UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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Refer to NMFS No.:
WCRO-2023-00554

January 19, 2024

Adam Merrill
Environmental Protection Specialist
US Department of Transportation, Federal Aviation Administration
2200 S. 216th Street
Seattle, Washington 98198

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Lebanon State Airport Taxi Rehabilitation Project, Lower Calapooia River (5th field HUC No.: 1709000304), Linn County, Lebanon, Oregon

Dear Mr. Merrill:

This letter responds to your April 28, 2023, request for initiation of consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the subject action. Your request qualified for our expedited review and analysis because it met our screening criteria and contained all required information on, and analysis of, your proposed action and its potential effects to listed species and designated critical habitat.

We reviewed the FAA's consultation request and related initiation package. Where relevant, we have adopted the information and analyses provided and/or referenced in the *Lebanon State Airport Taxiway Rehabilitation Biological Assessment for National Marine Fisheries Service Species* (David Evans and Associates, Inc 2023) and the *Stormwater Drainage Memo* (Century West Engineering 2023) but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards.

We adopt by reference the following sections of the Biological Assessment and other components of the initiation package:

- Section 1 *Introduction* including authority and purpose of the proposed action
- Section 2 *Project Description, and Appendices* including the *Stormwater Drainage memo* (Century West Engineering 2023) including description of the proposed action, stormwater management, and proposed conservation measures
- Section 3 *Project and Action Areas* and *Appendix A* including description of the action area
- Section 4 *Status of Species and Critical Habitat* for identification of ESA-listed species and designated critical habitat in the action area
- Section 5 *Environmental Baseline* for the Calapooia River watershed
- Section 6 *Effects of the Action* including direct and indirect effects on ESA-listed species and designated critical habitat

Additionally, we note where we have supplemented information in the initiation package with our own data and analysis.

Technical assistance/pre-consultation activities began on April 28, 2023, when NMFS received a request for informal consultation on the proposed action. On June 5, 2023, NMFS responded with a letter stating non-concurrence with FAA's effect determinations for ESA-listed species and designated critical habitat. NMFS also stated that the Pacific Coast groundfish component of essential fish habitat (EFH) should be included in the Magnuson-Stevens Fishery Conservation and Management Act (MSA) consultation.

On June 13, 2003, NMFS received a memo from David Evans and Associates, Inc., amending the March 2023 biological assessment by updating the effect determinations for 15 ESA-listed Columbia and Willamette River species and critical habitat and requesting formal consultation. The memo also added groundfish to the MSA EFH section of the biological assessment; however, the effects determination for EFH was not modified.

On September 25, 2003, NMFS sent an email to FAA indicating that although we had received the June 13, 2023 memo, FAA had not provided any new analysis in the biological assessment and listed several items, including a post-construction stormwater management plan, that would be necessary for us to proceed with a condensed biological opinion. FAA, NMFS, and consultants attended a video call on October 5, 2023, for brief discussion about the listed items. Following the meeting, NMFS asked a few additional questions about the project description which were answered on October 16, 2023. A revised biological assessment was provided to NMFS for review on October 16, 2023, via an ftp site. On December 1, 2023, NMFS noted two edits for the biological assessment and also requested that the February 2023 stormwater drainage memo be included when FAA provided the final submission packet. The FAA submitted a final packet to NMFS on December 22, 2023. On December 27, 2023, NMFS notified the FAA that sufficient information was received. Consultation was initiated on December 22, 2023.

On July 5, 2022, the U.S. District Court for the Northern District of California issued an order vacating the 2019 regulations that were revised or added to 50 CFR part 402 in 2019 ("2019 Regulations," see 84 FR 44976, August 27, 2019) without making a finding on the merits. On September 21, 2022, the U.S. Court of Appeals for the Ninth Circuit granted a temporary stay of the district court's July 5 order. On November 14, 2022, the Northern District of California issued an order granting the government's request for voluntary remand without vacating the 2019 regulations. The District Court issued a slightly amended order two days later on November 16, 2022. As a result, the 2019 regulations remain in effect, and we are applying the 2019 regulations here. For purposes of this consultation and in an abundance of caution, we considered whether the substantive analysis and conclusions articulated in the biological opinion and incidental take statement would be any different under the pre-2019 regulations. We have determined that our analysis and conclusions would not be any different.

