

*Appendix I – Comprehensive Conservation
Plan Implementation*

Appendix I – Comprehensive Conservation Plan Implementation

The Final Comprehensive Conservation Plan/Environmental Impact Statement (CCP/EIS) and Record of Decision (ROD) for the Lower Klamath, Clear Lake, Tule Lake, Upper Klamath, and Bear Valley Refuges, as approved by the Director of the Pacific Southwest Region of the U.S. Fish and Wildlife Service, will identify the selected plan. This appendix combined with the Final EIS will form the basis for the Final CCP. Implementation of the CCP can begin following the issuance of the ROD. Although it is our intent to implement the proposed strategies (projects) by the established time lines, the timing of implementation may vary depending upon a variety of factors, including funding, staffing, compliance with Federal regulations, partnerships, and the results of monitoring and evaluation. Some strategies, such as those related to habitat restoration, will require the completion of step-down plans and appropriate environmental compliance documents before they can be implemented. This appendix defines how the preferred alternative for each of the five refuges in the Klamath Basin Refuge (NWR) Complex (described in Chapter 4) would be implemented if they are identified as the selected plan in the ROD.

During the 15 years following CCP approval, the CCP will serve as the primary reference document for all refuge planning, operations, and management. Appendix F lists the various wildlife and habitat management and visitor services goals, objectives, and strategies for the preferred alternative for each refuge. Completion of any of these actions would however be dependent upon the various factors. These strategies would be implemented with assistance from new and existing partners, including public agencies, tribes, non-governmental organizations, and the public. Consistent public outreach and continued coordination with refuge constituents are essential components of this implementation process. Some of the partnership opportunities to be explored during the 15-year life of this CCP are described below, as are the step-down (detailed) plans, monitoring responsibilities, and staffing and funding requirements needed to successfully implement the CCP.

CCPs are intended to evolve with each Refuge, and the Improvement Act specifically requires that these plans be formally revised and updated at least every 15 years. The formal revision process will follow the same steps as those implemented for the initial CCP development process, with an emphasis placed on public involvement. Until a formal revision is initiated, the Service will periodically review and update the CCP (at least as often as every five years) to address needs identified as a result of monitoring or in response to adaptive management procedures. This CCP will also be informally reviewed by refuge staff while preparing annual work plans and updating the refuge databases. It may also be reviewed during routine inspections or programmatic evaluations. Results of any or all of these reviews may indicate a need to modify the plan. The goals described in this CCP will not change until they are reevaluated as part of the formal CCP revision process. However, the objectives and strategies may be revised to better address changing circumstances or to take advantage of increased knowledge of refuge resources. If revisions to the CCP are required prior to the initiation of formal revisions, the level of public involvement and associated National Environmental Policy Act (NEPA) documentation will be determined by the Refuge Manager.

Monitoring

Monitoring the effects of management actions on the Refuges' trust resources is an important component of the CCP, as is the documentation of the Refuges' baseline conditions. By completing baseline inventories and monitoring specific management actions, Refuge staff can better understand

the species, habitats, and physical processes that occur on the Refuges and the ecological interactions that occur between species. Monitoring is an ongoing management activity at each refuge in the Klamath Basin Refuge Complex and will continue per available funding. Appendix F identifies several new and/or expanded inventories and monitoring actions for each refuge.

Adaptive Management

Adaptive management involves sequential decision making, integrating project design, management, and monitoring to systematically test assumptions. Based on the data and lessons learned, subsequent phases of an ongoing restoration project or a new restoration project with similar objectives can be revised as necessary to maximize project objectives over time. Adequate baseline data, clearly defined and measurable project objectives, a monitoring plan focused on measurable results, and a process for refining and improving current and future management actions are all essential components of a successful adaptive management approach to restoration. Each of these components would be addressed during step-down planning, and the details of the adaptive management approach would be integrated into final restoration plans.

Step-Down Plans

Some projects such as public use programs and habitat restoration proposals require more in-depth planning than the CCP process is designed to provide. For these projects, the Service prepares step-down plans. Step-down plans provide additional planning and design details necessary to implement the strategies (projects or programs) identified in the CCP. Several step-down plans are proposed for completion following the approval of the CCP. Table 1 lists the step-down plans proposed for each refuge along with the target date for completion.

Compliance Requirements of Plan Implementation

All projects and step-down plans described in the CCP will be required to comply with NEPA and the Improvement Act, as well as a variety of other Federal regulations, executive orders, and legislative acts, which are described in greater detail in CCP/EIS Appendix E. The EIS is intended to address all proposed actions at the program level; however, some actions once defined in greater detail may require additional analysis and review under NEPA.

Anticipated Costs and Staffing Needs to Fully Implement the CCP

The estimated costs for the various projects described for the preferred alternatives for each refuge are presented in Table 2. These costs are rough estimates and will be refined as more details are available. To fully implement the proposed actions and achieve the goals and objectives of the CCP for the five refuges, additional staff will be necessary. Table 3 presents the current and future (proposed) staff needs for management of the each refuge.

