

**U.S. Department of the Interior  
Fish and Wildlife Service**

**FINDING OF NO SIGNIFICANT IMPACT**

**Environmental Assessment  
Temporary Transfer of Water Rights from Upper Klamath National Wildlife Refuge to  
Lower Klamath National Wildlife Refuge  
Klamath County, Oregon, Siskiyou County, California**

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The U.S. Fish and Wildlife Service (Service) has completed an Environmental Assessment (EA) for a temporary transfer of water rights from Upper Klamath National Wildlife Refuge (UKNWR) to Lower Klamath NWR (LKNWR). The EA is incorporated by reference. The U.S. Fish and Wildlife Service (Service) proposes to implement a temporary transfer of water rights from Upper Klamath National Wildlife Refuge (UKNWR) to Lower Klamath National Wildlife Refuge (LKNWR). The Service proposes to transfer the points of diversion and places of use for three State of Oregon appropriative water rights held by the Service from UKNWR to LKNWR for a period of up to 5 years, ending in August 2022. The proposed action tiers from the Final Comprehensive Conservation Plan/Environmental Impact Statement (CCP/EIS) for the Klamath Basin Complex (2016). The proposed action would help implement Goal 1, Objective 1.1 for the LKNWR which states that, over the next 15 years, the Service will seek to secure and efficiently distribute water of sufficient quantity and quality to achieve habitat and population objectives.

**Decision**

After reviewing the EA, the Service selected the Proposed Action for implementation. The Proposed Action best meets the purpose and need which is to support wildlife and habitats on LKNWR by utilizing existing Service water rights without negatively impacting wildlife and habitats on other Klamath Basin refuges.

**Alternatives Considered**

Following is a brief description of the alternatives presented in the EA.

*No Action Alternative*

Under Alternative A, the Service would not implement the five-year temporary transfer of water rights from UKNWR to LKNWR. The LKNWR would continue to receive water from other sources, but would likely continue to experience water shortages. The Service would maintain limited ability to achieve habitat and population objectives for migratory waterfowl. The No Action Alternative was not selected because it could not reasonably be expected to meet the Service's vision and goals for reducing the water shortage at LKNWR consistent with the purpose and need.

*Proposed Action (Selected Alternative)*

Under Alternative B, the Service would implement the approved transfer for up to five years (through the 2021 irrigation season). The water associated with these rights would not be

diverted at UKNWR. Instead, water would flow through Upper Klamath Lake into the Link River, Klamath River, and be diverted at the Ady Canal and used at LKNWR. The Service would divert only the amount of water that is lawfully available at the time. The purpose of each of these water rights is for irrigation. As defined by the State of Oregon, irrigation is “the artificial application of water to crops or plants by controlled means to promote growth or nourish crops or plants” (Oregon Administrative Rules 690-300 [26]). Therefore, the State of Oregon definition of irrigation is broad enough to include the application of water to grow wetland plants in addition to agricultural uses. Alternative B was selected because it can be most reasonably expected reduce the water supply shortage at LKNWR consistent with the purpose and need.

### **Effects of refuge management**

As described in the EA, implementing the selected alternative will have no significant impacts on any of the environmental resources identified in the EA. A summary of the impacts analysis and conclusions follows.

#### *Fish and Wildlife Species*

During years when the water rights are available for use, the Proposed Action may result in a temporary reduction in habitat for spring migrating waterfowl and other waterbirds on the Barnes and Agency units at UKNWR if the water is transferred to LKNWR rather than used to flood the wet meadow in the spring as it has in the past. However, spring-flooded wetlands, such as those on the Barnes and Agency units, are relatively abundant throughout the Upper Klamath sub-region and Southern Oregon and Northeastern California region (Intermountain West Joint Venture 2013). Thus, bird species and other wildlife that are dependent on spring-flooded wetland have sufficient habitat throughout the region. Seasonal and permanent wetland and cropland habitats on LKNWR are limited. Birds and other wildlife that are dependent on these habitats would greatly benefit from increased seasonal and permanent wetlands and croplands at LKNWR (see below).

The impact to fish and wildlife on LKNWR would be entirely beneficial. The transferred water would be used to support seasonal and permanent wetlands and croplands on various units of the refuge (Service 2016, Figure 4.6). In years where all three water rights could be used on LKNWR, the water could provide up to one third of the total water needed to support refuge population objectives for waterfowl and non-game waterbirds (Service 2016, Appendix F).

#### *Special Status Species*

No significant adverse effects on special status species are anticipated. Although there is potential habitat for the Oregon spotted frog on the UKNWR, there are no known modern occurrences. Under the proposed action the low lying areas are expected to remain wet from subsurface water where, if present, Oregon spotted frogs would be mostly likely to occur. Thus, the proposed water transfer is not expected to affect the species.

With the change in the points of diversion, streamflows in Sevenmile Creek, Fourmile Creek, Annie Slough, and the Wood River into Upper Klamath Lake and downstream flows between the Link River Dam and the Ady Canal would temporarily increase during the period of use. The increased flows in the smaller tributaries could be beneficial to fish and wildlife, and bull trout

critical habitat, given the volume relative to base flows. However, the increased flows in the rivers and through Upper Klamath Lake (UKL) are expected to have negligible effects on fish and wildlife given that they are temporary, relatively small compared to the base flows in UKL. The proposed action is not expected to affect SONCC coho salmon since they do not occur in the project area. Additionally, water flow downstream into the Klamath River where they do occur would remain unchanged because the water will still be diverted upstream from where SONCC coho salmon are present.