FAA proposes to provide funding to the Oregon Department of Aviation (ODAV) to make several taxiway realignments, runway run-up apron improvements, and other infrastructure improvements at the Lebanon State Airport (Airport; Figure 1) to comply with FAA design and safety standards. ODAV would remove 1.59 acres of existing pavement, construct 2.0 acres of new pavement, and rehabilitate 1.87 acres of existing pavement. There would be an overall increase of 0.41 acre of impervious surfaces. The proposed action would not increase the amount of air or vehicle traffic on the airport (David Evans and Associates, Inc 2023). ODAV would also construct 1.13 acres of vegetated filter strips around the perimeter of new and rehabilitated impervious surfaces and widen existing vegetated ditches or construct them where none exist. The vegetated filter strips would be a minimum of 5 feet wide and sloped at 5% maximum (per FAA grading standards), with 3.5 inches of medium compost incorporated into 14.5 inches of topsoil, and planted with grasses and ground-covering vegetation. ODAV would design and construct the vegetated filter strips to provide a treatment capacity equivalent to 50% of a 2-year 24-hour storm event. When treated runoff leaves the filter strips it would flow overland, or via catch basins, to existing on-site vegetated stormwater ditches. New ditches would be constructed to have a flat channel bottom (8-foot minimum), 4:1 side slopes, depths from 1.0 to 2.0 feet, and a 2-inch topsoil layer seeded with native grasses. ODAV used the U.S. Environmental Protection Agency Storm Water Management Model to confirm widened and new stormwater ditches would provide detention, infiltration, and flow control with sufficient capacity for 2-year and 10-year storm events. Runoff would outlet from the airport ditches into roadside ditches and into Little Oak Creek and Oak Creek. Maintenance of the stormwater facilities will be performed by ODAV staff on a seasonal basis. Approximately 2.79 acres of seasonally-saturated palustrine emergent wetlands would be impacted by construction. All construction and ground disturbance would be limited to 10.76 acres at the airport. A detailed description of construction elements, equipment, and conservation measures can be found in the biological assessment (David Evans and Associates, Inc 2023).

