

Chapter 3. Planning Issues and Opportunities

3.1 Introduction

The Klamath Basin has a rich natural resource history. From its headwaters, which drain into Upper Klamath Lake in Oregon, the Klamath River flows 253 miles draining a basin of more than 15,000 square miles before it meets the Pacific Ocean on the California coast. The basin is largely inhabited by rural communities, including several Native American tribes which have a significant presence. As noted in Chapter 1, the Klamath Basin is a critical part of the Pacific Flyway, which supplies habitat for migrating birds from the Arctic to South America. The basin also serves as an important fishery for several endemic and endangered fish species that have life histories in the Klamath River. Throughout history, agriculture, farming, and ranching have had been strong economic drivers in the upper basin, and commercial fishing in the lower basin.

In recent decades, scarce water resources and the resulting effects on other natural resources in the Klamath Basin has been a primary issue, leading to conflicts between tribes, conservationists, farmers, fishermen, and state and federal agencies. A few key related challenges that frame the context within which the draft comprehensive conservation plan/environmental impact statement (CCP/EIS) has been developed include the following.

- In 2001, water deliveries to irrigation contractors to the Klamath Reclamation Project were substantially curtailed.
- In 2002, returning adult salmon suffered a major die off.
- In 2006, the commercial salmon fishing season was closed along a 700-mile stretch of the west coast to protect weak Klamath River stocks.
- Since 2010, due to drought conditions, the Klamath Reclamation Project curtailed deliveries which resulted in short-term idling of farmland and increased groundwater pumping.
- Since 2010, the Klamath Basin refuges have struggled for water deliveries to provide key habitat for migratory waterfowl.
- The c'waam (Lost River suckers) fishery for the Klamath Tribes has been closed for 29 years, limiting the tribes to only a ceremonial harvest.

The first section of this chapter summarizes external planning issues and comments from the public, other agencies, and tribes. The next section of this chapter summarizes some of the internal planning issues as described by U.S. Fish and Wildlife Service (Service) employees regarding the history of water delivery, water management, habitat management, and political challenges. The Service has attempted to take all of these issues into consideration during the development of the CCP/EIS.

3.2 Summary of External Planning Issues

This section summarizes comments collected during scoping and consultation with the public, agencies, and tribes. These issues are also described in the public scoping report, available in Appendix J, and organized by refuge below. To the extent possible, issues have been addressed in the appropriate sections of the draft CCP/EIS, including as part of alternatives and/or analysis.

3.2.1 Klamath Basin National Wildlife Refuge Complex

■ General habitat

- Identify migratory patterns, abundance of fish, birds, wildlife, plants, and habitats.
- Maximize habitat for a full diversity of birds, not just waterfowl.
- Restore historic lakebeds, marshes, and wetlands.
- Describe upland management including fire and juniper removal.
- Discuss wilderness designation.
- Improve bird monitoring.
- Conduct landscape-scale analysis to maximize habitat diversity.
- Model habitats for shorebirds and non-game birds.

■ Water

- Water management
 - Manage for natural hydrologic regime.
 - Secure necessary additional water.
 - Explore options for winter water storage.
 - Defend refuges' water right claims in the Klamath Basin Adjudication.
 - Develop new wells.
 - Analyze the full range of alternatives on flows in the Klamath River including impacts to listed species and options to assist with recovery of the Endangered Species Act (ESA)-listed coho salmon.
 - Describe tribal trust resources and prioritize water for ESA-listed, state-listed, and restored native fishes.
- Water quality
 - Consider the total maximum daily load (TMDL).
 - Analyze increased removal efficiency of nutrient and organic matter from existing wetlands.
 - Improve timing of water releases to benefit water quality.
 - Develop comprehensive water quality management and monitoring plan.
 - Determine the ability to modify wetland structure or water flow to improve water quality.
 - Document the influence of irrigated agriculture.