#### *Visitor Services*

At LKNWR, the transfer water would improve seasonal and permanent wetland habitat and this would in turn enhance recreational opportunities. With increased wetland habitat there would be more species of interest to observe along the auto trail route, as well as an improved quality of hunting. Recreational opportunities within the units where the transfer water could be used at LKNWR include hunting, wildlife observation, photography, and interpretation. An auto tour route winds through several of the units where the transfer water could be used.

#### **Public Review**

Public involvement in the temporary water rights transfer was initiated in April 2017 with the Service's application to the Oregon Water Resources Division (OWRD). Prior to filing the transfer application in August 2017, the Service conferred with the Bureau of Reclamation and representatives from the Klamath Project Water Users on the feasibility of the transfer. We also informally discussed the transfer with the Klamath Tribes. Because the water rights from the Agency and Barnes units are located within the Meadows Drainage District, the Service also notified the District before filing the transfer application. There were no concerns or issues raised during these discussions. Notice of the application for transfer was published on April 25, 2017, pursuant to Oregon Administrative Rules (OAR 690-380-4000.) No comments were filed. The Final Order for the temporary transfer was approved by OWRD on August 2, 2017.

The Draft EA was made available for public review and comment and published on the UKNWR page at

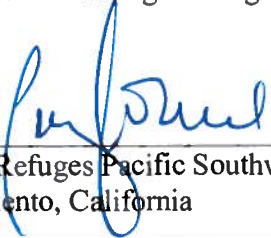
[https://www.fws.gov/refuge/Upper\\_Klamath/what\\_we\\_do/conservation.html](https://www.fws.gov/refuge/Upper_Klamath/what_we_do/conservation.html) from June 7 to June 22, 2018.

#### **Conclusions**

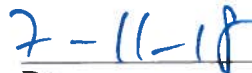
Based on review and evaluation of the information contained in the supporting references, I have determined that implementing Alternative B to implement a temporary transfer of water rights from Upper Klamath National Wildlife Refuge to Lower Klamath National Wildlife Refuge is not a major Federal action that would significantly affect the quality of the human environment, within the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the Service is not required to prepare an Environmental Impact Statement.

This Finding of No Significant Impact, Final EA and supporting references are on file at the U.S. Fish and Wildlife Service, Klamath Basin National Wildlife Refuge Complex 4009 Hill Road, Tulelake CA 96134; U.S. Fish and Wildlife Service, Pacific Southwest Region Refuge Planning

Office, 2800 Cottage Way, Sacramento, California, 95825; and available  
at [https://www.fws.gov/refuge/Upper\\_Klamath/what\\_we\\_do/conservation.html](https://www.fws.gov/refuge/Upper_Klamath/what_we_do/conservation.html).



\_\_\_\_\_  
Chief, Refuges Pacific Southwest Region  
Sacramento, California



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Date

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### References

U.S. Fish and Wildlife Service. 2016. Lower Klamath, Clear Lake, Tule Lake, Upper Klamath, and Bear Valley National Wildlife Refuges Final Comprehensive Conservation Plan/Environmental Impact Statement.

U.S. Fish and Wildlife Service. 2018. Final Environmental Assessment for the Temporary Transfer of Water Rights from Upper Klamath National Wildlife Refuge to Lower Klamath National Wildlife Refuge.

*Final Environmental Assessment*

*Temporary Transfer of Water Rights from Upper  
Klamath National Wildlife Refuge to Lower  
Klamath National Wildlife Refuge*

July 2018

**National Wildlife Refuge System Mission**

*To administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.*

*U.S. Fish and Wildlife Service  
Klamath Basin National Wildlife Refuge Complex  
4009 Hill Road  
Tulelake, California 96134*

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# *Chapter 1. Introduction*

## **1.1. Proposed Action**

The U.S. Fish and Wildlife Service (Service) proposes to implement a temporary transfer of water rights from Upper Klamath National Wildlife Refuge (UKNWR) to Lower Klamath National Wildlife Refuge (LKNWR). The Service proposes to transfer the point of diversions and places of use for three State of Oregon appropriative water rights held by the Service from UKNWR to LKNWR for a period of up to 5 years, ending in August 2022. The proposed action tiers from the Final Comprehensive Conservation Plan/Environmental Impact Statement (CCP/EIS) for the Klamath Basin Complex (2016). The proposed action would help implement Goal 1, Objective 1.1 for the LKNWR which states that, over the next 15 years, the Service will seek to secure and efficiently distribute water of sufficient quantity and quality to achieve habitat and population objectives. See chapter 2.1 for a detailed description of the proposed action.

