FINDINGS AND RECOMMENDATIONS REGARDING THE PROPOSED ISSUANCE OF AN ENDANGERED SPECIES ACT SECTION 1O(A)(1)(B) INCIDENTAL TAKE PERMIT FOR STORAGE, RELEASE, DIVERSION, AND RETURN OF IRRIGATION WATER BY THE DESCHUTES BASIN BOARD OF CONTROL MEMBER DISTRICTS AND GROUNDWATER WITHDRAWALS, EFFLUENT DISCHARGES, AND SURFACE WATER DIVERSIONS BY THE CITY OF PRINEVILLE IN KLAMATH, DESCHUTES, JEFFERSON, CROOK, WASCO, AND SHERMAN COUNTIES, OREGON

The U.S. Fish and Wildlife Service (Service) proposes to issue an Incidental Take Permit (ITP) with a term of 30 years to the Deschutes Basin Board of Control (DBBC)'s eight member irrigation districts and the City of Prineville (Applicants) for storage, release, diversion, and return of irrigation water by the DBBC member districts and groundwater withdrawals, effluent discharges, and surface water diversions by the City of Prineville. The eight irrigation districts that make up the DBBC are: Arnold, Central Oregon, Lone Pine, North Unit, Ochoco, Swalley, Three Sisters, and Tumalo. The ITP would provide authorization in accordance with the requirements of section 10(a)(l)(B) of the Endangered Species Act of 1973, as amended (ESA; 16 USC §1531-1544;) for the take of two covered species likely to be caused by the covered activities.

This statement of findings and recommendations relies on the following documents: (1) the Deschutes Basin Final Habitat Conservation Plan (DBHCP) (Biota Pacific 2020); (2) the Service's Final Environmental Impact Statement (EIS; USFWS 2020a) addressing the proposed permit action pursuant to the requirements of the National Environmental Policy Act (NEPA; 42 U.S.C. § 4321 et seq.); and (3) the Service's 2020 Biological Opinion addressing the proposed permit action (USFWS 2020b) pursuant to the requirements of section 7 of the ESA. The decision record for these findings and recommendations is on file at the Service's Bend Field Office, in Bend, Oregon.

I. Description of the Proposed Action

The Applicants submitted a joint ITP application with an accompanying DBHCP to the Service pursuant to the requirements of section l0(a)(l)(B) of the ESA. The requested ITP would authorize incidental take of the threatened Oregon spotted frog (OSF; *Rana pretiosa*) and the threatened bull trout (*Salvelinus confluentus*) (collectively, the covered species).

The Permit Area addressed under the ITP is described in detail in Chapter 3.2 of the DBHCP and includes the Deschutes River Basin in Central Oregon, including all waters downstream of the covered activities where covered species could be impacted by altered hydrology or water quality. The upstream limits of the covered lands and waters are those locations where the covered activities first influence surface hydrology. On the Deschutes River and Ochoco Creek, the covered lands begin at the full-pool elevations of Crane Prairie and Ochoco reservoirs, respectively. On Crescent Creek, Whychus Creek, Crooked River, McKay Creek and Lytle Creek, the first points of influence are dams or

diversion structures operated by the proposed Permittees. On Tumalo Creek, the first point of influence is the outfall from Tumalo Irrigation District's Crater Creek diversion, and on Trout Creek the first point of influence is a return flow from NUID. The downstream limit of all covered lands and waters is the mouth of the Deschutes River at the Columbia River. Within the covered stream reaches, the covered lands and waters extend only to stream channels and floodplains potentially subjected to surface inundation, as described in the DBHCP.

Incidental take of the covered species is likely to be caused by the activities of the Applicants that influence surface hydrology and water quality in the Deschutes Basin of Central Oregon. Each of the covered activities is associated with an identified structure or feature, such as a dam, reservoir, diversion, or return. These covered activities, as described in the DBHCP, occur within the Permit Area and are likely to result in the incidental take of covered species for which the Applicants are requesting incidental take authorization under section 10(a)(l)(B) of the ESA. These covered activities include the storage and release of water at four irrigation reservoirs, the diversion of water from 47 large and small diversion structures, the return of water at 37 sites, groundwater pumping from 14 wells (12 current and 2 future), and seasonal discharge of treated effluent to the Crooked River.

The DBHCP includes measures to minimize and mitigate the effects of unavoidable incidental take of the covered species, as required by the ESA. The EIS analyzes the effects of issuing the proposed ITP and three other alternatives, including a no action alternative, on the human environment. The resulting effects of each of these alternatives were compared and presented in the EIS. The preferred alternative is issuance of the requested ITP to authorize incidental take of covered species caused by the Applicant's otherwise lawful, covered activities.

Implementing covered activities is likely to cause take of individuals of the covered species in the form of "harm" (as that term is defined in the regulations). The Applicants propose to minimize and mitigate, to the maximum extent practicable, the impacts of that take via the conservation measures set forth in the DBHCP (Ch. 6). The overall conservation strategy under the DBHCP is to better align water management operations with the life history needs of the covered species. Primarily, the conservation measures include a combination of specific flow requirements at specific gauges at defined periods of time to provide water for the covered species to fulfill the life history needs of the covered species (e.g., breeding, feeding, sheltering, etc.). Additional conservation measures address site-specific impacts, including fish screen maintenance, targeted in-stream water leasing, and other specifics outlined in the DBHCP.

Although a number of other candidate, threatened, and endangered species for which the Service has ESA responsibility could occur within the affected area (see Section 3.4 of the EIS), the covered activities are not expected to result in take of any candidate, threatened, or endangered species or adversely affect any designated critical habitats

beyond those described in the DBHCP. On that basis, the Applicants did not request coverage for any other candidate, threatened, or endangered species under the ITP. We determined that the two species identified as covered species are the only species with Federal status under the Service's jurisdiction that may be affected by the DBHCP.

II. Analysis of Effects

The effects of the requested permit action and impacts from DBHCP implementation are fully analyzed in the Service's EIS (USFWS 2020a) and Biological Opinion (USFWS 2020b), which are incorporated herein by reference. The final DBHCP was evaluated in terms of the impacts likely to occur to the OSF and the bull trout with its implementation; further information on the evaluation is available in the DBHCP (Chapters 4 and 8), in the EIS (Chapters 3 and 4), and in the Biological Opinion.

Overall, the Biological Opinion includes a finding that the combined effects of the final DBHCP measures will not appreciably reduce the likelihood of survival or recovery of the covered species in the wild, or destroy or adversely modify any designated critical habitat. As described in detail below, as a result of the DBHCP we expect improvements in aquatic habitat quality and function that are likely to provide conservation benefits to the covered species.

Oregon Spotted Frog

Species Background

The OSF was listed as threatened under the ESA on August 29, 2014 (79 FR 51658). Historically, the OSF ranged from British Columbia to the Pit River basin in northeastern California. Currently, the OSF is found within 15 sub-basins, ranging from extreme southwestern British Columbia south through the Puget Trough, and the Cascades Range from south-central Washington at least to the Klamath Basin in southern Oregon (Table 1; 79 FR 51662-51663). The OSF is highly aquatic. It is almost always found in or near a perennial body of water that includes zones of shallow water and abundant emergent or floating aquatic plants, which the frogs use for basking and cover. Large historical losses of wetland habitat have occurred across the range of the OSF. Wetland losses are estimated from between 30 to 85 percent across the species' range, with the greatest percentage of loss having occurred in British Columbia. These wetland losses have directly influenced the current fragmentation and isolation of remaining OSF populations. Loss of natural wetland and riverine disturbance processes as a result of human activities has and continues to result in degradation of OSF habitat.