■ Agriculture

- Discuss the pros and cons of continuing existing agriculture, and the compatibility of agriculture on refuges.
- Describe current and historic agricultural practices in the Klamath Basin.
- Interpret the Kuchel Act.
- Maintain agriculture and wildlife habitat on leased lands to provide food for the Pacific Flyway.
- Consider a voluntary buyout for agribusiness leases.
- Describe baseline agricultural data.
- Evaluate the Walking Wetlands Program.
- Evaluate chemical use.
- Evaluate commercial farming and the Lease Lands Program.

- Visitor services
 - Improve the Refuge Complex Visitor Center.
 - Reduce light pollution at the Refuge Complex Visitor Center.
 - Improve environmental education, and increase collaboration with other local education entities.
 - Improve photography opportunities.
 - Improve access and opportunities for wildlife observation.
 - Increase volunteerism.
 - Improve signage and maps.
 - Improve routine maintenance.
 - Discuss the pros and cons of the hunting program, especially the guiding system, drawing system, free roam, and separate hunting and birding area.
 - Improve hunting opportunities, especially pheasant hunting.
 - Reduce speed limits on refuge roads.
 - Improve and increase vehicle pull-outs along roads.
 - Improve wildlife viewing from roads.
 - Evaluate separation from auto tour route and hunting areas.
 - Increase law enforcement presence.
- Environmental threats and climate change
 - Assess the risk of invasive species to conservation targets and evaluate options for threat reduction.
 - Consider supporting the Oregon Aquatics Invasive Species Prevention Program.
 - Conduct early detection rapid response for invasive plants, and increase weed eradication and invasive plant control.
 - Evaluate how crops, water availability, and wildlife species would be impacted by climate change.
 - Describe anticipated climatic conditions.
 - Strive to promote ecosystem resiliency and evaluate how 10 to 15 years of refuge management should prepare for adaptation in the longer term.
- Klamath Basin Restoration Agreement (KBRA)
 - Describe the KBRA and what the Service needs to do to be prepared to fulfill the intent of the KBRA.
 - Develop alternatives that reflect positive and negative secretarial determinations on the KBRA.
 - Describe how water could be most efficiently managed.
- Miscellaneous
 - Consider placing existing overhead electrical lines underground.
 - Implement stronger predator management program.

3.2.2 Lower Klamath National Wildlife Refuge

- Habitat
 - Increase habitat for colonial and non-colonial birds, and shorebirds by enhancing substrate and manipulating water levels.
 - Describe long-term management of floating island.

- Discourage nesting gulls while encouraging Caspian terns or other colonial water birds.
- Evaluate flooding Lower Klamath Refuge as a single large lake to mimic historic conditions.
- Enhance and sustain sucker populations.
- Water
 - Determine how Lower Klamath Refuge can be used for water quality treatment and how water delivery and drainage could optimize wetland function.
 - Take available water from Tulelake Irrigation District beginning September 1 of each year to fill Lower Klamath Refuge.
 - Seek to remove water restrictions on the Orem Unit.
- Agriculture
 - Post notification of field flooding on the Oregon Straits Unit.
 - Increase cooperative farming and participation in the Walking Wetlands Program.
 - Increase habitat diversity.
- Visitor services
 - Use Lower Klamath Refuge to showcase wildlife viewing.
 - Connect the road from Intersection D to the southeastern and south parts of the refuge and make these roads open to the public.
 - Review the waterfowl hunt program.
 - Evaluate opportunities for improved hunting at Oregon Straits.
 - Increase law enforcement at Oregon Straits.
 - Implement full refuge draw on opening weekend.
 - Do not add new hunting blinds.
- Miscellaneous
 - Stop the quarry operation.

3.2.3 Clear Lake National Wildlife Refuge

- Habitat
 - Enhance and sustain sucker populations.
 - Continue cooperative sage-grouse restoration.
- Visitor services
 - Improve signs and directions on the road.

3.2.4 Tule Lake National Wildlife Refuge

- Habitat
 - Discuss how artificial island will be managed.
 - Enhance and sustain sucker populations.
 - Identify how the sumps can be managed to meet sometimes conflicting needs of various bird species guilds.
 - Increase and maintain higher numbers of waterfowl and other bird species.