## **1.2. Purpose and Need for Action**

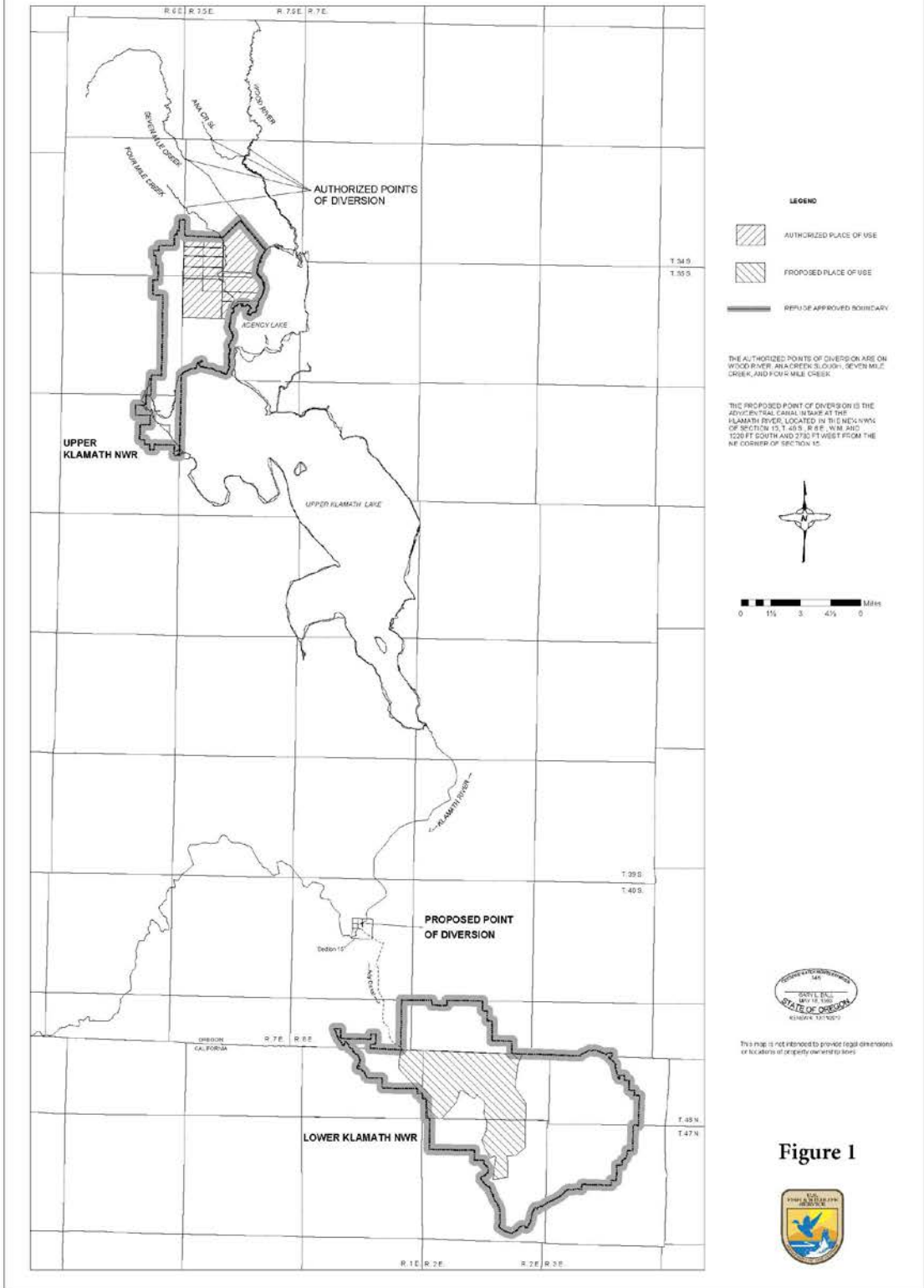
The purpose and need for the proposed action is to provide water delivery to support wildlife and habitats on LKNWR by utilizing existing Service water rights and without negatively impacting wildlife and habitats on other refuges within the Klamath Basin Complex. LKNWR was established as the nation's first waterfowl refuge in 1908 by President Theodore Roosevelt because of its tremendous wildlife resources. Establishing reliable water and the ability to cost-effectively and efficiently deliver it throughout wetland units on LKNWR is paramount to the Service's ability to provide diverse wetlands, protect native habitats and support wildlife diversity throughout the year.

LKNWR receives most of its water from two sources: Bureau of Reclamation Klamath Project (Project) diversion from the Klamath River through the Ady Canal, and Project return flows from Tule Lake sumps via the D plant. Approximately 105,000 acre-feet of water is needed each year to fully meet wetland and agricultural habitat objectives at LKNWR. Recent drought years associated with limited Project water availability have resulted in substantial reductions in Ady Canal deliveries to LKNWR. Compounding water supply problems is the significant decline of D Plant pumping of Project return flows from Tule Lake Refuge to LKNWR following the expiration of a 50-year old contract in 2006 that supplied low cost power to the Project irrigators. Therefore, there is a need to secure additional water to meet wetland and agricultural habitat objectives at LKNWR. Please see the 2016 CCP/EIS pages 3-6 through 3-8 and 5-56 through 5-63 for a discussion of water supply issues and hydrology at LKNWR (Service 2016)

## **1.3. Location**

The proposed action is located within the Klamath Basin National Wildlife Refuge Complex and the Klamath Basin in southern Oregon and northern California (see [Figure 1](#)). UKNWR is located in Oregon, north of and adjacent to Upper Klamath Lake. Water for the western portion of UKNWR comes from several spring-fed streams and from Upper Klamath Lake, which is hydrologically connected to the refuge. Much of