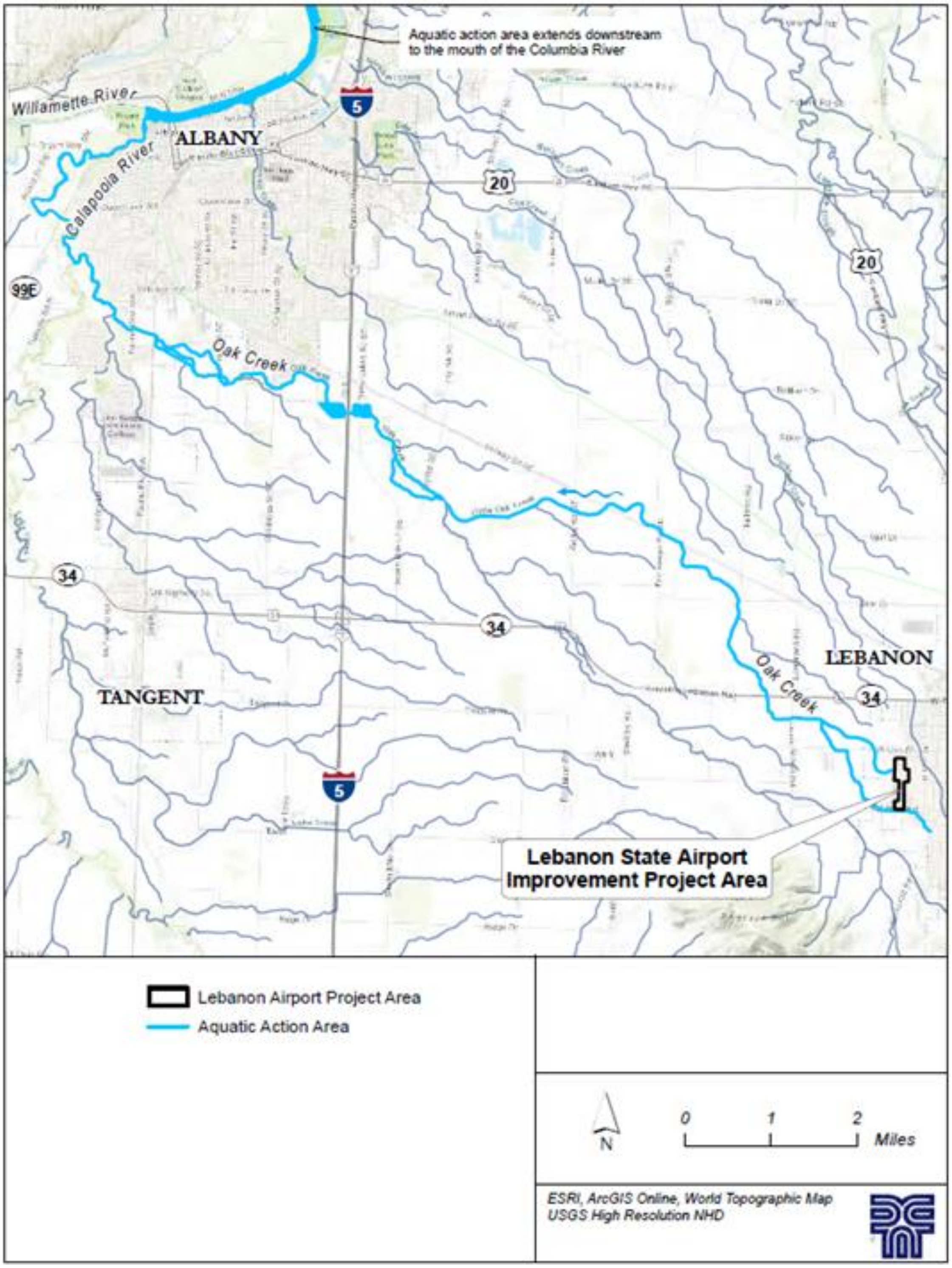

Figure 1. Project location and action area (David Evans and Associates, Inc 2023). Oak Creek is a tributary to the Calapooia River which drains to the Willamette River, the Lower Columbia River, and the Pacific Ocean. The extent of the action area was determined based on the extent of effects from the dispersion of pollutants associated with treated stormwater discharge.

We examined the status of each species that would be adversely affected by the proposed action to inform the description of the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. We also examined the condition of critical habitat throughout the designated area and discuss the function of the physical or biological features essential to the conservation of the species that create the conservation value of that habitat.

Section 4 of the biological assessment, *Status of Species and Critical Habitat,* identifies the listed species and designated critical habitat potentially affected by the proposed action. However, the biological assessment did not provide the status of species or critical habitat so we are providing that information here (Ford 2022, ODFW & NMFS 2011, NMFS 2009a, NMFS 2013, NMFS 2015a, NMFS 2016, NMFS 2017a-c, NMFS 2018, NMFS 2021, NMFS 2022a-h, Upper Columbia Salmon Recovery Board 2007) and we concur with the listed species and designated critical habitats which may be adversely affected, which include those listed in Table 1.

Table 1. Status of ESA-listed species and designated critical habitat analyzed in this opinion, CH = critical habitat.

ESA-Listed Species	Status	ESA-Listed Species	Status
Lower Columbia River Chinook salmon[1,2] (*Oncorhynchus tshawytscha*)	Threatened 6/28/05 CH 09/02/05	Upper Columbia River steelhead[6,2] (*O. mykiss*)	Threatened 1/5/06 CH 09/02/05
Upper Columbia River spring-run Chinook salmon[1,2] (*O. tshawytscha*)	Endangered 6/28/05 CH 09/02/05	Lower Columbia River steelhead[6,2] (*O. mykiss*)	Threatened 1/5/06 CH 09/02/05
Snake River spring/summer-run Chinook salmon[1,3] (*O. tshawytscha*)	Threatened 6/28/05 CH 10/25/99	Upper Willamette River steelhead[6,2] (*O. mykiss*)	Threatened 1/5/06 CH 09/02/05
Upper Willamette River Chinook salmon[1,2] (*O. tshawytscha*)	Threatened 6/28/05 CH 09/02/05	Middle Columbia River steelhead[6,2] (*O. mykiss*)	Threatened 1/5/06 CH 09/02/05
Snake River fall-run Chinook salmon[1,4] (*O. tshawytscha*)	Threatened 6/28/05 CH 12/28/93	Snake River basin steelhead[6,2] (*O. mykiss*)	Threatened 1/5/06 CH 09/02/05
Columbia River chum salmon[1,2] (*O. keta*)	Threatened 6/28/05 CH 09/02/05	Southern DPS of green sturgeon[7,8] (*Acipenser medirostris*)	Threatened 4/7/06 CH 10/09/09
Lower Columbia River coho salmon[1,5] (*O. kisutch*)	Threatened 6/28/05 CH 02/24/16	Southern DPS of eulachon[9,10] *(Thaleichthys pacificus)*	Threatened 3/18/10 CH 10/20/11
Snake River sockeye salmon[1,4] *(O. nerka)*	Endangered 6/28/05 CH 12/28/93		
[1] 70 FR 37160; [2] 70 FR 52630; [3] 64 FR 57399; [4] 58 FR 68543 [5] 81 FR 9251; [6] 71 FR 834; [7] 71 FR 17757; [8] 74 FR 52300; [9] 75 FR 13012; [10] 76 FR 65324			