- Water management
 - Integrate drought management to include sustainable groundwater component.
- Agriculture
 - Interpret the Kuchel Act.
 - Describe the pros and cons of chemical use, organic farming, a fertilizer management plan, crop rotation, underseeding, green manure, flooding, biocontrols, and the Walking Wetlands Program.
 - Describe the commercial farming and Lease Lands farming program with attention to the number of leases, timing and intensity of farming, water requirements, effects on wildlife, compatibility with wildlife, and curtailing during partial water deliveries.
 - Leave standing grain in all farmed units.
 - Describe grazing.
- Visitor services
 - Recommend full refuge draw for opening hunting weekend.

3.2.5 Upper Klamath National Wildlife Refuge

- Habitat
 - Use best management practices to influence Upper Klamath Lake water levels, sedimentation, eutrophication, and water quality.
- Visitor services
 - Maintain canoe trail signs.
 - Open canoe trails in hunt and non-hunt areas.
 - Prohibit the use of motorized boats.
 - Describe access to Barnes Ranch.
 - Describe plans for removing dikes in Barnes-Agency Unit in terms of wetlands production, coverage, and plant community composition.

3.2.6 Bear Valley National Wildlife Refuge

- Habitat
 - Describe forest health issues.
 - Discuss fuel loading and overstocked density.
- Visitor services
 - Expand hunting opportunities to include walk-in cougar, bear, and bobcat hunting.
 - Expand access for walk-in photography and wildlife observation.
 - Expand access for walking and equestrian trails.
 - Host ranger-led tours.
 - Investigate the feasibility of developing an observation and interpretation area.

3.3 Summary of Internal Planning Issues

This section describes the physical and policy framework in which the Service is able to manage wildlife habitat on the refuges. Important issues include the history of water delivery, water quantity, water management, habitat management, and governing policies. This framework has also guided the development of management alternatives and preparation of this draft CCP/EIS.

3.3.1 The Importance of Water in Achieving Refuge Purposes

Lower Klamath and Tule Lake Refuges, established in 1908 and 1928, respectively, are located within the Klamath Reclamation Project and are dependent on project facilities for delivery of their water supplies. Both refuges are considered “overlay” refuges on lands withdrawn by the United States for reclamation purposes in 1905. The Klamath Reclamation Project, as one of the nation’s first U.S. Bureau of Reclamation (Reclamation) projects, was authorized for irrigation, domestic, and power purposes. In the early 1900s this scenario was deemed acceptable. Important wildlife habitats were preserved and there existed a sufficient supply of water from project diversions and return flows to irrigate refuge wetland vegetation and agricultural crops. Water flow releases into the Klamath River and water levels in Upper Klamath Lake were adjusted as needed to facilitate project irrigation and water delivery for project purposes. Since the Klamath Reclamation Project is a **delivery and** drainage project, a reliable power supply is needed to deliver water for project uses and to remove excess water once its project consumptive beneficial use has been exhausted. Until 2006, electrical power needed to facilitate the complex movement of water throughout the project was inexpensive, and, thus, pumping large quantities of water was economical. Because of this situation, Tule Lake Refuge received abundant return flows from the project agriculture and excess water in the Tule Lake sumps was pumped to Lower Klamath Refuge via the D Plant (a 1-mile tunnel from Tule Lake Refuge to Lower Klamath Refuge). Lower Klamath Refuge also had the ability to take supplied water through project water diversions received directly from the Klamath River via the Ady Canal during times of the year when pumping from the D Plant was insufficient or unavailable.