TEMPORARY TRANSFER APPLICATION VICINITY MAP  
 FOR THE U.S. FISH AND WILDLIFE SERVICE  
 KLAMATH BASIN NATIONAL WILDLIFE REFUGE COMPLEX  
 FOR TEMPORARY TRANSFER APPLICATION PROPOSING TO TRANSFER  
 PORTIONS OF CERTAIN TRACTS 4089, 4090, AND 4092 FROM  
 UPPER KLAMATH NATIONAL WILDLIFE REFUGE TO LOWER KLAMATH NATIONAL WILDLIFE REFUGE



the eastern area of the refuge is separated from the lake by a dike. Water supply for this area comes from diversions out of the Wood River, Annie Slough, Fourmile Creek, and Sevenmile Creek.

LKNWR is located at the Oregon-California border, downstream of Upper Klamath Lake. Water for the LKNWR is diverted from the Klamath River by way of the Ady Canal. The D Plant pumping facility also provides agricultural return flows to the refuge from the Tule Lake sumps.

#### **1.4. Previous Environmental Documents**

The Service published a Record of Decision for the Final CCP/EIS for the Lower Klamath, Clear Lake, Tule Lake, Upper Klamath, and Bear Valley National Wildlife Refuges (Refuge Complex) in January 2017; which implements a comprehensive 15-year management plan for the Refuge Complex consistent with refuge purposes; refuge goals and objectives; and applicable laws, regulations, and policies. The Final CCP/EIS includes detailed information on the affected environment of each refuge within the Refuge Complex; a programmatic-level alternatives analysis; as well as the goals, objectives, and strategies adopted to guide refuge management. This Environmental Assessment (EA) is tiered to the 2016 CCP/EIS for the Refuge Complex as provided in 40 CFR 1502.20. The 2016 CCP/EIS for the Refuge Complex can be found at: [https://www.fws.gov/refuge/Tule\\_Lake/what\\_we\\_do/planning.html](https://www.fws.gov/refuge/Tule_Lake/what_we_do/planning.html).

## *Chapter 2. Alternatives*

### **2.1. Proposed Action**

A potential solution to reduce the water supply shortage at LKNWR consistent with the purpose and need is to transfer state-based water rights from other locations to LKNWR. In the state of Oregon, a temporary water right transfer is a legal change to a point of diversion and/or place of use of an appropriated water right. In April 2017, the Service filed for a temporary (5-year) transfer of three State of Oregon water rights from the UKNWR to the LKNWR with the Oregon Water Resources Department (OWRD). The Final Order approving a five year transfer was issued in August 2, 2017. Although the new place of use, LKNWR, is located in California, the State of Oregon has jurisdiction over these water rights because the source of the water and point of diversion is in Oregon. In the Final Order, the OWRD acknowledged the new point of diversion is approximately 40 miles downstream from the original points of diversions for these rights. To account for evaporative loss as the transferred water traveled this distance and to prevent enlargement of these rights, OWRD limited the quantity that could be diverted at the Ady Canal to the consumptive use of these rights at the original places of use. OWRD estimated the consumptive use for these rights to be 1/133 of 1 cubic foot per second (cfs) per acre and 2.73 acre-feet per acre. The total quantity (rate and volume) allowed through the transfers was determined in this way.

The transferred water rights are irrigation water rights appurtenant to the Barnes and Agency units of UKNWR. The Barnes and Agency Units of UKNWR and associated water rights were

first acquired by the Federal government in 1998 and came to be managed by the Service over a series of years from 2006 to 2010 (see Figure 1).

Water was diverted on a trial basis to the LKNWR in August and September of 2017. As described in Table 1, because of regulation of instream flows on the Wood River in August and September, the Service only used Water Right Certificate 42582 for 30.87 cfs of flow.

Under the Proposed Action, the Service would implement the approved transfer for up to five years. The water associated with these rights would not be diverted at UKNWR. Instead, water would flow through Upper Klamath Lake into the Link River, Klamath River, and be diverted at the Ady Canal and used at LKNWR. The Service would divert only the amount of water that is lawfully available at the time. The purpose of each of these water rights is for irrigation. As defined by the State of Oregon, irrigation is “*the artificial application of water to crops or plants by controlled means to promote growth or nourish crops or plants*” (Oregon Administrative Rules 690-300 [26]). Therefore, the State of Oregon definition of irrigation is broad enough to include the application of water to grow wetland plants in addition to agricultural uses.<sup>1</sup> Table 1 shows the water rights transferred and the proposed place of use on the LKNWR.

The transferred water would be used at LKNWR on Units 1, 2, 3a, 3b, 6a, 6b1, 6b2, and 6c (see Figure 1). Habitat management on LKNWR is active and highly dependent on the timing and availability of water. The units listed above are managed for seasonal marsh/grain, pasture/hay, and permanent marsh, as shown on Figure 4.6 on page 4-43 of the Final CCP/EIS (Service 2016). Table 4.6 on page 4-40 in the Final CCP/EIS shows the priorities for use of delivered water by month and habitat type (Service 2016). These priorities would guide the application of the transferred water on LKNWR.