In the Final Rule to list the OSF as threatened (79 FR 51658), the Service determined that the species is impacted by one or more of the following factors:

- Habitat necessary to support all life stages is continuing to be impacted and/or

destroyed by human activities that result in the loss of wetlands to land conversions; hydrologic changes resulting from operation of existing water diversions/manipulation structures, new and existing residential and road developments, drought, and removal of beavers; changes in water temperature and vegetation structure resulting from reed canarygrass invasions, plant succession, and restoration plantings; and increased sedimentation, increased water temperatures, reduced water quality, and vegetation changes resulting from the timing and intensity of livestock grazing (or in some instances, removal of livestock grazing at locations where it maintains early seral stage habitat essential for breeding);

- Predation by nonnative species, including nonnative trout and bullfrogs;
- Inadequate existing regulatory mechanisms that result in significant negative impacts such as habitat loss and modification; and
- Other natural or manmade factors including small and isolated breeding locations, low connectivity, low genetic diversity within occupied sub-basins, and low genetic differentiation between sub-basins.

Also, there are synergistic effects associated with combined threats faced by the OSF. All occupied sub-basins are subjected to multiple threats, which cumulatively pose a risk to individual populations. Many of these threats are intermingled, and the magnitude of the combined threats to the species is greater than the individual threats (79 FR 51658).

Estimated Amount of Take

Based on the analysis and results presented in the Biological Opinion, the requested permit action is expected to result in incidental take of the OSF in the form of harm as a result of altered habitat conditions (including increased exposure of OSF life stages to desiccation and predation by birds, snakes, small terrestrial mammals such as mink or raccoons, and fish) that significantly disrupts feeding, breeding and sheltering. Take is quantified by using various surrogates, which were a combination of affected wetland acres, storage volumes, and gauge flow rates in specific geographic areas. The quantified take is listed in Table 1 and described in detail in the Service's Biological Opinion (USFWS 2020b).

Table 1. Annual Take Quantification for the Oregon Spotted Frog

Location	Surrogate Quantification of Exempted Take	Conditions that reflect take exceedance
Upper Deschutes River Sub basin Above Wickiup Dam		
Crane Prairie Reservoir	583 acres of dewatered wetlands between July 16 and October 31 (drawdown period); Entire reservoir pool where storage volumes are between 37,870 and 46,800 acre-feet between October 15 and March 15.	Storage volumes below 46,800 acre-feet between March 15 and July 15; Drawdown initiation before July 15; Storage volumes below 37,870 acre-feet at any time of the year, for OSF conservation.
Wickiup Reservoir, including Deschutes River wetlands between reservoirs	2,961 acres of dewatered wetland acres between April 1 and October 15 as storage volumes are reduced below 200,000 acre feet (i.e., maximum storage volume); All remaining frogs in the Wickiup Reservoir pool over winter.	Since all Oregon spotted frogs within the reservoir, including the Deschutes River between Crane Prairie and Wickiup reservoirs, are anticipated to be taken annually, take in Wickiup reservoir cannot be exceeded.
Upper Deschutes River Sub basin Below Wickiup Dam		
1: Wickiup Dam to Fall River (includes monitored Oregon spotted frog sites at Bull Bend, Dead Slough and La Pine SP SW Slough) 2: Fall River to Little Deschutes (includes monitored spotted frog sites on private land at RM 202 and 195)	633 acres of dewatered wetlands when flows at the WICO gauge are <900 cfs between September 15 and June 29.	Flows at WICO gauge <900 cfs between June 30 and September 14.
3: Little Deschutes to Benham Falls (includes Sunriver)	115 acres breeding and rearing habitat within wetlands in Sunriver when flows at WICO gauge are <1,580 cfs year round; 171 acres of dewatered riverine wetlands (not including Sunriver) when flows at BENO are <1,300 cfs between September 16 and June 30.	N/A Flows <1,300 cfs at the BENO gauge between July 1 and September 15.

4: Benham to Dillon Falls (includes monitored Oregon spotted frog sites at East Slough Camp and S. Ryan Ranch)	198 acres of dewatered wetlands when flows at BENO drop below 1,600 cfs and are above 1,300 cfs between July 1 and September 15, and when flows drop below 1,600 cfs between September 16 and June 30.	Flows <1,300 cfs at the BENO gauge between July 1 and September 15.
5: Dillon Falls to Lava Island Falls	If and when occupied, 95 acres of dewatered wetlands when flows at BENO drop below 1,500 cfs year round.	N/A
6: Lava Island Falls to COID diversion (includes monitored spotted frog site on private land at RM 172)	7 acres of dewatered wetland from September 15 to April 30.	N/D
7: COID Diversion to Colorado Street Bridge (includes LSA Marsh in Old Mill)	8 acres of wetland from September 15 to April 30 (due to reduced water levels).	N/D
Deschutes River Channel	988 acres of riverine wetland from September 16 to March 31 at flows of ≥100 cfs at in Phase 1; ≥300 in Phase 2; ≥400 cfs in Phase 3.	As measured at the WICO gauge (September 16 to March 31), <100 cfs at in Phase 1; <300 in Phase 2; <400 cfs in Phase 3
Little Deschutes River Sub basin		
Crescent Creek	1,182 acres when flows at CREO gauge are <90 cfs year round.	N/D
Little Deschutes River from Crescent Creek confluence to mouth at the Deschutes River	3,322 acres of wetlands between September 1 and June 30.	N/D

N/D = Not defined: Based on best available information take exceedance thresholds for these reaches could not be defined due to a lack of river gauges and associated river stage-floodplain inundation information; N/A = Not Applicable as take is exempted for the entire year; WICO, BENO, CREO = flow measurement gauges on the Upper Deschutes River; COID = Central Oregon Irrigation District; RM = river mile; Cfs = cubic feet per second.

Summary of Effects of the Action on the Oregon Spotted Frog

Overall, the effect of the take described above reduces the number of individuals (directly by killing them, or harming them by significantly modifying their habitat in a manner that impairs their ability to feed, breed, or shelter) annually that are able to meet their full life history needs for survival. Reduced numbers of individuals each year reduces the species' overall resiliency, making the OSF more susceptible to stochastic events and ongoing threats from predators and habitat modification. Dewatered wetlands

strand individuals, thus reducing the numbers that migrate into their overwintering habitats. Over time, reduced numbers of individuals successfully migrating to and from their seasonal habitats further reduces the numbers of breeding individuals, which are necessary to sustain the population.

Habitat impacts due to decades of extremely low winter flows and extremely high summer flows have scoured and widened the Upper Deschutes River's channel and flooded wetland vegetation, making most wetland habitats unsuitable and disconnected from the river. The conservation strategy for the OSF was designed to minimize and fully offset these effects by designing flow management strategies in specific reaches, at specific times, to enhance connectivity and support breeding, feeding and sheltering of individuals to enhance the population. Habitat improvement projects, which will be aligned with these flow modifications, will improve and provide suitable habitats across the broad geography affected by the water management operations.