Potential Funding Sources for Implementing CCP Projects

Many projects included in the CCP may be implemented in full or in part by sources other than the Refuge's annual budget. These projects may be funded through partnerships with other local, state, or federal agencies, special legislative appropriations, or grants (i.e., National Fish and Wildlife Foundation, Transportation Enhancement Funds). Other potential sources of funding for restoration projects include: the North American Wetlands Conservation Act Grants Program; and the Cooperative Endangered Species Conservation Fund.

Partnership Opportunities

Many programs on the refuges, both existing and planned, are made possible through a variety of public/private, interagency, and tribal partnerships.

Table 1. Step-down Plans Proposed for the Klamath Basin Refuge Complex.

<i>Plan</i>	<i>Target for Completion</i>
Lower Klamath Refuge	
Berm Management Program (Objective 1.8).	Within 15 years
Habitat Management Plan for all refuge habitat types (Objectives 1.2, 1.12).	Within 10 years
Inventory and Monitoring Program (Objectives 1.2, 1.12).	Within 15 years
Hunt Plan (Objective 3.4).	Within 15 years
Museum Property Inventory Plan (Objective 4.2).	Within 15 years
Clear Lake Refuge	
Rapid Assessment and Control Program (Objectives 1.1, 2.1).	Within 15 years
Inventory and Monitoring Plan (for priority species) (Objectives 1.1, 2.1).	Within 15 years
Habitat Management Plan (for all refuge habitat type) (Objective 2.1).	Within 15 years
Inventory and Monitoring Program (Objective 1.2).	Within 15 years
Museum Property Inventory Plan (Objective 4.2).	Within 15 years
Tule Lake Refuge	
Habitat Management Plan (for all refuge habitat types) (Objective 1.2, 1.11).	Within 10 years
Inventory and Monitoring Program (Objective 1.2).	Within 15 years
Berm Management Program (Objective 1.6).	Within 15 years
Sumps 1A and 1B Plan (to manipulate water elevations in to improve wetland diversity and productivity) (Objective 1.7).	Within 15 years
Hunt Plan (Objective 3.4).	Within 15 years
Museum Property Inventory Plan (Objective 4.2).	Within 15 years
Upper Klamath Refuge	
Berm Management Program (Objective 1.1).	Within 15 years
Barnes-Agency Unit Riparian and Wetland Habitat Restoration Plan (Objective 1.2).	Within 10 years
Habitat Management Plan (for all refuge habitat types) (Objective 1.2).	Within 10 years
Museum Property Inventory Plan (Objective 3.2).	Within 15 years
Bear Valley Refuge	
Wildlife Inventory and Monitoring Plan (Objectives 1.1, 2.1).	Within 15 years
Bear Valley Creek Riparian Habitat Restoration Plan (Objective 3.1).	Within 5 years
Hunt Plan (Objective 4.3).	Within 15 years
Museum Property Inventory Plan (Objective 5.2).	Within 15 years

Table 2. Projects to Implement the CCP

<i>Expenditure/Strategy (related CCP Objective)</i>	<i>Priority (1, 2, or 3)¹</i>
Lower Klamath Refuge	
If KBRA or some comparable agreement is not implemented, pursue changes in the type, place of use, and period of use for Lower Klamath and Tule Lake water rights necessary to ensure sufficient water is available for refuge wetlands (Objective 1.1).	1
Explore methods where refuge wetlands can contribute to water quality improvements in the Upper Klamath Basin (Objective 1.1).	2
Base habitat objectives on providing sufficient habitat to support the 75th percentile of 1970s duck and 1990s goose populations (Appendix M) (Objective 1.2).	1
Develop a habitat management plan and monitoring programs for managed habitat (e.g., wetlands) (Objective 1.2).	2
Maintain wetland production throughout the year – use habitat bioenergetics model to efficiently use water to produce highest quality matrix of wetland and upland habitat for migratory birds (Objective 1.2).	1
Periodically monitor foraging values to ensure assumptions about food availability remain accurate (Objective 1.2).	2
Monitor changes in the environment, such as vegetation communities, wildlife trends, and surface and groundwater levels, to assess the effects of climate change on the Refuge (Objective 1.2).	3
Update the Inventory and Monitoring Plan (Objective 1.2).	2
Leverage more wetland habitat on private lands in the basin by expanding the use of preferential permits for cooperatively farmed grain and hay units for farmers that participate in the Walking Wetlands program on their private lands (Objective 1.3).	2
Periodically evaluate the leasing program to ensure that sufficient agricultural foods are available to support spring and fall population objectives for geese and dabbling ducks (Objective 1.3).	1
Require annual SUPs for Reclamation with stipulations and prescribed habitat mix based on the energetics modeling (Objective 1.3).	1
Require annual SUPs for commercial contractors (i.e., fertilizer, pesticide applications) (Objective 1.3).	2
Require stipulations and all other specific requirements from the SUPs be included as part of lease contracts (Objective 1.3).	3
Expand area of lease land and cooperatively farmed units that are managed organically (Objective 1.3).	1
Expand incentives such as lease extensions for farmers that manage fields organically (Objective 1.3).	2
Use flood fallow agricultural practice on fields with expiring contracts if needed to achieve habitat objectives (Objective 1.3).	1
Formalize ongoing pest management activities under an IPM program (Objective 1.7).	2
Develop program for managing berms to reduce invasive species cover and improve cover for nesting waterfowl and other species (Objective 1.7).	3
Use GPS to monitor weed populations (Objective 1.7).	3
Expand use of non-pesticide tools to control invasive species (e.g., grazing, restoration plantings) (Objective 1.7).	2
Prevent the introduction of aquatic invasive species by pursuing partnerships with the states of California and Oregon to develop and operate a portable decontamination station(s) near boat launches on the Refuge (Objective 1.7).	2
To support dabbling duck and geese population objectives during winter and spring, convert an additional 1,300 acres of unharvested grain to irrigated pasture/green browse (subject to water availability) (Objective 1.8).	1

¹ A variety of funding sources may be used to pay for project costs, including appropriated funds (annual refuge budget).