While inexpensive electrical power continued until the water contract expired in 2006, historic water management began to change in 1988 when the Lost River and shortnose suckers were listed as endangered under the ESA. Drought in 1992 and issuance of a Biological Opinion (Service 1992) concerning effects of Klamath Reclamation Project operations on the listed suckers affected the delivery of irrigation water to the Klamath Reclamation Project, including the refuges. Although irrigation water delivery was average in 1992, project return flows were extremely limited. In a second drought year, 1994, although deliveries through Ady Canal were double the historic average, D Plant deliveries remained very low. As a result, the Klamath Basin Tribes had increasing concern that their tribal trust fishery resources were not adequately protected. The tribes were concerned that insufficient water was being provided to fulfill the Klamath Basin Tribes’ reserved treaty and federal reserved water rights for suckers in Upper Klamath Lake and the Hoopa and Yurok Tribes’ reserved fishery rights involving anadromous fish in the Klamath River. These concerns, as well as issues concerning compliance with the ESA and the use of project water by project water users, including the refuges, resulted in issuance of a Pacific Southwest Regional Solicitor’s Memorandum in 1995.

The memorandum clarified how water should be managed in the Klamath Reclamation Project, concluding that the first priority for water was compliance with the ESA, followed by protection of tribal trust resources, and then, to the extent water was available, to meet the obligation of

contracts with Klamath Reclamation Project water users, including irrigated lands on the refuges. Lastly, water would be supplied to meet the junior priority federal reserved water rights of the refuges. ESA listing of the coho salmon in the Klamath River in the late 1990s further limited water supplies to the project, including the refuges, by mandating increased flows in the river. Subsequently, increasing concern over the water needs to fulfill tribal treaty needs for suckers in Upper Klamath Lake and salmon in the Klamath River as well as the needs of endangered fish, project irrigation, and refuge water supplies resulted in issuance of a Department of the Interior Solicitor's Opinion in 1995 (DOI 1995).

The opinion upheld that of the Regional Solicitor by agreeing the refuges' federal reserved water right was last in priority and noted this was because it was junior in priority date. It also said certain irrigated lands on the refuge have vested water rights of 1905 which are equal to other project water rights and equal in priority with other project users (all 1905).

Nonetheless, it was not until 2001 that Lower Klamath Refuge experienced shortages in both project diversions and return flows. In the two drought years prior to 2001 (1992 and 1994) return flows from D Plant were much lower than normal but the refuge received average or above average deliveries of project diversions through the Ady Canal (21,000 acre-feet in calendar year [CY] 1992 and 42,000 acre-feet in CY 1994). However, in more recent drought years (2010, 2013, 2014, 2015), Lower Klamath Refuge has seen declines in both return flows and direct project diversions. In 2014 and 2015, Lower Klamath Refuge received zero project diversions through the Ady Canal. Recent declines in project diversions for Lower Klamath Refuge are, in part, related to the unresolved question of within-project priority for Lower Klamath Refuge, as discussed below.

To add to this dilemma, comparatively inexpensive electrical power for the Klamath Reclamation Project ended in 2006 when a 1950s-era power contract expired. As a result, electrical rates rose 15 to 20 times previous rates. This additional expense coupled with declining water availability and increased canal losses due to groundwater pumping resulted in less availability of return flows pumped through D Plant. **D Plant pumping has decreased in recent years for a variety of reasons.** The effect of this pumping reduction was and continues to be primarily felt on Lower Klamath Refuge.

The implications of these events and decisions on the ability of the Service to fully meet its requirements for proper waterfowl and wildlife management are discussed in more detail in Chapter 4, Alternatives, and specifically in the sections on water management common to all alternatives for each refuge.

3.3.2 Oregon Water Rights Adjudication

Concurrent with the reordering of water priorities for the Klamath Reclamation Project was the Oregon water rights adjudication process. The purpose of the adjudication was to determine the validity, priority, quantity, and other components of water rights to surface water in the upper Klamath Basin. The adjudication evaluated claims to surface water rights prior to 1909 and for federal reserved rights. In 1997, the Service filed two sets of claims in the adjudication, including irrigation claims for a 1905 priority date and federal reserved claims based on the dates in which the refuges were established. To provide a complete matrix of permanent wetlands, seasonal wetlands, uplands, and agricultural habitats, Lower Klamath Refuge requires a minimum of 95,000 acre-feet of water on a yearly basis, not including Area K, which requires an additional 19,000 acre-feet per year. In addition to water quantity, the timing of water delivery is critically important to fully meet the wetland habitat needs of wildlife.