The Service identified habitat loss and/or modification due to hydrologic changes (e.g., dams, ditches, and water control structures) as a primary threat to the OSF when the species was listed in 2014 (79 FR 51658). The Service is currently drafting a recovery plan and recovery implementation strategy (RIS) for the OSF. The RIS will identify specific actions within the Upper Deschutes River sub-basin necessary to improve resiliency of OSF populations within the Upper Deschutes Basin.

Over time, implementation of the DBHCP's minimization and mitigation measures will allow flows in the Upper Deschutes Basin to more closely mimic the natural hydrology. The Service anticipates that these flow modifications will enhance OSF habitats at critical life stages, resulting in greater success in feeding, breeding, and sheltering. We also anticipate OSF populations expanding by adding new sites and/or increased numbers of individuals as habitats become more suitable as a result of flow modifications and habitat enhancement projects. These improvements will enhance resiliency and, in the long term, promote recovery of the species in the wild.

In the Upper Deschutes River below Wickiup Dam, the DBHCP will be implemented in three phases: Phase 1 (years 1-7), Phase 2 (years 8-12), and Phase 3 (years 13-30). In all phases of the DBHCP there are annual flow modifications that address life stage-specific habitat needs of OSF. These minimization measures address the adverse effects of the current flow regime by providing water at the time and location necessary to meet OSF life history needs. Specifically, flow increases in spring (April), prior to the irrigation season, are designed to wet-up breeding habitats, making them more suitable and therefore likely to enhance breeding success. Additionally, conservation measures preventing abrupt flow changes during the early rearing period (May-June) are designed to prevent rapid dewatering of wetland habitats when young tadpoles have limited mobility, thus enhancing survival of young tadpoles. Finally, sustaining higher flows later in the irrigation season, and gradually stepping-down flows (instead of dramatically dropping them) gives OSF greater opportunity to successfully move into their overwintering habitats. These measures

will be implemented over the life of the DBHCP and offset the effects of the take by (1) reducing loss of individuals due to dewatered wetlands and (2) increasing breeding success by enhancing breeding habitat conditions, both of which will increase the survival and reproductive success of the OSF.

In the final DBHCP, the Applicants included $150,000 in annual contributions to the Upper Deschutes Conservation Fund. This fund will be held by the Oregon Community Foundation (an Oregon nonprofit corporation), with funds to be distributed to enhance, restore and/or create habitat to benefit the OSF. Projects implemented early in the permit term will address site-specific habitat enhancements and treatment of other threats identified in the OSF final listing rule (79 FR 51658), including control of invasive animals (bullfrogs, brown bullheads, etc.) and removal of invasive plants (e.g., reed canarygrass).

Later in the permit term, as the Applicants begin to provide more instream flows, projects will include site-specific riparian planting, bank restoration, installation of in-channel wood complexes and beaver dams, and multiple other types of habitat restoration, enhancement, and creation projects. These projects will be strategically designed and deployed, in conjunction with the Applicants' water management obligations under the DBHCP, to: (1) expand the overall distribution of populations and increase population viability and abundance of OSF to contribute to the regional recovery of the species, (2) reduce threats to existing populations of the OSF, (3) increase the number of individuals in all age classes at known sites, and (4) increase connectivity between disjunct populations. Below, we discuss how the water management activities and the Upper Deschutes Conservation Fund work together to minimize and mitigate the impacts of the incidental take to the maximum extent practicable.

Upper Deschutes Phase 1

In Phase 1 of the DBHCP (years 1-7), winter minimum flows in the Upper Deschutes will remain at the current 100 cfs minimum level, which the Applicants began implementing as an early conservation measure in 2017. This recent change represents an increase from the last 80 years when winter minimum flows were 20 cfs in the Upper Deschutes River; without the DBHCP, flows could go below the 100 cfs level again. In addition to all of the annual flow modifications discussed above that address life-stage specific habitat enhancements, strategic deployment of the Upper Deschutes Conservation Fund during this phase will be used to implement (1) predator control projects (e.g., bullfrog removal), thus further reducing mortality to the OSF; and (2) removal of encroaching invasive plants to open up and expand suitable habitats for the OSF.

As identified in the OSF listing (79 FR 51658), bullfrogs (non-native in the Pacific NW) pose a significant threat to the OSF. Bullfrogs share similar habitat requirements with

the OSF, and the overlap in time and space between the two species is believed to be extensive (79 FR 51658). Bullfrogs can reach high densities due to the production of large numbers of eggs per breeding female and unpalatability (and high survivorship) of tadpoles to predatory fish. Bullfrog tadpoles outcompete or displace tadpoles of native frog species from their habitat or optimal conditions (79 FR 51658). Control of bullfrogs in Sunriver, Oregon, by private landowners and hired consultants has been underway since 2017 and spotted frog breeding counts rebounded there in 2018 and 2019 (USFWS 2020b). Removing this key predator from OSF habitat is a high priority. Funding of bullfrog removal projects with the Upper Deschutes Conservation Fund beginning in Phase 1 of the DBHCP will reduce predation-induced mortality of the OSF and allow for increased OSF survival and reproduction.

Further, as identified in the OSF listing (79 FR 51658), invasive plants, such as reed canarygrass, may completely change the structure of wetland environments and can create dense areas of vegetation which are unsuitable as OSF habitat (79 FR 51658). Reed canarygrass competitively excludes other native plant species and limits the biological and habitat diversity of host wetland and riparian habitats; it removes large quantities of water through evapotranspiration, potentially affecting shallow groundwater hydrologic characteristics, and dominates large areas of Oregon spotted frog habitat at lower elevations while broadening its range to high-elevation (i.e., above 4,500 feet) OSF habitat in the Little Deschutes and Upper Deschutes River sub-basins in Oregon (79 FR 51658). Expenditures from the Upper Deschutes Conservation Fund, starting in Phase 1, will be used to prevent, control and reduce reed canarygrass in OSF habitats, thus allowing native vegetation to actively (by plantings) or passively (naturally) re-establish making wetland habitats more suitable for the OSF.

These projects, funded by the Upper Deschutes Conservation Fund during Phase 1, will offset the effects of the take by reducing mortality due to predation, thus increasing the numbers of individuals surviving each year; and by increasing habitat suitability, which increases breeding success and thus overall population numbers.

Upper Deschutes Phase 2

Winter flows in the Upper Deschutes River increase in Phase 2 (years 8-12) and the Applicants also begin implementation of the summer caps on high flows. In Phase 2, the minimum winter flow in the Upper Deschutes River will be 300 cfs and the summer maximum is 1,400 cfs. While still below winter unregulated (pre-dam) levels, we anticipate OSF to have a positive response to these flows during multiple parts of their annual life cycle. Increased winter flows during Phase 2 are likely to provide better habitat connectivity between summer and over-wintering habitats, ensuring more OSF will survive the movement period and migrate successfully into their overwintering habitats. Increasing survival for OSF entering the overwintering period increases the likelihood that more OSF adults will successfully overwinter and be part of the breeding population each spring. Increased numbers of adults entering the breeding period is likely to yield a higher number

of egg masses each year, thus enhancing the population. Another benefit of increasing winter flows is more habitat will be available to adult, sub-adult, and juvenile frogs year round, thereby reducing predation pressures and increasing winter survival. Inclusion of the summer cap on maximum flows (with flexibility for some exceedances) will prevent further degradation of the river channel due to sustained erosive forces and also allow wetland vegetation to grow, thus providing suitable OSF habitats closer to the river channel.