Lower Klamath Refuge (continued)	
Periodically monitor foraging values to ensure assumptions about food availability remain accurate (Objective 1.8).	2
Formalize ongoing pest management activities under an IPM program (Objective 1.8).	2
Develop program for managing berms to reduce invasive species cover and improve cover for nesting waterfowl and other species (Objective 1.8).	3
Use GPS to monitor weed populations (Objective 1.8).	3
Periodically monitor foraging values to ensure assumptions about food availability remain accurate (Objective 1.9).	2
To support dabbling duck and geese population objectives during winter and spring, increase unharvested grain by approximately 500 acres (Objective 1.9).	1
Structure lease land contracts so that if habitat objectives for unharvested standing grain cannot be met on cooperatively farmed units, lease land contract holders would be required to leave 25% of their fields as unharvested standing grain (Objective 1.9).	1
Formalize ongoing pest management activities under an IPM program (Objective 1.9).	2
Develop program for managing berms to reduce invasive species cover and improve cover for nesting waterfowl and other species (Objective 1.9).	3
Use GPS to monitor weed populations (Objective 1.9).	3
Expand use of non-pesticide tools to control invasive species (e.g., grazing, restoration plantings) (Objective 1.9).	2
Formalize ongoing pest management activities under an IPM program (Objective 1.10).	2
Use GPS to monitor weed populations (Objective 1.10).	3
Expand use of non-pesticide tools to control invasive species (e.g. grazing, restoration plantings) (Objective 1.10).	2
Formalize ongoing pest management activities under an IPM program (Objective 1.11).	2
Develop program for managing berms to reduce invasive species cover and improve cover for nesting waterfowl and other species (Objective 1.11).	3
Use GPS to monitor weed populations (Objective 1.11).	3
Expand use of non-pesticide tools to control invasive species (e.g., grazing, restoration plantings) (Objective 1.11).	2
Develop a habitat management plan that includes SMART objectives, monitoring programs that track achievement of habitat objectives, and thresholds for taking management actions (Objective 1.12).	2
Develop a Walking Wetlands Curriculum (Objective 3.1).	2
Continue to offer teacher training workshops for each of the curricula (Objective 3.1).	2
Create partnerships with schools to develop schoolyard habitat programs (Objective 3.1).	2
Develop an outreach event on waterfowl identification for youth hunters (Objective 3.1).	2
Provide additional interpretive programs (Objective 3.2).	1
Construct a visitor contact station at entrance of Refuge (Objective 3.2).	3
Update general brochures (Objective 3.2).	2
Develop another vehicle pull-off on State Line Road (Objective 3.3).	2
Re-letter auto-tour route on Lower Klamath Refuge (Objective 3.3).	3
Provide drive-in, boat-in wheelchair accessible hunting opportunities (Objective 3.4).	1
Prepare a hunt plan which comprehensively evaluates Lower Klamath Refuge hunt program, including: guide program (i.e., maintain, modify, or eliminate guide program); layout of hunt area and auto tour route (i.e., maintain or separate in time or space); and hunt fees (i.e., maintain or increase fee) (Objective 3.4).	2
To reduce the likelihood that boats would contribute to invasive species problems on the Refuge, the Service would pursue partnerships with the states of California and Oregon to develop and operate a portable decontamination station(s) near boat launches on the Refuge and/or pursue other measures to address this concern (Objective 3.4).	2

Lower Klamath Refuge (continued)