**Table 1. Summary of Temporary Water Rights Transfer**

	<i>Water Right Certificate 42581</i>	<i>Water Right Certificate 42582</i>	<i>Water Right Certificate 42583</i>
Priority	January 26, 1910	September 13, 1920	February 5, 1955
Season of Use	April 1 – October 1	April 1 – October 1	April 1 – October 1
Source	Wood River	Seven Mile Creek (32.99 cfs), Four Mile Creek (11.0 cfs), Annie Creek Slough (7.32 cfs)	Wood River
Certificated Rate	66.29 cfs	51.31 cfs	53.96 cfs

<sup>1</sup> This definition differs from the more restrictive definition OWRD used in the Klamath River Basin Adjudication Amended and Corrected Findings of Facts and Order of Determination (ACFFOD) dated February 28, 2014. In the vested claims filed by the United States in the adjudication, the Service claimed “irrigation for or consistent with Refuge purposes” which was specified to include the growth of wetland plants. But in ACFFOD, the State denied the claimed use, asserting that the use of Project irrigation water for wetland plants is not consistent with the meaning of the term “reclamation” as applied in the Reclamation Act. The United States has filed an exception to this determination. Since the transfer involves non-Project water, this ruling in the ACFFOD is not applicable to the temporarily-transferred water rights.

	<i>Water Right Certificate 42581</i>	<i>Water Right Certificate 42582</i>	<i>Water Right Certificate 42583</i>
Certificated Quantity	No quantity specified but duty in Wood River decree is 5 acre-ft/acre		No quantity specified but duty in Wood River decree is 5 acre-ft/acre
Transfer Quantity	39.69 cfs and 14,407 acre-ft (2.73 acre-ft/acre)	30.87 cfs and 11,205.8 acre-ft (2.73 acre-ft/acre)	31.05 cfs and 11,271 acre-ft (2.73 acre-ft/acre)
Place of Use	LKNWR on Units 3a, 6a, 6b1, 6b2, and 6c	LKNWR on Units 1 and 2	LKNWR on Units 1 and 2
Likely Availability	Water may not be available in all years (due to tribal instream calls.)	Water could be available in most years.	Water may not be available in all years (due to tribal instream calls.)

## 2.2. No Action

Under the No Action alternative, the Service would not implement the five-year temporary transfer of water rights from UKNWR to LKNWR. The Final Order from OWRD approving the temporary water transfer prohibits water use at the original points of diversion (at UKNWR) until after the 2021 irrigation season. Thus, under the No Action alternative, water would not be diverted and used at UKNWR and would also not be transferred and used at LKNWR. The LKNWR would continue to receive water from other sources, but would likely continue to experience water shortages.

## *Chapter 3. Affected Environment and Environmental Consequences*

This chapter examines the potential direct, indirect, and cumulative impacts to the affected environment associated with implementing the five year temporary transfer of state-based appropriated water rights held by the Service from the UKNWR to LKNWR. As stated in chapters 1.1 and 1.4, this EA is tiered to the Final CCP/EIS for the Klamath Basin Refuge Complex. For a description of the regional environment as well as a detailed description of both the UKNWR and LKNWR the reader is referred to the Final CCP/EIS at: [https://www.fws.gov/refuge/Tule\\_Lake/what\\_we\\_do/planning.html](https://www.fws.gov/refuge/Tule_Lake/what_we_do/planning.html). This EA is limited in scope to an analysis of resources that could be affected by the proposed action. Resources listed in Table 2 would not be affected by the proposed action and were therefore eliminated from further review in this EA.

**Table 2. Resources Eliminated from Detailed Evaluation**

<i>Resource</i>	<i>Rationale</i>
Geology	The proposed action would not physically alter the landscape. No construction is proposed and the water transfer would use existing facilities.
Soils	The proposed action would not physically alter the landscape. No construction is proposed, the water transfer would use existing facilities, and the application of water on the LKNWR is in areas designated for wetland and agricultural habitats.
Water Quality	The proposed action would not physically alter the landscape. No construction is proposed, the water transfer would use existing facilities, and the application of water on the LKNWR is in areas designated for wetland and agricultural habitats.
Air Quality	No construction or ground disturbing activities would take place under the proposed action.
Cultural Resources	No construction or ground disturbing activities would take place under the proposed action.
Social and Economic Conditions	The proposed temporary water transfer would have no effect on agricultural production. Any potential effects to recreational opportunities are addressed in 3.3.
Climate Change	The proposed action does not include construction and would use existing facilities within the normal range of operations.

### **3.1. Vegetation and Habitat**

#### *3.1.1. Affected Environment*

The Barnes and Agency units are located in the northwest corner of UKNWR. Prior to reclamation, this area existed as flooded wetlands within the high water levels of the Upper Klamath and Agency Lakes, with vegetation appearing similar to that in the rest of UKNWR. Between the 1940s and 1990s, containment dikes were built to separate these reclaimed lands from Upper Klamath and Agency Lakes, and pump facilities were installed to drain the area and facilitate seasonal livestock grazing. Gates were opened in the spring to flood irrigate the lands, and water was pumped out in the summer to allow for cattle grazing. Additional canal and drainage system features were added over time, creating the current complex network of canals, dikes, and gates. Subsidence resulting from this altered hydrology (annual draining and drying), compaction by livestock, and oxidation of peat soils has been widespread in the area, including at the Barnes and Agency units (Reclamation 2009a). The subsided soil surface in much of the Barnes and Agency units is often lower than the water levels in the adjacent Upper Klamath and Agency Lakes, resulting in a shallow groundwater table, and subsurface soils that remain saturated year round. The combination of altered hydrology and soils and past land use practices are important factors in determining the plant community composition on Barnes and Agency units.