Expenditures from the Upper Deschutes Conservation Fund during Phase 2 will (1) continue invasive species removal; (2) initiate habitat improvement projects, including wetland riparian vegetation planting; (3) initiate treatment of encroaching vegetation (cattails, lodgepole, etc.) to maintain suitable open-water OSF habitats; and (4) implement site-specific habitat projects that improve the hydrological function within riverine sloughs and floodplain wetlands. Site-specific installation of habitat features (such as beaver dam analogs) retain water and increase the duration of habitat inundation, which allows OSF to complete their life cycle in water, move between seasonal habits, and evade predators. As maximum summer flow levels in the Deschutes River decrease, water depths in wetland sloughs will decrease, providing an opportunity to strategically enhance OSF breeding habitat with wetland vegetation plantings. Additional wetland vegetation provides cover for young tadpoles, reducing predation.

Overall, effects of the take are offset in Phase 2 by further increasing survival of individuals through (1) improved connectivity between seasonal habitats; (2) enhanced function of wetland habitats through restoration projects; (3) reduction of invasive predators, such as bullfrogs; and (4) reduction of the impact of invasive fish, such as brown trout. Increased winter flows in Phase 2 reduces the area within the river channel and associated slough habitat that is dewatered each year, thus improving OSF survival through the critical overwintering period.

Upper Deschutes Phase 3

Phase 3 of the DBHCP (years 13-30) is the longest phase of the DBHCP and provides for the highest winter flows. During this phase, water levels provide the most overall benefit to breeding, overwintering, and developing OSFs. With minimum winter flows of 400-500 cfs, and a summer cap of 1,200 cfs (with flexibility for some exceedances), we expect there to be year-round benefits for both OSF directly and to OSF habitat.

We anticipate improved OSF survival through the winter period as more wetted area of the riverine channel and associated sloughs allows OSF to escape predatory fish such as brown trout that reside in the river. The continuous wetting of the channel through the winter period is likely to encourage use by riverine mammals, such as beaver and muskrat, which provide denning habitat and other beneficial overwintering microsite features for OSF. Higher winter water levels within the Deschutes River will further shorten the distance that OSF must travel to spring breeding sites from their overwintering habitats, thereby lessening the energy expenditure for OSF and minimizing the predation risk to OSF. We

anticipate improved wetland habitat quality for OSF as summer flows are reduced and vegetation is able to recolonize areas within sloughs that had been overly inundated during the growing season, which inhibits the natural growth of emergent vegetation that provides cover and food resources for OSF during all seasons.

Lower summer flows maintain wetland habitats closer to the river channel, reducing the "sink" effect to OSF that occurs when they utilize habitat during the summer and fall that is then abruptly drained at the onset of the irrigation storage season, resulting in stranding frogs when flows are reduced. Furthermore, the higher winter minimum and lower summer maximum flows lessen the ongoing degradation to the river channel by inundating the roots systems of riparian vegetation and reducing the erosive force that scours the riverbanks. Riverine wetlands that provide cover for dispersing juvenile OSF seeking new areas in which to expand and which function as connectivity corridors between OSF populations are likely to be "passively" (naturally) enhanced via the flow adjustments in Phase 3.

At Phase 3 flow levels, we anticipate the Upper Deschutes Conservation Fund expenditures to support larger habitat projects, including but not limited to river bank restoration, installation of beaver dam analogs and large in-channel wood complexes, and excavation of existing wetlands and oxbows. Restoration efforts during Phase 3 will improve the riparian wetlands that constitute the bulk of OSF breeding habitat, thereby improving the quality of breeding habitat. These larger habitat projects will (1) improve depositional aggradation (sediment accumulation increasing riverbed elevation), which will reduce the cross-sectional area of the channel and thus improve hydrological connectivity between the floodplain/wetland and the river channel; (2) moderate the effects of flow fluctuations that can strand young tadpoles; and (3) intercept base flow and groundwater to provide new habitats for OSF.

The effects of the take are offset in Phase 3 by increasing the survival and reproduction of individuals at multiple sites in the Upper Deschutes River, thus further enhancing the overall resiliency of OSF populations along the Deschutes River. Habitat-degrading flows will be minimized and habitat enhancement projects will be implemented, along with reductions in predation pressure, the combination of all of which will improve the function of existing habitat and provide new and expanded habitats for dispersing OSFs to populate.

Crescent Creek

Conservation measures modifying the flow regime below Crescent Lake Reservoir are likely to enhance OSF populations in the Little Deschutes River sub-basin. Minimum winter flows, and additional volumes of water (5,264 – 12,364 acre-feet per year), will be released in coordination with the Tumalo Irrigation District allowing season-by-season optimization of OSF habitats in the Little Deschutes River by releasing water into OSF habitats when irrigation water would otherwise not be present. Tumalo Irrigation District's releases from Crescent Reservoir only begin when flow levels in Tumalo Creek reach a specified minimum level, and therefore are not reliably present in Crescent Creek in the late

spring and early summer which are important periods for OSF movement and breeding. Releases for the benefit of OSF from the additional volumes above will be timed seasonally to maximize habitat suitability for OSF breeding and rearing. Additional water releases may also be used to extend the irrigation season releases, thus providing connectivity between summer rearing and overwintering habitats and allowing more adult frogs to successfully migrate to their overwintering habitats. Increasing adult survival to and through the overwintering period increases the number of breeding adults each spring, which increases egg masses and therefore frog populations. OSF and habitat monitoring data will further inform these releases, thus optimizing the long-term conservation benefit to the OSF. The effect of the take in Crescent Creek reduces the overall resiliency of the population by reducing the number of individuals surviving low water events. By providing seasonal flow releases timed with the life history needs of the species (breeding, migrating, etc.), the effect of the take in Crescent Creek is offset.

Summary

The DBHCP covered lands within the Upper and Little Deschutes River sub-basins are within the core of the OSF range, and encompass 35 percent of designated OSF critical habitat range-wide. Overall, the effects of DBHCP-covered activities on the OSF, taken together with cumulative effects, when added to the environmental baseline, are expected to improve the resiliency of OSF populations and increase the function of designated OSF critical habitat. Given the large extent of designated critical habitat within the DBHCP covered lands, implementation of the DBHCP is expected to play a significant role in the conservation/recovery of the OSF. Improving the conservation function of critical habitat on these covered lands is essential to meeting the recovery needs of the OSF.

Over the life of the DBHCP, we expect OSF reproduction and survival to increase substantially and measurably due to demographic improvements resulting from DBHCP implementation. These improvements will result from improved breeding habitat, reduced predation, improved survival, and increased OSF access to new breeding areas, and will fully offset the effects of the take identified above.

Bull Trout

Species Background

The coterminous United States population of the bull trout, *Salvelinus confluentus,* was listed as threatened on November 1, 1999 (64 FR 58910). Throughout its range, the bull trout is threatened by the combined effects of: habitat degradation, fragmentation, and alterations associated with dewatering, road construction and maintenance, mining, grazing, the blockage of migratory corridors by dams or other diversion structures, and poor water quality; incidental angler harvest; entrainment (a process by which aquatic organisms are pulled through a diversion or other device) into diversion channels; and introduced non-native species (63 FR 31647; 64 FR 58910). Critical habitat was initially designated in 2005 (70 FR 56211) and revised in 2010 (75 FR 63897). A bull trout recovery plan,

including designation of six recovery units and implementation plans for each, was finalized in 2015 (80 FR 58767).