There are no ESA-listed fish species or designated critical habitat on the airport property or in Oak Creek or Little Oak Creek. Upper Willamette River (UWR) Chinook salmon, UWR steelhead, and designated critical habitat are approximately 11 miles downstream in the Calapooia River (NMFS 2022i.) The Calapooia River population of UWR Chinook salmon may be functionally extinct and is no longer surveyed for presence or abundance data (Ford 2022). Steelhead in the Calapooia River are part of the Cascade Tributaries stratum for UWR winter steelhead and is not a core population (ODFW & NMFS 2011). The remainder of the species and critical habitat listed in Table 1 are present in the Willamette River downstream of Willamette Falls and/or in the Lower Columbia River.

"Action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Section 3 of the biological assessment, *Project and Action Areas*, along with the Figures in *Appendix A*, describe the limits of construction at the airport and the action area which extends downstream of the airport (Figure 1). Due to the persistent nature of stormwater pollutants in the aquatic environment and the ability for downstream transport, the action area includes all surface waters downstream of the airport project area to the confluence of the Columbia River estuary with the Pacific Ocean.

The "environmental baseline" refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02). Section 5 of the biological assessment, *Environmental Baseline*, specifically describes where species are present within the action area and describes baseline conditions for the Calapooia River watershed (6^{th} field HUC: 170900030404). Existing watershed conditions for the Calapooia River presented in Section 5.2 of the biological assessment, *Aquatic Habitat Baseline Conditions*, were rated as properly functioning (PF), functioning at risk (FAR), or not properly functioning (NPF; NMFS 1996). Generally speaking, the rating describes whether a watershed provides functional habitat to support salmon and steelhead with either low levels of impact or degraded habitat conditions (PF), moderate levels of impact or degraded habitat conditions (FAR), or has severe impacts and severe degraded habitat conditions (NPF). The indicators provided in the BA are relevant to physical and biological features (PBFs[1]) of critical habitat as described in Table 2. These PBFs are essential to the conservation of salmon and steelhead because they support one or more of the species' life stages (e.g., sites with conditions that support spawning, rearing, migration, and foraging).

[1] In this biological opinion, we use the term physical or biological feature (PBF) to mean primary constituent element (PCE) or essential feature, as appropriate for the specific critical habitat.

Table 2. Crosswalk between critical habitat PBFs and associated matrix pathway and indicators (MPI) for ESA-listed salmon and steelhead designated critical habitat considered in the biological opinion.