The Service claimed 75,000 acre-feet on 25,000 acres for Lower Klamath Refuge and 50,000 acre-feet for 20,000 acres on Tule Lake Refuge for a sum total of 125,000 acre-feet. In the Klamath adjudication process over 730 claims were filed and over 5,600 contests to these claims were filed.

In March 2013, the Oregon Water Resources Department (OWRD) released its Final Order of Determination (FOD). In the FOD, the Service received project water rights with a 1905 priority date for irrigation uses for the leased and cooperative farm lands on both refuges, totaling nearly 85,000 acre-feet; and federal reserved rights with a priority date of 1925 for Lower Klamath Refuge (108,229 acre-feet) and 1928 and 1936 priority dates for Tule Lake Refuge (97,687 acre-feet). Additional federal reserved water right claims for later dates and smaller quantities were also awarded. The refuges' project water rights are overlapped by a portion of the federal reserved water right; however, the quantities provided for the two claim types are not additive.

In March 2014, the parties to the adjudication had the opportunity to file in Klamath County Circuit Court any exceptions (objections) to the FOD. In the interim, until the Circuit Court issues a final decree, the FOD is enforceable. For the first time, all water rights in the Upper Klamath Basin are subject to enforcement. Prior to issuance of the FOD, the adjudication claims were not subject to enforcement, but permitted or certificated water rights were.

Although the adjudication granted the water rights for the refuges and established the relative priority of all water rights within the basin, the priority of project water users relative to each other, the “within-Project priority,” was not, and should not have been, addressed in the adjudication. This is an issue for determination by the Secretary of the Interior. If project water supply is limited, water is distributed to project users according to the within-project priority system, **which is based on Reclamation’s understanding of its water delivery contracts.**

The irrigated lands on Tule Lake Refuge have an A, or first **priority**, to project water, as identified in the 1956 Tulelake Irrigation District contract.

In contrast, the within-project priority for irrigated lands on Lower Klamath Refuge has not been conclusively determined. The Service **and Reclamation continue to work towards a common understanding of the** within-project priority for irrigated lands on Lower Klamath Refuge **that is consistent with both Reclamation’s water delivery contracts and the 2013 Biological Opinion.**

3.3.3 Klamath Basin Agreements

Since 2003, the United States has spent over \$500 million in the Klamath Basin for irrigation, fisheries, national wildlife refuges, and other resource enhancements and management actions. Consequently, the United States; the states of California and Oregon; the Klamath, Karuk, and Yurok Tribes; Klamath Project water users; and other Klamath River Basin stakeholders negotiated the KBRA and the Klamath Hydroelectric Settlement Agreement (KHSA) to resolve long-standing disputes between them regarding a broad range of natural resource issues. The agreements were intended to result in effective and durable solutions which achieve the following: (1) restore and sustain natural fish production and provide for full participation in ocean and river harvest of fish species throughout the Klamath Basin; (2) establish reliable water and power supplies which sustain agricultural uses, communities, and national wildlife refuges; and (3) contribute to the public welfare and the sustainability of all Klamath Basin communities. Members of the California and Oregon delegations introduced legislation in the past two

Congresses to advance the KHSA and two related Klamath agreements. However, the U.S. Congress adjourned last year without **taking action to implement the KBRA, which then expired on January 1, 2016. The KHSA remained in force until it was superseded by the amended version in April 2016. The amended KHSA was signed on April 6, 2016, to achieve removal of four Klamath River dams through the Federal Energy Regulatory Commission relicensing process, and parties to the KBRA continue to work to realize the other bargained-for benefits of the agreements, including reliable water supply for the refuges. The Upper Klamath Basin Comprehensive Agreement remains in force.**

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