DBHCP-covered facilities and operations are located within the Coastal Recovery Unit (RU) for the bull trout, which is comprised of 21 core areas. Of the 21 core areas in the Coastal RU, five are described as population strongholds in the 2015 recovery plan (80 FR 58767). The Lower Deschutes River Core Area is the southernmost of these strongholds and overlaps with a majority of the Permit Area, from the confluence of the Deschutes River with the Columbia River upstream to Big Falls at river mile 132, northwest of Redmond. In the RU implementation plan, which describes the threats to the bull trout and the site-specific management actions necessary for recovery of the species within the RU, the Service determined that the Lower Deschutes River Core Area has no primary habitat, demographic, or non-native threats at the metapopulation level (*Ibid*).

The Lower Deschutes River Core Area consists of five local populations, which are all supported by spawning and rearing habitat in subbasins that lie outside of the Permit Area. Two of these populations are found in the Lower Deschutes subbasin and are generally smaller than the populations upstream. Three populations are found in the Metolius River subbasin, and are so abundant and stable that they have been used as a donor stock for re-establishing the Clackamas River population (*Ibid*). Although bull trout can be found in all three major tributaries upstream of the Pelton Hydroelectric Project (i.e., the Metolius, Crooked, and Deschutes rivers and their tributaries), all bull trout in these reaches appear to originate from the Metolius River subbasin since this is the only area where there is evidence of reproduction (Ratliff et al. 1996; Thiesfield et al. 1996). Bull trout from the Metolius populations disperse to habitat in the Permit Area to use for foraging, migration, and overwintering (FMO). Migratory bull trout like those that forage in reaches within the Permit Area usually return to spawn in the Metolius watershed as 5-year-olds. The connectivity between the three Metolius local populations and with FMO habitat in the Permit Area diminishes the risk of extirpation of the bull trout in the Lower Deschutes River Core Area that could result from habitat isolation and fragmentation.

Critical Habitat within the Permit Area is designated as FMO habitat; there is no suitable spawning and rearing habitat within the Permit Area. While essential for the recovery of the species, the habitat requirements for FMO habitat are less stringent than for spawning and rearing habitats because the water quality thresholds for egg incubation and fry emergence are more sensitive than the tolerances of adult and sub-adult fish. Temperature, dissolved oxygen, and fine sediment requirements below the thresholds suitable for adults can reduce egg survival and emergence (USFWS 2015). For example, while adult and sub-adult bull trout begin to experience sub-lethal adverse effects in average water temperatures of 15-16 °C, optimum incubation temperatures for eggs range from 2-4°C and optimum water temperatures for rearing range from about 7-8°C (*Ibid*.).

In 2019, fish passage was fully restored in the Crooked River sub-basin with the construction of a fish passage facility at Opal Springs on river mile 0.6 upstream of Lake

Billy Chinook. Bull trout now have restored access to the full Crooked River sub-basin for the first time since 1982.

Estimated Amount of Take

Based on the analysis and results presented in the Biological Opinion, the requested permit action is expected to result in incidental take of the bull trout in the form of harm as a result of altered habitat conditions (including temperature exceedances, suitable habitat alteration due to low flows and total dissolved gas exposure) that significantly disrupts bull trout breeding, feeding, and sheltering. Take is quantified by using various surrogates, which were a combination of miles affected over a period of days. (Table 2). The quantified take is listed in Table 2 and described in detail in the Service's Biological Opinion (USFWS 2020b).

Table 2. Annual Take Quantification for Bull Trout

Affected Reach	**Project Element/Activity resulting in temperatures >16°C (sublethal) and >23°C (lethal)**	**Waterbody**		**Activity Season/dates**	**Operators**	**Incidental Take (river miles affected)**	
						Sublethal	**Lethal**
Crooked River subbasin	Release of contracted storage from Prineville Reservoir/ Diversion as instream flow	Crooked River	OID diversion to CAPO gauge	Irrigation season April 1 - October 15 (197 days)	BOR, OID, NUID	9.2 miles for 197 days	
			CAPO to NUID pumps			24.3 miles for 197 days	
			NUID pumps to Osborne Canyon			15.1 miles for 197 days	
Whychus Creek	Diversion	Whychus Creek		April 12 - October 12 (121 days sublethal, 33 days lethal)	TSID	20 miles for 121 days	4.5 miles for 33 days

BOR = Bureau of Reclamation; NUID = North Unit Irrigation District; OID = Ochoco Irrigation District; TSID = Three Sisters Irrigation District; CAPO = flow monitoring gauge on the Crooked River.

Summary of Effects of the Action on the Bull Trout

The effect of the take quantified above on the Lower Deschutes River Core Area populations of bull trout is (1) reduced habitat suitability, primarily due to increased instream temperatures that result from low flows and (2) reduced extent of foraging opportunity due to physically reduced habitat availability, also resulting from flow reductions. While significant to the individual bull trout experiencing these effects, the impact of flow changes from DBHCP activities to bull trout at the population level in the Basin or across the species' range are relatively minimal. Because the breeding populations of the Lower Deschutes River Cover Area are so robust and supported by breeding habitat outside of the Permit Area for continued propagation under current conditions (see *Species Background*), effects to individual fish foraging and migrating in the Permit Area will have limited effect, positive or negative, on the overall conservation and recovery of the species.

The DBHCP's winter flow requirements in the Crooked River will enhance FMO habitat for the bull trout by providing minimum flows when no other water is available. Providing non-irrigation season flows will provide more balance to a system that has had a "discharge regime to be opposite of that historically encountered." (ODFW 2016). Enhancing habitat conditions for the bull trout in the winter will provide the population with enhanced resiliency by increasing habitat availability and foraging opportunities that promote dispersal, thus supporting recovery. Summer (irrigation season) by-pass flows at the North Unit Irrigation District's pumps are likely to ensure minimum flows in the lower reaches of the Crooked River. This is a known low-flow reach adjacent to the last irrigation diversion on the Crooked River, therefore these higher flows are likely to provide for important habitat enhancement. Downstream of this last diversion, large spring-fed cold water inputs enter the Crooked River, enhancing flows to its terminus in Lake Billy Chinook and diluting impacts of DBHCP activities upstream to discountable levels.

Additional conservation measures requiring fish screen maintenance and enhanced flows in Ochoco and McKay Creeks are likely to reduce threats to individual sub-adult bull trout caused by fish entrainment, and to provide additional flows for the species when irrigation water is not present. Collectively, the conservation strategy for the Crooked River sub-basin under the DBHCP is to enhance habitat availability and quality, and to reduce the threat of bull trout entrainment.

Conservation measures implemented in the Upper Deschutes Basin for the OSF provide additional flow that passes to the Middle and Lower Deschutes River segments. While large spring inputs below Bend also enhance these habitats and dilute impacts of upstream irrigation management activities, winter flow increases will provide modest increases in flows that can further reduce temperatures, thus improving the quality of bull trout habitat in these reaches.

