery associations, etc., to encourage and enlist their participation in increasing fishermen awareness of prohibited shark species identification and regulations in addition to NMFS' coordination with the Atlantic (15-state organization) and Gulf States (5-state organization) Marine Fisheries Commissions.

Recommendation #4

According to the DEIS, one of the preferred alternatives for the commercial fishery requires Atlantic shark limited access permit holders (directed or incidental) fishing with PLL gear to release all sharks not being boarded or retained by using a 'dehooker' or by cutting the gangion no more than three feet from the hook. This release requirement will be applied to all sharks, due to the difficulties in identifying Dusky sharks from other shark species, particularly when the shark is in the water.

The EPA recommends that the FEIS discuss the appropriateness of applying a similar requirement to recreational fishermen who hook a prohibited shark species such as the Dusky shark. A requirement to release sharks in the water in a manner similar to using a dehooker or by cutting the line leaving under 3 feet dangling from the hook.

Recommendation #5

The preferred circle-hook alternatives require the use of circle hooks by all recreational HMS permit holders fishing for sharks when using natural baits and using wire or heavy monofilament or fluorocarbon leaders (A6a) and by all commercial HMS directed shark permit holders using bottom longline gear (B9). The DEIS states that the majority of the Atlantic shark directed limited access permit holders already are required to use

circle hooks since they fish with PLL gear or use circle hooks with bottom longline gear. According to the DEIS, research suggests that circle hooks reduce shark at-vessel and post-release mortality rates without reducing catchability when compared to J-shaped hooks.

The EPA recommends that the NMFS provide incentives to tournament organizers, fishery associations, etc., to encourage and enlist their participation in advocating for recreational fishermen's use of circle hooks. The DEIS indicates that the NMFS declined to require the use of circle hooks by all Atlantic HMS permit holders participating in fishing tournaments when targeting or retaining sharks. Despite study results indicating circle hooks can serve as a conservation measure to maximize the probability of survival for sharks during recreational shark fishing¹⁰, some tournaments still allow the use of J-shaped hooks. The reduction in the number of tournaments allowing the use of J-shaped hooks can reasonably be expected to have a cumulative beneficial effect with the preferred alternatives A6a and B9. It is EPA's understanding that the existing Atlantic shark directed limited access permit holders are already required to use circle hooks.

Recommendation #6

The alternatives evaluated appear to compare qualitative and quantitative alternatives which may interfere with the NEPA required comparisons of the environmental impacts for each alternative. For example, the qualitative preferred alternatives are for training to enhance shark species identification, and increased knowledge of regulations to reduce Dusky shark mortality. No quantitative supporting data is provided to evaluate how the misidentification and/or limited knowledge of the prohibited shark regulations contributes to the Dusky shark stock's being "overfished" and continuing to "experience overfishing" status or that the improvement in these areas will contribute to a 35% reduction in Dusky shark mortality. The EPA recommends that the FEIS provide additional information that helps to quantify the proposed qualitative alternatives to help facilitate the comparisons including environmental impacts of all the evaluated alternatives, particularly the preferred alternatives identified in the DEIS.

Recommendation #7

According to the 2014 Northwest Atlantic Dusky Shark Status Review Report, hook time was identified as a significant factor in predicting at-vessel Dusky shark mortality and was highly correlated with soak time. This may suggest sharks are getting caught near the beginning of the set and reduced soak times may not adversely affect catch rates, but may help reduce at-vessel and post-release mortalities¹¹. The EPA recommends that the FEIS provide more detail concerning the appropriateness of addressing hook times or soak times toward achieving the 35% reduction in Dusky shark mortality.

¹ Status Review Report: Northwest Atlantic Dusky Shark (*Carcharhinus obscurus*) (2014) Camilla T. McCandless, Paul Conn, Peter Cooper, Enric Cortés, Sarah W. Laporte, and Marta Nammack, National Marine Fisheries Service National Oceanic and Atmospheric Administration.

² Id.

³ Id.

⁴ Florida Museum of Natural History: Galapagos Sharks at <https://www.flmnh.ufl.edu/fish/discover/species-profiles/carcharhinus-galapagensis/>

⁵ Status Review Report: Northwest Atlantic Dusky Shark (*Carcharhinus obscurus*) (2014) Camilla T. McCandless, Paul Conn, Peter Cooper, Enric Cortés, Sarah W. Laporte, and Marta Nammack, National Marine Fisheries Service National Oceanic and Atmospheric Administration.

⁶ Id.

⁷ Galapagos Shark: https://en.wikipedia.org/wiki/Galapagos_shark

⁸ Florida Museum of Natural History: Galapagos Sharks at <https://www.flmnh.ufl.edu/fish/discover/species-profiles/carcharhinus-galapagensis/>

⁹ NOAA, Northeast Fisheries Service, Apex Predator Program.

¹⁰ Willey, Angel L., Linda S. Barker, and Mark Sampson. 2016. A comparison of circle hook and J hook performance in the recreational shark fishery off Maryland. *Fish. Bull.* 114:370–372 (2016). doi: 10.7755/FB.114.3.9

¹¹ Status Review Report: Northwest Atlantic Dusky Shark (*Carcharhinus obscurus*) (2014) Camilla T. McCandless, Paul Conn, Peter Cooper, Enric Cortés, Sarah W. Laporte, and Marta Nammack, National Marine Fisheries Service National Oceanic and Atmospheric Administration.