Phase in a new requirement allowing only 4-stroke (4-cycle) boat motors to be used on the Lower Klamath Refuge (Objective 3.4).	2
Implement a program to evaluate eligibility to the National Register of Historic Places those archaeological sites that may be impacted by Service undertakings, management activities, erosion, or neglect (Objective 4.1).	2
Develop a GIS layer for cultural resources that can be used with other GIS layers for the Refuge, yet contains appropriate locks to protect sensitive information (Objective 4.1).	2
Develop partnerships with the Tribes for cultural resources inventory, evaluation, and project monitoring, consistent with the regulations of the National Historic Preservation Act (Objective 4.1).	2
Perform an inventory and assessment of archaeological and historic sites to determine NRHP eligibility. As part of this inventory, identify specific stabilization and restoration costs. This should include prioritization of the most critical needs for each site and structure (Objective 4.1).	2
Develop partnerships (e.g., University of Oregon, National Park Service, etc.) to assist in the stabilization and restoration of archaeological and historic sites and structures (Objective 4.1).	2
Prepare interpretive media (e.g., pamphlets, signs, exhibits) that relate the cultural resources (Objective 4.2).	2
Prepare environmental/cultural education materials for use in local schools and museums concerning cultural resources, the discipline of archaeology, the perspective of Native Americans, the history of the area, and conservation of natural and cultural resources. These materials could include an artifact replica kit with hands-on activities and curriculum prepared in consultation with the local school district, historical societies, and the Tribes (Objective 4.2).	2
Consult with the Tribes, historical societies, and other preservation partners to identify the type of cultural resources information appropriate for public interpretation (Objective 4.2).	2
Develop an outreach program and materials so that the cultural resource messages become part of cultural events in the area, including National Wildlife Refuge Week and appropriate local festivals (Objective 4.2).	2
Develop Museum Property Inventory. Create storage and use plans for museum property as part of the outreach program (Objective 4.2).	3
Identify Native American Tribes, Groups, and direct lineal descendants that may be affiliated with the Refuge lands (Objective 4.3).	3
Open consultation process with affiliated Tribes, Groups, and direct lineal descendants (Objective 4.3).	1
Define funerary objects, sacred objects and objects of cultural patrimony (Objective 4.3).	2
Develop procedures to follow for intentional and inadvertent discoveries (Objective 4.3).	2
Identify persons to contact for the purposes of NAGPRA (Objective 4.3).	1
Clear Lake Refuge	
Develop a habitat management plan and monitoring programs for each refuge habitat type (Objective 1.1, 1.2, 2.1).	2
Work with Intermountain Research and Extension Station to develop control strategies targeted toward exotic annual grasses while protecting native grasses, shrubs, and forbs (Objective 1.1, 1.2).	1
Develop a rapid assessment and control program for new invasive species (Objectives 1.1, 2.1).	2
Develop inventory and monitoring plan focused on priority species including sage-grouse and colonial nesting waterbirds on island (Objectives 1.1, 2.1).	1
Work with local high schools to develop a monitoring program of sage-grouse (Objective 3.1).	3
Provide interpretive signs and a viewing platform on the boundary of the Refuge (Objective 3.2).	2
Increase interpretive information at Refuge Complex Visitor Center (Objective 3.2).	2
Develop interpretive pamphlet to educate visitors on how they can prevent the spread of invasive species (Objective 3.2).	3
Develop a Clear Lake Refuge exhibit in the Refuge Complex Visitor Center (Objective 3.2).	3

Clear Lake Refuge (continued)	
Revise antelope hunt to require non-toxic ammunition (Objective 3.3).	1
Implement a program to evaluate eligibility to the National Register of Historic Places those archaeological sites that may be impacted by Service undertakings, management activities, erosion, or neglect. (Objective 4.1).	2
Develop a GIS layer for cultural resources that can be used with other GIS layers for the Refuge, yet contains appropriate locks to protect sensitive information (Objective 4.1).	2
Develop partnerships with the Tribes for cultural resources inventory, evaluation, and project monitoring, consistent with the regulations of the National Historic Preservation Act (Objective 4.1).	2
Perform an inventory and assessment of archaeological and historic sites to determine NRHP eligibility. As part of this inventory, identify specific stabilization and restoration costs. This should include prioritization of the most critical needs for each site and structure (Objective 4.1).	2
Develop partnerships (e.g., University of Oregon, National Park Service, etc.) to assist in the stabilization and restoration of archaeological and historic sites and structures (Objective 4.1).	3
Prepare interpretive media (e.g., pamphlets, signs, exhibits) that relate the cultural resources (Objective 4.2).	2
Prepare environmental/cultural education materials for use in local schools and museums concerning cultural resources, the discipline of archaeology, the perspective of Native Americans, the history of the area, and conservation of natural and cultural resources. These materials could include an artifact replica kit with hands-on activities and curriculum prepared in consultation with the local school district, historical societies, and the Tribes (Objective 4.2).	3
Consult with the Tribes, historical societies, and other preservation partners to identify the type of cultural resources information appropriate for public interpretation (Objective 4.2).	2
Develop an outreach program and materials so that the cultural resource messages become part of cultural events in the area, including National Wildlife Refuge Week and appropriate local festivals (Objective 4.2).	2
Develop Museum Property Inventory. Create storage and use plans for museum property as part of the outreach program (Objective 4.2).	3
Identify Native American Tribes, Groups, and direct lineal descendants that may be affiliated with the Refuge lands (Objective 4.3).	3
Open consultation process with affiliated Tribes, Groups, and direct lineal descendants (Objective 4.3).	2
Define funerary objects, sacred objects and objects of cultural patrimony (Objective 4.3).	3
Develop procedures to follow for intentional and inadvertent discoveries (Objective 4.3).	3
Identify persons to contact for the purposes of NAGPRA (Objective 4.3).	3
Tule Lake Refuge	
Explore feasibility of utilizing ground water at south end of Tule Lake Refuge (Objective 1.1).	2
Base habitat objectives on providing sufficient habitat to support the 75th percentile of 1970s duck and 1990s goose populations (Appendix M) (Objective 1.2).	1
Develop a habitat management plan that includes SMART objectives for each refuge habitat, monitoring programs that track achievement of both population and habitat objectives, and thresholds for taking management actions (Objective 1.2).	2
Maintain wetland production throughout the year – use habitat bioenergetics model to efficiently use water to produce highest quality matrix of wetland and upland habitat for migratory birds (Objective 1.2).	1
Periodically monitor foraging values to ensure assumptions about food availability remain accurate (Objective 1.2).	2
Monitor changes in the environment, such as vegetation communities, wildlife trends, and surface and groundwater levels, to assess the effects of climate change on the Refuge (Objective 1.2).	2
Update the Inventory and Monitoring Plan (Objective 1.2).	2