Conservation measures in Whychus Creek establish minimum flows resulting from a complete modernization of the Three Sisters Irrigation District system. A system-wide district piping effort was completed over the course of the 12-year development of the HCP,

with 31.18 cfs of water permanently protected instream (and senior water rights that are converted to permanent instream flow in the future will be added to this minimum). While Whychus Creek still experiences extended periods of summer water temperatures that exceed the threshold suitable for bull trout even with the newly established minimum flow, continued flow enhancements, restoration projects, and in-stream leasing are all likely to enhance historically degraded habitats in Whychus Creek for the bull trout by lowering water temperatures and increasing foraging opportunities.

Take of the bull trout may occur through impairment of normal foraging and migratory behaviors associated with increases in stream temperature that result from instream flows reductions. Although we anticipate some take, flow reductions and temperature increases as a result of implementation of the DBHCP are not expected to affect bull trout survival and recovery because the covered lands in the Permit Area are used seasonally by mobile bull trout life stages (adult and sub-adult) that have less sensitive or less restrictive habitat requirements than younger life stages and have the ability to avoid unsuitable habitat conditions. Because these individual adult and sub-adult bull found in the Permit Area come from populations supported by breeding habitat outside of the Permit Area for continued propagation under current conditions, effects to individual fish foraging and migrating in the Permit Area will have limited effect on the overall conservation and recovery of the species within the Basin.

Summary

In total, the effects of DBHCP-covered activities on the bull trout, taken together with cumulative effects, when added to the environmental baseline, are expected to maintain or improve slightly the resiliency of bull trout populations and maintain or slightly improve the function of designated bull trout critical habitat, thus fully offsetting the effects of the take caused by implementation of the DBHCP.

Overall, the conservation strategy for bull trout fully offsets the effects of the take caused by the action by: (1) increasing winter minimum flows in the Crooked River compared to without the DBHCP, thus increasing foraging opportunities by enhancing the extent and quality of existing habitat conditions; (2) increasing summer flows in the Crooked River by reducing diversions, which increases habitat availability for foraging in segments of the Crooked River;(3) increasing flows and enhancing habitat in Whychus Creek that increases the extent and quality of existing degraded habitat conditions available for foraging; and (4) maintenance of fish screens to prevent entrainment of individual sub-adult bull trout.

III. Public Involvement

The Service made diligent efforts to involve the public by making the applicants' DBHCP and the associated EIS available for review and comment. We published a notice of intent (NOI) in the *Federal Register* to prepare an EIS on July 24, 2017, with a request for comments on important issues and alternatives that should be considered (82 FR 34326). Four public scoping meetings were held; two in Madras, Oregon on August 14, 2017 and

two in Bend, Oregon on August 15, 2017. Fifty-five comment letters were received from State and Federal agencies, local governments, stakeholders and non-profit or community organizations. A scoping report was prepared and is included as Appendix 1-C of the final EIS (USFWS, 2020c).

A notice of availability (NOA) for the draft EIS with a request for review and comment was published on October 4, 2019 (84 FR 53164), and an extension of the comment period on October 29, 2019 (84 FR 58169) for a total 60-day public comment period closing on December 3, 2019. Two public open-house meetings were held during the comment period in Bend, Oregon and Prineville, Oregon on October 15, 2019 and October 16, 2019, respectively. Sixteen hundred and eleven (1611) comments were received on the draft EIS and draft DBHCP from members of the general public, interest groups, and public agencies, and are appended to the final EIS as Appendix 1-E with responses to comments.

An NOA for the final EIS and final DBHCP was published on November 6, 2020 (85 FR 71086). The NOAs described the proposed Federal action (i.e., issuance of an ITP) and the purpose and need for the action. Copies of the documents were available for public inspection during regular business hours and were posted to our website (https://www.fws.gov/Oregonfwo/articles.cfm?id=149489716). Three comments were received on the final EIS and final DBHCP, one from the U.S. Environmental Protection Agency and two from non-governmental organizations. Responses to comments submitted on the final EIS and final DBHCP are attached to the Record of Decision, as Attachment 2.

IV. Incidental Take Permit Criteria - Analysis and Findings

Endangered Species Act

Section 10(a)(2)(A) of the ESA specifically mandates that "no Permit may be issued by the Secretary authorizing any taking referred to in paragraph (1)(B) unless the Permittee therefore submits to the Secretary a conservation plan that specifies- (i) the impact which will likely result from such taking; (ii) what steps the Permit will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps; (iii) what alternative actions to such taking the Permittee considered and the reasons why such alternatives are not being utilized; and (iv) such other measures as the Secretary may require as being necessary or appropriate for the purposes of the plan."

Section 10(a)(2)(B) of the ESA mandates that the Secretary shall issue a Permit if he finds:

> "..after opportunity for public comment, with respect to a Permit application and the related conservation plan that - (i) the taking will be incidental; (ii) the Permittee will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (iii) the Permittee will assure that adequate funding for the plan will be provided; (iv) the taking will not appreciably reduce the likelihood of survival and recovery of species in the wild; and (v) the measures, if any, required under

subparagraph (A)(iv) will be met; and he has received such other assurances as he may require that the plan will be implemented... "

In accordance with 16 U.S.C. § 1539(a)(2)(B), the Service makes the following findings:

1. The taking will be incidental.

We determined, based on the information provided by the Applicants that the covered activities described in the DBHCP are lawful activities. Any take resulting from engaging in these covered activities described in the DBHCP will be incidental to, and not the purpose of, the covered activities. Therefore, we find that the taking of covered species that may occur as a result of the covered activities will be incidental to otherwise lawful activities.

2. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.

In the final DBHCP, the Applicants committed to implement a variety of conservation measures intended to minimize and mitigate the impacts of incidental taking of the covered species that may result from the covered activities (DBHCP Conservation Program, Chapter 6). Conservation measures to minimize adverse effects to the covered species under the DBHCP include modifying the timing and volumes of flow releases from the covered reservoirs, modifying the timing and volume of diversions from natural waterbodies, supporting on-farm water conservation programs, and maintaining and upgrading fish screens at diversion structures. Conservation measures to mitigate the adverse effects to the covered species include providing additional water releases from the covered reservoirs to enhance habitat for the covered species and providing conservation funding to support projects that enhance, restore or create habitat for the covered species, and providing funding to support in-stream water leasing programs. These measures and their effects on the covered species have been described in detail above in the Analysis of Effects section.

Oregon spotted frog

Implementation of the DBHCP's flow modifications in the Upper Deschutes Basin are likely to provide water consistent with the life history needs of the OSF. Implementing conservation measures that ensure Crane Prairie Reservoir's water elevation is optimized for OSF breeding in the spring reduces take that would otherwise occur due to unsuitable breeding habitat conditions, stranding, desiccation and predation. Conservation measures requiring spring and summer rearing period stabilization of Crane Prairie Reservoir levels will reduce OSF mortality (i.e., take) by preventing rapid draw-downs (irrigation releases) that strand OSF tadpoles and leave all life stages susceptible to predation. Conservation measures reducing overall irrigation water withdrawals will leave the reservoir at higher levels at all times of the year, thus enhancing connectivity between seasonal habitats and reducing take of individual OSFs. The conservation strategy for Crane Prairie Reservoir provides an overall conservation benefit, beyond fully offsetting the impacts described above to the OSF by minimizing take and enhancing survival and reproduction.