Physical or Biological Features of Designated Critical Habitat for salmon and steelhead	Associated MPI Pathways and Indicators rated in the BA (David Evans and Associates, Inc 2023)
Spawning and/or rearing habitat, as defined by access, cover/shelter, food/forage, riparian vegetation, space, floodplain connectivity, substrate/spawning gravel, water quality, water temperature, water quantity	**Pathway:** habitat access **Indicator:** physical barriers **Pathway:** habitat elements **Indicator:** substrate, large wood, pool frequency/quality, off-channel habitat, refugia **Pathway:** channel condition and dynamics **Indicators:** width/depth ratio, streambank condition, floodplain connectivity **Pathway:** water quality **Indicators:** temperature, sediment, chemical contamination/nutrients **Pathway:** flow/hydrology **Indicators:** changes in peak/base flows, drainage network **Pathway:** watershed conditions **Indicators:** road density/location, riparian reserves, disturbance history
Migration habitat, as defined by free of artificial obstruction or safe passage, natural cover or cover/shelter, food (juvenile), riparian vegetation, space, substrate, water quality, water quantity, water temperature, water velocity	**Pathway:** habitat access **Indicator:** physical barriers **Pathway:** habitat elements **Indicator:** substrate, large wood, pool frequency/quality, off-channel habitat, refugia **Pathway:** channel condition and dynamics **Indicators:** width/depth ratio, streambank condition, floodplain connectivity **Pathway:** water quality **Indicators:** temperature, sediment, chemical contamination/nutrients **Pathway:** flow/hydrology **Indicators:** changes in peak/base flows, drainage network **Pathway:** watershed conditions **Indicators:** road density/location, riparian reserves, disturbance history
Estuarine areas, as defined by free of obstruction, water quality, water quantity, salinity questions	**Pathway:** habitat access **Indicator:** physical barriers **Pathway:** water quality **Indicators:** temperature, sediment, chemical contamination/nutrients **Pathway:** flow/hydrology **Indicators:** changes in peak/base flows, drainage network

While we have adopted the information provided and/or referenced in Section 5 of the biological assessment for the Calapooia River watershed, after evaluation, which confirmed they meet our regulatory and scientific standards, we have also supplemented baseline information for the species and critical habitats below. The following points address areas where supplemental information/analysis was required.

- Climate change has and will affect the status of ESA-listed species in the action area. Average annual temperatures increased by 0.6 to 0.8 degrees Celsius (°C) in the Pacific Northwest during the last century (Abatzoglou et al. 2014, Kunkel et al. 2013). Warming is likely to continue during the next century as average temperatures are projected to increase another 1.7 to 5.6°C, with the largest increases predicted to occur in summer (Mote et al. 2014). Climate models predict decreases in summer precipitation of as much as 30 percent by the end of the century (Mote et al. 2014) and increases in the frequency of severe winter precipitation events (i.e., 20- and 50-year events), in the western United States (Dominguez et al. 2012). For the Willamette River, Naik and Jay (2011) estimate a decrease in annual mean flow of 11.2 percent since the 19th century, with 9.3 percent due to climate change and 1.9 percent due to irrigation. Climate change is projected to result in a regional shift in precipitation, from winter snowfall to rainfall, which is likely to have pronounced effects on water quantity and quality in the Willamette Basin (Dominguez et al. 2012, Raymondi et al. 2013, Abatzoglou et al. 2014). For the Columbia River at The Dalles, (Naik and Jay 2011) estimate a flow decrease of 8-9 percent due to climate change, and 8 percent due to irrigation depletion; similarly, at Columbia River estuary, climate change is responsible for a decrease of 9 percent and irrigation 6 percent. The largest increases in winter flood frequency and magnitude are predicted in mixed rain-snow watersheds (Mote et al. 2014) as in the action area. Decreased snow-fed runoff could have significant impacts on all salmonid populations covered in this Opinion, except CR chum salmon. Rain-dominated watersheds will experience more intense precipitation events and possible shifts in the timing of the most intense rainfall (Salathe et al. 2014). Changes in runoff patterns, volume, and temperature can adversely affect individual fitness, run timing, and habitat suitability for listed species and critical habitat (Winder and Schindler 2004, Scheuerell and Williams 2005, Zabel et al. 2006, Crozier et al. 2008, Goode et al. 2013, Raymondi et al. 2013).
- Most of the component populations of Lower Columbia River (LCR) Chinook salmon, Upper Columbia River (UCR) spring-run Chinook salmon, Snake River (SR) spring/summer run Chinook salmon, UWR spring-run Chinook salmon, SR fall-run Chinook salmon, Columbia River (CR) chum salmon, LCR coho salmon, SR sockeye salmon, LCR steelhead, Middle Columbia River steelhead, UCR steelhead, SR steelhead, and UWR steelhead, are at a low level of abundance or productivity. Several species have lost multiple historical populations as a result of anthropogenic changes throughout their habitat, and all remaining populations face limiting factors in the remaining habitat, including in the action area. Individuals from all of the component populations must move through or utilize the action area at some point during their life history and will encounter habitat conditions degraded by: modified flow regime, reduced water quality from chemical pollution, loss of functioning floodplains and secondary channels, loss of vegetated riparian areas and associated shoreline cover, and loss of historical estuarine

conditions. This degradation is reflected in limiting factors including loss of spawning and rearing space, juvenile fish stranding, and increased predation.