Tule Lake Refuge (continued)

Leverage more wetland habitat on private lands in the basin by expanding the use of preferential permits for cooperatively farmed grain and hay units for farmers that participate in the Walking Wetlands program on their private lands (Objective 1.3).	2
Periodically evaluate the leasing program to ensure that sufficient agricultural foods are available to support spring and fall population objectives for geese and dabbling ducks (Objective 1.3).	1
Require annual SUPs for Reclamation with stipulations and prescribed habitat mix based on the energetics modeling (Objective 1.3).	1
Require annual SUPs for commercial contractors (i.e., fertilizer, pesticide applications) (Objective 1.3).	1
Require stipulations and all other specific requirements from the SUPs be included as part of lease contracts (Objective 1.3).	2
Expand area of lease land and cooperatively farmed units that are managed organically (Objective 1.3).	1
Expand incentives such as lease extensions for farmers that manage fields organically (Objective 1.3).	1
Increase attractiveness of agricultural lands to waterfowl with fall flooding (Objective 1.3).	1
Formalize ongoing pest management activities under an IPM program (Objective 1.6).	2
Develop program for managing berms to reduce invasive species cover and improve cover for nesting waterfowl and other species (Objective 1.6).	2
Use GPS to monitor weed populations (Objective 1.6).	2
Expand use of non-pesticide tools to control invasive species (e.g., grazing, restoration plantings) (Objective 1.6).	2
Prevent the introduction of aquatic invasive species by pursuing partnerships with the states of California and Oregon to develop and operate a portable decontamination station(s) near boat launches on the Refuge (Objective 1.6).	2
Expand use of non-pesticide tools to control invasive species (e.g., grazing, restoration plantings) (Objective 1.7).	2
Prevent the introduction of aquatic invasive species by pursuing partnerships with the states of California and Oregon to develop and operate a portable decontamination station(s) near boat launches on the Refuge (Objective 1.7).	2
Develop and implement plan to manipulate water elevations in Sumps 1A and 1B to improve wetland diversity and productivity (Objective 1.7).	1
Increase unharvested standing grain to approximately 1,500 acres to support dabbling duck and geese population objectives during winter and spring (Objective 1.8).	1
Periodically monitor foraging values to ensure assumptions about food availability remain accurate (Objective 1.8).	2
To disperse waterfowl use and lessen the potential for avian diseases, 1/2 of the grain leave should occur on cooperative farm lands (750 acres) and the other half on the leased lands (750 acres) (Objective 1.8).	1
All farm lands must be managed such that all agricultural fields are within one mile of wetland habitat (Objective 1.8).	2
Increase attractiveness of agricultural lands to waterfowl with fall flooding, and improve the interspersion of wetlands within lease lands farm fields (Objective 1.8).	1
Expand area of lease land and cooperatively farmed units that are managed organically (Objective 1.8).	1
Expand area of lease land and cooperatively farmed units that are managed organically (Objective 1.8).	1
Construct dikes around lease land lots in Sump 2 where walking wetlands management is feasible (Objective 1.9).	1
The Service will strive to ensure that walking wetlands are located such that agricultural fields are no more than one mile from wetland habitat (Objective 1.9).	2
Increase acreage (average of 3,000 acres) and interspersion of walking wetlands within lease land agriculture (Objective 1.9).	1
Expand use of non-pesticide tools to control invasive species (e.g., grazing, restoration plantings) (Objective 1.10).	2

Tule Lake Refuge (continued)