Conservation measures requiring flow modifications out of Wickiup Reservoir are also designed to align water management activities with the life history needs of the OSF. Winter flow increases and summer decreases over the life of the DBHCP are designed to more closely mimic the natural hydrology of the Upper Deschutes River. Winter flow increases from the historical 20 cubic feet per second (cfs) to the current 100 cfs, and future increases to 300 cfs (by year 8) and 400-500 cfs (by year 13) will provide better connectivity for OSF between summer rearing habitats with over-wintering habitats. Increasing winter flows will also benefit the entire aquatic ecosystem, specifically beaver and muskrat populations, which modify wetland and riverine habitats and create niches for the OSF to shelter and over-wintering. Annual spring, summer and fall season flow modifications out of Wickiup Reservoir during the irrigation season will also enhance OSF life-stages and maintain wetted habitat during frog movement periods. Specifically early April flows in the Upper Deschutes will wet-up adjacent wetland habitats, providing shallow, warm water locations where OSF can successfully breed in close proximity to wetland vegetation and cover. Flow modifications that reduce rapid changes in water surface elevations will reduce stranding of young tadpoles. Maintenance of specific flow levels downstream of Wickiup Dam (at the BENO gauge) later in the summer is likely to ensure that flows will be sustained to provide the opportunity for OSF to initiate and travel to their over-wintering habitats. Providing more stability in flows and connectivity between seasonal habitats for the OSF in the 60-mile stretch of the Upper Deschutes River are likely to reduce (i.e., minimize) OSF life-stage-specific mortality events, thus enhancing and improving resiliency of OSF populations. The conservation strategy for the Upper Deschutes River from Wickiup Reservoir to Bend improves the functionality and connectivity of the wetland habitats adjacent to the river improve over time, thus minimizing take while still allowing delivery of irrigation water. In combination with the Upper Deschutes Conservation Fund, we anticipate the effects of the take to be fully offset in the Upper Deschutes River between Wickiup Reservoir and Bend, Oregon.

Minimization and mitigation measures below Crescent Reservoir are likely to offset the effect of the take by providing flows to support OSF-rearing and movement periods, when limited irrigation supply would otherwise be present. OSF and habitat monitoring data will further inform these releases, thus optimizing the long-term conservation benefit to the OSF. The conservation strategy below Crescent Reservoir fully offsets the effect of the take and enhances survival and reproduction of the OSF.

Mitigation projects funded by the Upper Deschutes Conservation Fund will be strategically deployed to reduce take by removing predators (bullfrogs) and enhancing habitats (removal of invasive reed canarygrass, installation of beaver dam analogs, wood placement, excavating oxbows, etc.). In the Biological Opinion, the Service identified the potential costs of projects proposed for the funding via the Upper Deschutes Conservation Fund. Multiple, early-year funding scenarios were considered, each providing sufficient funds to strategically target priority areas to mitigate the effects of take caused by the ongoing water management activities. The Upper Deschutes

Conservation Fund's expenditures provide mitigation for take not fully offset by the conservation strategies described above. Reducing direct lethal threats to the OSF by removing predators increases the OSF population allowing for increased numbers to benefit from the habitat improvements delivered by the water management conservation strategies above. Site-specific physical habitat improvements, commensurate with flow increases together provide the OSF with the suitable habitats needed to enhance survival and recovery. Projects implemented via the Upper Deschutes Conservation Fund will further offset any residual effects of the take not fully mitigated elsewhere. Thus, the DBCHP will fully offset the effects of the incidental take on OSF.

Bull Trout

Mitigation measures for the bull trout in the DBHCP protect foraging habitat by providing minimum winter flows in the Crooked River sub-basin where bull trout have recently gained access due to removal of the Opal Springs blockage (when other water is not available). Winter flow releases in the Upper Deschutes Basin provide modest beneficial habitat improvements in the Middle and Lower Deschutes River, thus further enhancing foraging opportunities. Minimization measures reducing irrigation season diversions provides instream flows to maintain habitat suitability and reduce water temperatures, thus enhancing FMO habitat for the bull trout. Coordination of winter diversions (for livestock) will help maintain more stable year-round flows, contributing to this enhancement effect. Mitigation measures in Whychus Creek establish minimum irrigation season flows and promote habitat conservation and restoration activities to improve the extent and quality of historically degraded foraging habitat for bull trout.

The DBHCP covered lands within the Coastal Recovery Unit provide FMO habitat for the Lower Deschutes River Core Area local populations of bull trout. Given the role of bull trout critical habitat within the DBHCP covered lands as foraging, migration, and overwinter habitat for individual fish that have dispersed from populations supported by subbasins outside of the covered lands, implementation of the DBHCP is expected to have a relatively minimal influence on the conservation and recovery of the bull trout. What adverse effects of take that are anticipated to result from DBHCP implementation are expected to be fully offset by the habitat improvements that will result from the increased minimum flows and reduced seasonal flow variations described above. Improving the extent and quality of habitat conditions in the Basin from existing degraded conditions will offset the effect of take expected in the Crooked River subbasin and Whychus Creek. These mitigation and minimization measures will maintain the essential function of critical habitat on covered lands in meeting the range-wide recovery needs of the bull trout.

Conclusion

The DBHCP describes biological goals and objectives, and establishes species-specific prescriptions for operation and maintenance of the covered facilities. The conservation measures include measurable targets and associated monitoring intended to ensure that compliance with the DBHCP and the effectiveness of these measures are maintained over time.

An adaptive management plan identifies the procedures the Applicants will follow to monitor, adjust, and improve the effectiveness of ongoing operation and maintenance of the covered facilities in a manner that avoids and minimizes adverse effects to the covered species to the maximum extent practicable. The Applicants have included provisions for reasonably foreseeable changed circumstances (DBHCP, Ch. 10). These strategies ensure that the effects of potential taking resulting from changed circumstances will also be minimized and mitigated to the maximum extent practicable.

In summary, the Service finds that the minimization measures and the associated monitoring and adaptive management strategies described in the final DBHCP are likely to reduce the amount of incidental take of the covered species. The mitigation measures are likely to rectify, reduce, and compensate for unavoidable take by strategically reducing the extent of existing threats by providing additional volumes of water to support the covered species, and fund projects to directly reduce threats to the covered species and restore, enhance and create habitat for the covered species. We find that the proposed mitigation in the DBHCP is commensurate with the effects of the level of take anticipated over the duration of the ITP and will offset anticipated impacts of the taking on the species due to measurable improvements in aquatic habitat quality and function that align with the life history requirements of the species, especially when compared to current baseline.

For the reasons discussed above and in the Analysis of Effects section, we find that the conservation program in the DBHCP will fully offset the impact of the taking of the covered species, and thus will minimize and mitigate the impacts of the taking of the covered species to the maximum extent practicable.

3. The applicant will ensure that adequate funding for the conservation plan and procedures to deal with changed circumstances will be provided.

The Applicants include eight irrigation districts and the City of Prineville. All eight districts are quasi-municipal corporations formed and operated according to Oregon law to distribute water to irrigators (patrons) within designated geographic boundaries in accordance with the individual water rights appurtenant to the lands of those patrons. Prineville is an incorporated city and the county seat for Crook County, Oregon. It operates City-owned infrastructure and provides essential services, including public safety, municipal water supply, and sewage treatment to more than 9,000 residents.