Currently, wet meadow is the primary vegetation on both the Barnes and Agency units (USFWS 2016). The majority of the Agency unit (77%) supports wet meadow dominated by pale spikerush. This habitat is interspersed with marsh areas supporting broadleaf cattail, needle spikerush, water smartweed, and common duckweed. More than 96% of the Barnes unit consists of wet

meadow. The remaining 4% consists of ditches and drainage canals and upland-dominated perimeter dikes. This property is dominated by Baltic rush, creeping spikerush, Nebraska sedge, and giant reed canarygrass.

The vegetation and habitats on LKNWR management units that could potentially receive the transferred water vary from year to year depending on the availability of water and habitat management needs. These units that can include permanent marsh, seasonal marsh, grain, or fallow/dry wetlands are described in greater detail in Chapter 5.2.6 pages 5-64 through 5-69 of the Final CCP/EIS (Service 2016).

### *3.1.2. Environmental Consequences*

#### Proposed Action

Under this alternative, the water associated with these rights would not be diverted at UKNWR. Instead, water would flow through Upper Klamath Lake into the Link River, Klamath River, and be diverted at the Ady Canal and used at LKNWR. The Service would divert only the amount of water that is lawfully available at the time.

When water under the three water right certificates is available, it would not be used to flood irrigate the Barnes and Agency units as it has been in the past. As a result, the growth and vigor of the wet meadow vegetation would be temporarily reduced compared to if it were flood irrigated. However, since water under the three rights may not be available for transfer every year and since the units are located on subsided lands with a high water table and saturated subsurface soils, the long term effects on vegetation and habitat would be negligible because the plant communities will continue to benefit from subsurface water.

At LKNWR, the additional water supply would provide a small but secure water supply for the refuge from April to October. Individual management units including permanent marsh, seasonal marsh, grain, or fallow/dry wetlands that could be supported in the new place of use using the transferred water are described and depicted on a map in Figure 4.6 page 4-35 of the Final CCP/EIS (Service 2016)

April to October is a critical time for water supply at LKNWR for several reasons. First, this is a time when there is significant demand from the Klamath Project agricultural users and the refuges for Klamath Project water in the Upper Klamath Lake. Water from another source would alleviate some of the pressure on this limited water supply. Second, water in late spring and early summer provides breeding habitat for waterbirds at the refuge. This is a habitat type that has been lacking at LKNWR due to summer water shortages experienced by the refuge in recent years. Third, reliable water throughout the summer and early fall helps bring wetlands online for migration and provides more assurance that adequate wetland habitat will be available to attract and hold birds over the breadth of fall migration. Since all Ady Canal water reaching LKNWR must be conveyed through Unit 2, the transfer water would also help maintain this as a permanently flooded wetland unit while it is used to supply irrigation water for other units (see Figure 1).



## No Action

Under the No Action alternative, the water transfer would not take place. Water would not be diverted and used at UKNWR and would also not be transferred and used at LKNWR. However, given that the Barnes and Agency units receive subsurface water as well as flood irrigation, long-term change to plant communities and habitats would be unexpected from temporary absence

However, the Service's ability to achieve vegetation and habitat objectives on LKNWR would be diminished compared to the Proposed Action. Limited water delivery during the spring and summer season particularly limits the extent of permanent wetland habitat on the LKNWR. Under the No Action Alternative, limited water delivery during spring and summer seasons would result in reduced capability for the Service to provide permanent wetlands, diversity of emergent and submergent plants, brood-rearing habitat for birds which reproduce in refuge wetlands, safe areas for birds to molt during late summer, and invasive plant control.

### **3.2. Fish and Wildlife**

#### *3.2.1. Affected Environment*

The affected environment for fish and wildlife includes the general area involved in the transfer of these water rights: UKNWR, Agency Lake, Upper Klamath Lake, Link River, Klamath River to the Ady Canal diversion point, and LKNWR. Biological resources, including sensitive species, at UKNWR and LKNWR, as well as the regional setting, are described in the 2016 CCP/EIS in greater detail in Chapter 5 pages 5-1 through 5-94 (Regional and LKNWR) and pages 5-145 through 5-165 (UKNWR) of the Final CCP/EIS (Service 2016).

The UKNWR is an important staging area for migratory waterfowl of the Pacific Flyway during both the spring and fall migration. The emergent vegetation is crucial to waterfowl during periods of inclement weather when conditions on the open lake are inhospitable.

As described on pages 5-26 through 5-30 in the 2016 CCP/EIS, sensitive species include the Oregon spotted frog, Lost River and shortnose suckers, and bull trout (Service 2016). In addition, the Service is also considering potential effects to the Southern Oregon/Northern California Coast (SONCC) coho salmon. While the SONCC coho salmon is not found upstream of the Iron Gate Dam the Service is considering whether or not there would be any effects to downstream flows for this species from changing the point of diversion.