Develop a habitat management plan that includes SMART objectives, monitoring programs that track achievement of habitat objectives, and thresholds for taking management actions (Objective 1.11).	2
Develop a high school Walking Wetlands curriculum (Objective 3.1).	2
Continue to offer teacher training workshops for each of the curricula (Objective 3.1).	1
Construct a floating boardwalk next to education center on the permanent pond at Discovery Marsh (Objective 3.1).	2
Create partnerships with schools to develop schoolyard habitat programs (Objective 3.1).	1
Improve the education center by developing a permanent source of heat and electricity (Objective 3.1).	2
Develop an outreach event on waterfowl identification for youth hunters (Objective 3.1).	1
Develop a friends group (Objective 3.1).	2
Provide additional interpretation about Walking Wetlands programs to the public (Objective 3.2).	2
Provide hands-on exhibits in visitor center (Objective 3.2).	1
Update visitor center entrance to be more visitor friendly (Objective 3.2).	1
Update Refuge Complex Visitor Center to be ADA compliant (Objective 3.2).	1
Update general brochures (Objective 3.2).	2
Develop a guided canoe interpretive program (Objective 3.2).	2
Construct up to 4 pull-off areas on the existing auto tour route (Objective 3.3).	2
Modify auto tour route to maximize wildlife viewing opportunities (Objective 3.3).	1
Expand the Discovery Trail (Objective 3.3).	2
Improve/redesign the Sheepy Ridge Trail to decrease the slope, improve drainage, and reduce erosion (Objective 3.3).	2
Provide drive-in, boat-in wheelchair accessible hunting opportunities (Objective 3.4).	1
Prepare a hunt plan which comprehensively evaluates Tule Lake Refuge hunt program, including: guide program (i.e. maintain, modify, or eliminate guide program); layout of hunt area and auto tour route (i.e. maintain or separate in time or space); and hunt fees (i.e., maintain or increase fee) (Objective 3.4).	2
To reduce the likelihood that boats would contribute to invasive species problems on the Refuge, the Service would pursue partnerships with the states of California and Oregon to develop and operate a portable decontamination station(s) near boat launches on the Refuge and/or pursue other measures to address this concern (Objective 3.4).	2
Phase in a new requirement allowing only 4-stroke (4-cycle) boat motors to be used on the Refuge (Objective 3.4).	2
Implement a program to evaluate eligibility to the National Register of Historic Places those archaeological sites that may be impacted by Service undertakings, management activities, erosion, or neglect (Objective 4.1).	2
Develop a GIS layer for cultural resources that can be used with other GIS layers for Tule Lake Refuge (Objective 4.1).	2
Develop partnerships with the Tribes for cultural resources inventory, evaluation, and project monitoring, consistent with the regulations of the National Historic Preservation Act (Objective 4.1).	2
Perform an inventory and assessment of archaeological and historic sites to determine NRHP eligibility. As part of this inventory, identify specific stabilization and restoration costs. This should include prioritization of the most critical needs for each site and structure (Objective 4.1).	2
Develop partnerships (e.g., University of Oregon, National Park Service, etc.) to assist in the stabilization and restoration of archaeological and historic sites and structures (Objective 4.1).	2
Prepare interpretive media (e.g., pamphlets, signs, exhibits) that relate the cultural resources specific to Tule Lake Refuge (Objective 4.2).	2

Tule Lake Refuge (continued)

Prepare environmental/cultural education materials for use in local schools and museums concerning cultural resources, the discipline of archaeology, the perspective of Native Americans, the history of the area, and conservation of natural and cultural resources. These materials could include an artifact replica kit with hands-on activities and curriculum prepared in consultation with the local school district, historical societies, and the Tribes (Objective 4.2).	2
Consult with the Tribes, historical societies, and other preservation partners to identify the type of cultural resources information appropriate for public interpretation (Objective 4.2).	2
Develop an outreach program and materials for the cultural resource messages specific to Tule Lake Refuge (Objective 4.2).	2
Develop Museum Property Inventory and create storage specific to Tule Lake Refuge (Objective 4.2).	3
Identify Native American Tribes, Groups, and direct lineal descendants that may be affiliated with the Refuge lands (Objective 4.3).	3
Open consultation process with affiliated Tribes, Groups, and direct lineal descendants (Objective 4.3).	1
Define funerary objects, sacred objects and objects of cultural patrimony (Objective 4.3).	2
Develop procedures to follow for intentional and inadvertent discoveries (Objective 4.3).	2
Identify persons to contact for the purposes of NAGPRA (Objective 4.3).	1

Upper Klamath Refuge

Expand use of non-pesticide tools to control invasive species (e.g., grazing, restoration plantings) (Objective 1.1).	2
Prevent the introduction of aquatic invasive species by pursuing partnerships with the states of California and Oregon to develop and operate a portable decontamination station(s) near boat launches on the Refuge (Objective 1.1).	1
Collaborate with adjoining landowners and other organizations to enhance and restore fringe wetland habitats on Upper Klamath Lake adjacent to Upper Klamath Refuge (Objective 1.1).	1
Support implementation of recovery actions in the Revised Lost River Sucker and Shortnose Sucker Recovery Plan (USFWS 2012) (Objective 1.1).	1
Develop and implement a plan and associated NEPA compliance for restoring riparian and wetland habitat on Barnes-Agency Unit (Objective 1.2).	1
Work with willing adjacent landowners to negotiate an easement that allows for flood inundation on adjacent private properties (Objective 1.2).	1
Collaborate with BLM to integrate subsidence reversal (Objective 1.2).	2
Using grazing opportunities on Barnes-Agency Unit to provide incentive for private landowners to develop wetlands on their property (Objective 1.3).	2
Collaborate with U.S. Forest Service to provide educational programs on-site and around the Refuge year-round (Objective 2.1).	2
Provide outreach at special events which could include but not limited to: Winter Wings Festival, International Migratory Bird Day, 6th grade Forestry Tour, Youth Hunt BBQ, and various sportsmen shows (Objective 2.1).	2
Collaborate with U.S. Forest Service & BLM to provide interpretation about the Refuge, specifically the Barnes-Agency Unit, which borders the Wood River Wetlands (Objective 2.2).	2
Provide a seasonal contact station to provide maps, brochures, and other information (Objective 2.2).	1
Develop a more permanent solution to having a seasonal point of contact during peak visitation (Objective 2.2).	1
Install interpretive signs along the canoe trail (Objective 2.2).	2
Install an interpretive kiosk on West Side Road at a pull-off (Objective 2.2).	1
Create a pull-off on West Side Road for views of the Refuge (Objective 2.3).	2
Consider opening tracks on the Barnes-Agency Unit to hunting until long-term restoration of these areas is implemented (Objective 2.4).	1