The DBHCP will be implemented by the eight irrigation districts and the City of Prineville. Each will have separate and distinct responsibilities for DBHCP implementation, as specified in Chapter 3, Table 3-9, and detailed further in the Inter-district Coordination Agreement by and among the Permittees (see Appendix B-1 of the DBHCP). Consequently, the costs and funding for implementing the DBHCP are determined separately for each entity. The nine Applicants are separate legal entities with fiduciary responsibilities to their patrons or citizens. Each Permittee will be responsible for ensuring adequate funding for its respective requirements under the DBHCP, and each Permittee is

precluded by Oregon law from assuming financial responsibility for the requirements of other Permittees.

All districts will fund their DBHCP implementation and monitoring costs using existing resources and/or by increasing patron assessments or incurred charges as necessary, as authorized by Oregon law (See ORS 545.381, 545.482). The City will fund DBHCP implementation within its existing annual budget, consistent with the City's powers under its general charter (See City of Prineville Charter, Section 4).

Based on available information, these funding mechanisms meet ESA Section 10 funding assurance requirements the Applicants have demonstrated they have mechanisms to raise the funding necessary to implement the measures that they have committed to in the DBHCP. In view of the foregoing, we find that the Applicants have provided sufficient assurances that it will provide funding to implement the measures described in the DBHCP.

The Service's "no surprises" assurances and measures to address changed circumstances are described in the DBHCP. The Applicants have committed to an adaptive management process that will modify monitoring, conservation, mitigation, or management measures as needed throughout the term of the proposed ITP (DBHCP, Chapter 7). Unforeseen circumstances will be addressed through close coordination between the Service and the Applicants (DBHCP, Chapter 9). We have determined, therefore, that the Applicants' conservation plan and financial commitments, along with their proposal to address changed and unforeseen circumstances in a cooperative fashion, satisfies this criterion.

4. The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

The legislative history of the ESA establishes the intent of Congress that this issuance criteria be based on a finding of "not likely to jeopardize" under Section 7(a)(2) (see 50 CFR 402.02). As a result, issuance of the ITP has been reviewed by the Service under Section 7 of the ESA.

Our Biological Opinion concluded that issuance of the ITP will not jeopardize the continued existence of the OSF in the wild, because (1) improvements to OSF habitat at Crane Prairie Reservoir are likely to increase survival and reproduction of all life stages of spotted frogs in Crane Prairie Reservoir; (2) improvements to OSF habitats below Wickiup Dam are likely to increase survival and reproduction of all life stages within the Upper Deschutes River sub-basin; (3) these demographic improvements are likely to result in colonization/occupation of currently unoccupied habitats within the Upper Deschutes River sub-basin (4) increased fall and winter flows from Crescent Lake in the Little Deschutes River sub-basin are likely to increase spotted frog survival and reproduction within habitat along Crescent Creek by extending the period of time in which spotted frog habitat is inundated; and (5) expenditures from the Upper Deschutes Conservation Fund are likely to strategically reduce threats to OSF survival and enhance its recovery. We do not expect that approval of the proposed permit action would preclude OSF survival and recovery in the

action area or any larger scale area within the range of the OSF for the reasons presented above.

Our Biological Opinion also concluded that issuance of the ITP will not jeopardize the continued existence of the bull trout in the wild because: (1) the covered activities overlap with the Lower Deschutes River Core Area, which the Service determined has no primary habitat, demographic, or non-native threats at the metapopulation level; (2) bull trout that use habitat in the Permit Area for foraging, migration, and overwintering have dispersed from robust local populations that rely on breeding habitat in subbasins outside of the covered lands for continued propagation; (3) connectivity between these local populations and with FMO habitat in the Permit Area diminishes the risk of extirpation of the species in the core area that could result from habitat isolation and fragmentation; (5) increased instream flows in the Crooked River, Deschutes River, and Whychus Creek will benefit bull trout by increasing foraging opportunity from improved extent and quality of available FMO habitat; and (6) spawning and rearing does not occur within the Permit Area; the covered lands are used by bull trout life stages (adult and sub-adult) that have less sensitive or less restrictive habitat requirements than for successful egg survival and emergence. We do not expect that approval of the proposed permit action would preclude bull trout survival and recovery in the Permit Area or any larger scale area within the range of the bull trout for the reasons presented above.

5. Other measures, required by the Director of the Service as necessary or appropriate for purposes of the HCP, will be met.

The DBHCP incorporates all other elements determined by the Service to be necessary for approval of the DBHCP and issuance of the ITP. The Service assisted the Applicants in developing their DBHCP, commented on draft documents, participated in numerous meetings and conference calls, and worked closely with the Applicants throughout the planning and document preparation phases of the proposal to ensure that the conservation needs of the covered species would be assured and that their survival and recovery would not be precluded by the covered activities. The DBHCP adequately incorporates our recommendations for minimization and mitigation of impacts, as well as steps to monitor the effects of the DBHCP and ensure success of the DBHCP conservation program. The Applicants will submit annual reports to the Service throughout the term of the ITP describing implementation of avoidance, monitoring, minimization, and mitigation measures as described in the DBHCP. Coordination measures have been designed to ensure that changes in conservation measures can be implemented if proposed measures prove ineffective (through adaptive management measures) or if changed circumstances occur over the duration of the ITP.

We find that the Conservation Strategy described in Chapters 3 and 6 of the final DBHCP is complete and no additional measures are required to implement the intent and purpose of the DBHCP or meet the issuance criteria of the associated ITP. Considerations in this decision include: (1) that minimization measures are likely to reduce the amount of take of the covered species; and (2) that mitigation measures for the covered species are will fully

offset anticipated impacts of the taking on the covered species and will complement other recovery opportunities.

6. The Service has received the necessary assurances that the HCP will be implemented.

The Service finds that, as described in the DBHCP, the Applicants have committed to implementing the mitigation, monitoring, and reporting requirements. Any ITP issued in this matter would only be effective when the mitigation measures have been carried out in accordance with the special conditions of the ITP. Failure to perform the obligations outlined by the conditions of the ITP shall be grounds for suspension or revocation of the ITP. Upon receipt and acceptance of the ITP, the Applicants are bound to fully implement the provisions of the DBHCP.

V. General Criteria and Disqualifying Factors

The Service has no evidence that the requested ITP should be denied on the basis of the criteria and conditions set forth in 50 CFR 13.21(b) - (c). The Applicants have met the criteria for the issuance of the ITP and there are no disqualifying factors that would prevent the ITP from being issued under current regulations.

VI. Recommendation on Permit Issuance

Based on the foregoing findings with respect to the proposed action, I recommend approval of the issuance of permit number TE89773D-0 to the Arnold Irrigation District, Central Oregon Irrigation District, Lone Pine Irrigation District, North Unit Irrigation District, Ochoco Irrigation District, Swalley Irrigation District, Three Sisters Irrigation District, Tumalo Irrigation District and the City of Prineville authorizing incidental taking of the threatened Oregon spotted frog and the threatened bull trout in accordance with the DBHCP.

Robyn Thorson

December 31, 2020

Robyn Thorson
Regional Director,
U.S. Fish and Wildlife Service

Date

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