The Oregon spotted frog is listed as threatened under the Endangered Species Act (ESA) (79 FR 51657 51710). There is no designated critical habitat for this species within the boundary of the UKNWR. Although Oregon spotted frogs are known to exist on private lands near UKNWR, limited surveys did not detect any spotted frog on Agency-Barnes Ranch. (C. Pearl, U.S. Geological Survey, personal communication May 8, 2018)

Both the Lost River and shortnose sucker are listed as endangered under the ESA (53 FR 27130). While both species occur in Agency Lake and Upper Klamath Lake and their tributaries, they do not inhabit the Agency Barnes units of the UKNWR because it is cut off from the lakes by levees.

The Klamath River and Columbia River populations of bull trout are listed as threatened under the ESA (63 FR 31647). This species occurs in Agency Lake and Upper Klamath Lake and their tributaries, but it does not inhabit the Agency-Barnes Ranch units of the UKNWR, which is cut off from the lakes by levees.

The National Marine Fisheries Service listed the SONCC coho salmon as threatened under the ESA in 1997 (62 FR 24588). Designated critical habitat for the SONCC coho salmon is in the mainstem Klamath River downstream of the Iron Gate Dam. This species does not occur in or near UKNWR.

With sufficient water, the LKNWR hosts high numbers of waterbirds overall; large numbers of migrant and breeding shorebirds; and important colonies of the eared grebe, American white pelican, great egret, white-faced ibis, and Forster's and black terns. Neither the Oregon spotted frog nor the bull trout are found on LKNWR. The Lost River and shortnose suckers occur only in Stearns Pond on the LKNWR. The Service operates three fish ponds on LKNWR known collectively as the Stearns ponds to conduct research to assist with recovery of these species.

### *3.2.2. Environmental Consequences*

#### Proposed Action

During years when the water rights are available for use, the Proposed Action may result in a temporary reduction in habitat for spring migrating waterfowl and other waterbirds on the Barnes and Agency units if the water is transferred to LKNWR rather than used to flood the wet meadow in the spring as it has in the past. However, spring-flooded wetlands, such as those on the Barnes and Agency units, are relatively abundant throughout the Upper Klamath sub-region and Southern Oregon and Northeastern California region (Intermountain West Joint Venture 2013). Thus, bird species and other wildlife that are dependent on spring-flooded wetland have sufficient habitat throughout the region. Seasonal and permanent wetland and cropland habitats on LKNWR are limited. Birds and other wildlife that are dependent on these habitats would greatly benefit from increased seasonal and permanent wetlands and croplands at LKNWR (see below).

Although there is potential habitat for the Oregon spotted frog on the UKNWR, there are no known modern occurrences. Under the proposed action the low lying areas are expected to remain wet from subsurface water where, if present, Oregon spotted frogs would be mostly likely to occur. Thus, the proposed water transfer is not expected to affect the species.

With the change in the points of diversion, streamflows in Sevenmile Creek, Fourmile Creek, Annie Slough, and the Wood River into Upper Klamath Lake and downstream flows between the Link River Dam and the Ady Canal would temporarily increase during the period of use. The increased flows in the smaller tributaries could be beneficial to fish and wildlife, and bull trout critical habitat, given the volume relative to base flows. However, the increased flows in the rivers and through Upper Klamath Lake (UKL) are expected to have negligible effects on fish and wildlife given that they are temporary, relatively small compared to the base flows in UKL.

The proposed action is not expected to affect SONCC coho salmon since they do not occur in the project area. Additionally, water flow downstream into the Klamath River where they do occur

would remain unchanged because the water will still be diverted upstream from where SONCC coho salmon are present.

The impact to fish and wildlife on LKNWR would be entirely beneficial. The transferred water would be used to support seasonal and permanent wetlands and croplands on various units of the refuge (Service 2016, Figure 4.6). In years where all three water rights could be used on LKNWR, the water could provide up to one third of the total water needed to support refuge population objectives for waterfowl and non-game waterbirds (Service 2016, Appendix F).

### No Action

Under the No Action alternative, the water transfer would not take place. Water would not be diverted and used at UKNWR and would not be transferred and used at LKNWR. However, LKNWR would not receive a source of water in the spring and summer that could be used to support seasonal and permanent wetlands.

## **3.3. Visitor Services**

### *3.3.1. Affected Environment*

Recreational opportunities at UKNWR include hunting, fishing, wildlife observation, interpretation and photography. Access to the refuge for these activities is via boat at launches just outside of the refuge. The Barnes and Agency Lake units are currently closed to waterfowl hunting. When the lake levels are low it can be difficult to access the marsh reducing the numbers of hunters, fishermen, and wildlife photographers.

Recreational opportunities within the units where the transfer water could be used at LKNWR include hunting, wildlife observation, photography, and interpretation. An auto tour route winds through several of the units where the transfer water could be used.