Upper Klamath Refuge (continued)

To reduce the likelihood that boats would contribute to invasive species problems on the Refuge, the Service would pursue a partnership with the U.S. Forest Service and the State of Oregon to develop and operate a portable decontamination station near boat launches (Objective 2.5).	1
Implement a program to evaluate eligibility to the National Register of Historic Places those archaeological sites that may be impacted by Service undertakings, management activities, erosion, or neglect (Objective 3.1).	2
Develop a GIS layer for cultural resources that can be used with other GIS layers for Upper Klamath Refuge, yet contains appropriate locks to protect sensitive information (Objective 3.1).	2
Develop partnerships with the Tribes for cultural resources inventory, evaluation, and project monitoring, consistent with the regulations of the National Historic Preservation Act (Objective 3.1).	2
Perform an inventory and assessment of archaeological and historic sites to determine NRHP eligibility. As part of this inventory, identify specific stabilization and restoration costs. This should include prioritization of the most critical needs for each site and structure (Objective 3.1).	2
Develop partnerships (e.g., University of Oregon, National Park Service, etc.) to assist in the stabilization and restoration of archaeological and historic sites and structures (Objective 3.1).	2
Prepare interpretive media (e.g., pamphlets, signs, exhibits) that relate the cultural resources specific to Upper Klamath Refuge (Objective 3.2).	2
Prepare environmental/cultural education materials for use in local schools and museums concerning cultural resources specific to Upper Klamath Refuge (Objective 3.2).	2
Consult with the Tribes, historical societies, and other preservation partners to identify the type of cultural resources information appropriate for public interpretation (Objective 3.2).	2
Develop an outreach program and materials for the cultural resource messages specific to Upper Klamath Refuge (Objective 3.2).	2
Develop Museum Property Inventory and create storage specific to Upper Klamath Refuge (Objective 3.2).	3
Identify Native American Tribes, Groups, and direct lineal descendants that may be affiliated with the Refuge lands (Objective 3.3).	2
Open consultation process with affiliated Tribes, Groups, and direct lineal descendants (Objective 3.3).	2
Define funerary objects, sacred objects and objects of cultural patrimony (Objective 3.3).	3
Develop procedures to follow for intentional and inadvertent discoveries (Objective 3.3).	2
Identify persons to contact for the purposes of NAGPRA (Objective 3.3).	3

Bear Valley Refuge

Evaluate potential to manage forests for a wider array of wildlife species while continuing to promote old growth and mature forest characteristics (Objectives 1.1).	1
Evaluate need for future silvicultural thinning to achieve desired habitat characteristics (Objectives 1.1).	1
Formalize pest management practices under an IPM program (Objectives 1.1).	2
Develop wildlife inventory and monitoring plan including all priority wildlife species supported by Bear Valley Refuge (Objectives 1.1, 2.1).	2
Evaluate potential to manage forests for a wider array of wildlife species while continuing to promote old growth and mature forest characteristics (Objectives 2.1).	1
Evaluate need for future silvicultural thinning to achieve desired habitat characteristics (Objectives 2.1).	1
Formalize pest management practices under an IPM program (Objectives 2.1).	2
Coordinate with partners that are leading efforts to assess the effects of climate change on the rate of snag creation and deterioration, and development of snag retention guidelines to benefit tree cavity-dependent wildlife (Objectives 2.1).	3
Develop and implement a plan to restore and maintain riparian habitats along Bear Valley Creek (Objective 3.1).	1

Bear Valley Refuge (continued)

Develop and provide educational field trips on-site that highlight refuge forest management practices (Objective 4.1).	2
Explore new opportunities for wildlife observation and photography (e.g., viewing area at the south entrance for bald eagle viewing) (Objective 4.2).	1
Explore opportunities to develop and present interpretive programs and associated facilities on-site (Objective 4.2).	1
Install additional directional and boundary signs (Objective 4.2).	1
Monitor visitor use of Refuge lands and adaptively manage as appropriate to ensure use remains compatible (Objective 4.2).	1
Establish parking for designated hunting access points on the north and south of Bear Valley Refuge (Objective 4.3).	2
Revise deer hunt to require non-toxic ammunition (Objective 4.3).	1
Prepare new hunt plan which evaluates additional hunting opportunities for Bear Valley Refuge (Objective 4.3).	2
Implement a program to evaluate eligibility to the National Register of Historic Places those archaeological sites that may be impacted by Service undertakings, management activities, erosion, or neglect (Objective 5.1).	2
Develop a GIS layer for cultural resources at Bear Valley Refuge (Objective 5.1).	2
Develop partnerships with the Tribes for cultural resources inventory, evaluation, and project monitoring, consistent with the regulations of the National Historic Preservation Act (Objective 5.1).	2
Perform an inventory and assessment of archaeological and historic sites to determine NRHP eligibility. As part of this inventory, identify specific stabilization and restoration costs. This should include prioritization of the most critical needs for each site and structure (Objective 5.1).	2
Develop partnerships (e.g., University of Oregon, National Park Service, etc.) to assist in the stabilization and restoration of archaeological and historic sites and structures (Objective 5.1).	2
Prepare interpretive media (e.g., pamphlets, signs, exhibits) that relate the cultural resources specific to Bear Valley Refuge (Objective 5.2).	2
Prepare environmental/cultural education materials for use in local schools and museums concerning cultural resources specific to Bear Valley Refuge (Objective 5.2).	2
Consult with the Tribes, historical societies, and other preservation partners to identify the type of cultural resources information appropriate for public interpretation (Objective 5.2).	2
Develop an outreach program and materials for the cultural resource messages specific to Upper Klamath Refuge (Objective 5.2).	2
Develop Museum Property Inventory and create storage specific to Bear Valley Refuge (Objective 5.2).	3
Identify Native American Tribes, Groups, and direct lineal descendants that may be affiliated with the Refuge lands (Objective 5.3).	3
Open consultation process with affiliated Tribes, Groups, and direct lineal descendants (Objective 5.3).	2
Define funerary objects, sacred objects and objects of cultural patrimony (Objective 5.3).	3
Develop procedures to follow for intentional and inadvertent discoveries (Objective 5.3).	2
Identify persons to contact for the purposes of NAGPRA (Objective 5.3).	2

Table 3. Estimated Annual Salary and Non-Salary Operation and Maintenance Costs to Fully Implement CCP^{1,2}

<i>Position (grade)</i>	<i>Quantity</i>	<i>Unit</i>	<i>Total Cost³</i>
Klamath Basin Refuge Complex			
Project Leader (GS-14)	1	FTE	
Park Ranger (LE) (GL-09)	1	FTE	
<i>Park Ranger (LE) (GL-09)⁴</i>	<i>1</i>	<i>FTE</i>	
<i>Park Ranger (LE) (GL-09)⁴</i>	<i>1</i>	<i>FTE</i>	
Wildlife Biologist Partners Program (GS-12)	1	FTE	
Fish & Wildlife Biologist Partners Program (GS-05/07/09)	1	FTE	
Fish & Wildlife Biologist Partners Program (GS-07/09/11)	1	FTE	
Deputy Project Leader (GS-13)	1	FTE	
Wildlife Refuge Specialist (GS-07/09)	1	FTE	
Supervisory Fire Management Specialist (GS-13)	1	FTE	
Supervisory Fire Engine Capt. (GS-08)	1	FTE	
Supervisory Fire Engine Capt. (GS-07)	1	FTE	
Fire Engine Operator (GS-06)	1	FTE	
Seasonal Firefighter (GS-04)	4 ⁵	Seasonal	
Wildlife Biologist (GS-12/13)	1	FTE	
Integrated Pest Management Specialist (GS-12)	1	FTE	
Wildlife Biologist (GS-11)	1	FTE	
Bio Science Tech Irrigator (GS-08)	1	FTE	
Administrative Officer (GS-09/11)	1	FTE	
Budget Technician (GS-07)	1	FTE	
Administrative/Office Assistant (GS-05)	1	FTE	
Engineering Equipment Optr-Work Supervisor (WS-10)	1	FTE	
Heavy Mobile Equipment Mechanic (WG-10)	1	FTE	
Engineering Equipment Optr-Work Leader (WL-10)	1	FTE	
Engineering Equipment Operator (WG-10)	1	FTE	
Engineering Equipment Operator (WG-10)	1	FTE	
Engineering Equipment Operator (WG-10)	1	FTE	
Maintenance Worker (WG-08)	1	FTE	
Engineering Equipment Operator (WG-10)	1	FTE	
Engineering Equipment Operator (WG-10)	1	FTE	
Engineering Equipment Operator (WG-10)	1	FTE	
Park Ranger (GS-09)	1	FTE	
Park Ranger (Visitor Services Manager) (GS-11)	1	FTE	

¹ Full-Time Equivalent (FTEs) positions are shared with Klamath Marsh Refuge, which is not included in this CCP. A separate CCP planning process was completed for the Klamath Marsh Refuge in 2010.

² Costs may be funded through both appropriated (annual refuge budget) and non-appropriated sources.

³ Salary costs are based on OPM's FY2016 General Schedule salary table for "Rest of U.S." (at step 5 of highest grade) and includes 25% for benefits and 10% for overhead (awards, travel, equipment, etc.), and Federal Wage System Rate Schedules (at step 3 of 5 steps) for WG, WS, and WL.

⁴ *Italicized font, indented* = a proposed (new) position.

⁵ Seasonal positions are not included in FTE totals.

Park Ranger (Pathways) (GS-07)	1	FTE	
Maintenance Worker (WG-08)	1	FTE	
Wildlife Refuge Manager (GS-12)	1	FTE	
Engineering Equipment Operator (WG-09)	1	FTE	
<i>Interdisciplinary (Pathways) (GS-03/04/05)⁴</i>	<i>1</i>	<i>FTE</i>	
Total Current Positions (permanent and seasonal)	34	FTE	\$3,073,938
Total Current and Proposed Positions (all positions)	41	-	\$3,258,269
Estimated Non-Salary Operation and Maintenance Need			\$2,500,000