### *3.3.2. Environmental Consequences*

### Proposed Action

The main constraint to recreational opportunities at UKNWR is the lake level at Upper Klamath Lake. The lake level elevations at Upper Klamath Lake are managed by the Bureau of Reclamation for Klamath Irrigation Project purposes in accordance with a 2013 Biological Opinion. The water transfer would not affect the lake level by a detectable amount because the transfer only allows the consumptive quantity to be transferred. The consumptive quantity is the amount of water that would be used at the original place of use and point of diversion; and does not include any water which would have been cycled back to the lake. Thus, water from the that would return to the lake under the original right, will remain in the lake under the transfer.

At LKNWR, the transfer water would improve seasonal and permanent wetland habitat and this would in turn enhance recreational opportunities. With increased wetland habitat there would be

more species of interest to observe along the auto trail route, as well as an improved quality of hunting.

### No Action

Under the No Action alternative recreational opportunities at UKNWR would continue to depend on access to the marsh habitat. However at LKNWR, the quality of recreational opportunities could be reduced as compared to the Proposed Action. Although user days may not be reduced, it is likely that there would be fewer waterfowl to hunt and less wildlife available for viewing and photography. It is likely that obtaining sufficient water to support seasonal and permanent wetlands would continue to be a challenge.

### **3.4. Cumulative Impacts**

A cumulative impact is an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. If there are no direct or indirect effects from an action on a particular resource, there can be no cumulative effects on that resource from that action. Past, present, and reasonably foreseeable future actions are described in chapter 6.7 of the Final CCP/EIS (Service 2016). As described in chapter 3.1, 3.2, and 3.3 of this EA, implementation of the proposed temporary water transfer would have minimal effects. The water transfer applies only to consumptive water and two of the three water rights certificates are constrained in dry years. As described above, it is unlikely that this temporary transfer would adversely affect vegetation and habitat or fish and wildlife. The temporary water transfer would provide up to a third of the water needed for optimum wetland habitat on the LKNWR, which would in turn improve habitat for waterfowl and waterbirds and enhance recreational opportunities. Additionally, the Service is unaware of any other projects in the Upper Klamath region which would have a similar effect by transferring water downstream, which would result in less spring flooded wetland habitat or similar impacts in the Upper Klamath Lake watershed or increased critically needed wetland habitat in the Lower Klamath Lake basin. Accordingly, the Service has concluded that there would be no cumulative impacts to vegetation and habitat, fish and wildlife, or to recreational opportunities from the temporary water transfer.

## *Chapter 4. Consultation and Coordination*

### **4.1. Water Rights Transfer**

The State of Oregon water right transfer process provides a method to change the point of diversion or appropriation, the place of use, or the beneficial use of the right from that for which the right was originally issued. The water right holder must obtain approval of a water right transfer from the Oregon Water Resources Division (OWRD) before making any of these changes. As part of the water right transfer process, OWRD reviews a water right transfer application to ensure that other water right holders will not be injured as a result of the proposed change. OWRD issues a public notice of the application through its website to provide other water right holders an opportunity to identify any injury that would occur as a result of the transfer. In

addition, OWRD staff review the application to determine if the proposed change will result in injury to other water rights. Specifically, OWRD relies heavily on the opinion of the local watermaster to assess the transfer application. The Final Order approving or denying the transfer is also publicly noticed and there is an opportunity for anyone to contest the transfer at that point as well.

The Service filed to temporarily transfer the water rights from UKLNWR to LKNWR in April, 2017. Prior to filing the transfer application, the Service conferred with the Bureau of Reclamation and representatives from the Klamath Project Water Users on the feasibility of the transfer. We also informally discussed the transfer with the Klamath Tribes. Because the water rights from the Agency and Barnes units are located within the Meadows Drainage District, the Service also notified the District before filing the transfer application. There were no concerns or issues raised during these discussions. Notice of the application for transfer was published on April 25, 2017, pursuant to Oregon Administrative Rules (OAR 690-380-4000.) No comments were filed. The Final Order for the temporary transfer was approved by OWRD on August 2, 2017.

#### **4.2. Water Rights Transfer Implementation**

The draft EA was available for a 15-day public review period beginning on June 8, 2018 and ending on June 23, 2018. The draft EA was posted on the Refuge's website at: [https://www.fws.gov/refuge/Upper\\_Klamath/what\\_we\\_do/conservation.html](https://www.fws.gov/refuge/Upper_Klamath/what_we_do/conservation.html). We received only technical comments from Bureau of Reclamation and those changes were considered in preparing the final EA.

## *Chapter 5. References*

Bureau of Reclamation (Reclamation). 2009a. Preliminary Site Planning: Restoration and Potential for Enhancing Wetland Values at the Barnes Ranch and Agency Lake Ranch Sites – Upper Klamath Lake, Oregon.

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U.S. Fish and Wildlife Service, 2012, Endangered and threatened wildlife and plants - Designation of Critical Habitat for Lost River Sucker and Shortnose Sucker: Final rule: Federal Register 77 FR 73739.

U.S. Fish and Wildlife Service, 2014, Endangered and Threatened Wildlife and Plants; Threatened Status for Oregon Spotted Frog; Final rule: Federal Register 79 FR 51657.

U.S. Fish and Wildlife Service. 2016. Lower Klamath, Clear Lake, Tule Lake, Upper Klamath, and Bear Valley National Wildlife Refuges Final Comprehensive Conservation Plan/Environmental Impact Statement.