- UWR Chinook Salmon. This evolutionarily significant unit (ESU) consists of seven demographically independent populations. Abundance levels for all but one of the seven demographically independent populations (DIPs) remain well below their recovery goals. With the exception of the Clackamas River, the proportions of natural-origin spawners in the remainder of the ESU are well below those identified in the recovery goals. Overall, there has likely been a declining trend in the viability of the UWR Chinook salmon ESU since the last review. The magnitude of this change is not sufficient to suggest a change in risk category, however, so the UWR Chinook salmon ESU remains at "moderate" risk of extinction (Ford 2022). Degraded water quality is a limiting factor for this ESU.
- UWR Steelhead. This distinct population segment (DPS) has four demographically independent populations Myers et al. 2006) and the Calapooia River population is the most upstream. All populations have experienced long-term declines in spawner abundance although the underlying cause(s) of these declines is not well understood. Abundance and life history data for steelhead in the UWR steelhead DPS are very limited but it appears that the Calapooia River, on average, supports several hundred spawners. Overall, the UWR steelhead DPS is at "moderate-to-high" risk, with a declining viability trend (Ford 2022). Contaminants and degraded water quality are limiting factors for this DPS.
- LCR Chinook Salmon. This ESU has six major population groups (MPGs) with 32 DIPs. Most populations are still far from the recovery plan goals with only seven of 32 populations are at or near the recovery viability goals set in the recovery plan, and 10 DIPs either had no abundance information (presumed near zero) or exist at very low abundances. Overall, the viability of the LCR Chinook salmon ESU has increased somewhat since the last status review, although the ESU remains at "moderate" risk of extinction (Ford 2022). Pollutants are a limiting factor for this ESU.
- LCR Coho Salmon. Overall abundance trends for LCR coho salmon are generally negative, due to decreases in natural spawner and total abundances across all DIPs. For individual populations, the risk of extinction spans the full range, from "low" to "very high." Only 6 of the 23 populations appear to be above their recovery goal. The current extinction risk for LCR coho salmon is moderate. Contaminants are a limiting factor for this ESU.
- LCR Steelhead. Two MPGs consist of 23 populations. The majority of winter-run steelhead populations persist at low abundance levels (100s of fish), with the exception of the Clackamas and Sandy River DIPs, which have abundances in the low 1,000s. Overall, the LCR steelhead DPS is considered to be at "moderate" risk, and the viability is largely unchanged from the prior review. Contaminants are a limiting factor for this DPS.
- MCR Steelhead. Of the four MPGs comprised of 17 populations, four are at high risk of extinction. Two of the four MPGs in this DPS include at least one population rated at "low" or "very low" risk for abundance and productivity, while the other two MPGs remain in the "moderate" to "high" risk range. Overall, the MCR steelhead DPS remains at "moderate" risk of extinction, with viability

unchanged from the prior review (Ford 2022). Degraded freshwater habitat is a limiting factor for this DPS.

- CR Chum Salmon. A total of three of 17 populations exceed the recovery goals established in the recovery plan. The remaining populations have unknown abundances, although it is reasonable to assume that the abundances are very low and unlikely to be more than 10 percent of the established recovery goal. Even with the improvements observed during the last five years, the majority of DIPs in this ESU remain at a "very high" risk level. With so many primary DIPs at near-zero abundance, none of the MPGs could be considered viable. The CR chum salmon ESU is at moderate risk of extinction. Reduced water quality and contaminants are a limiting factor for this ESU.
- SR Sockeye Salmon. This ESU is comprised of one extant population. The overall biological status relative to recovery goals is "high risk," and in terms of natural production it is at "extremely high risk." The viability of the SR sockeye salmon ESU has likely declined since the time of the prior review, and the extinction risk category remains "high." Reduced water quality is a limiting factor for this ESU.
- SR Spring/Summer-run Chinook Salmon. This ESU is comprised of five MPGs with 28 populations. Of these populations, all except for three populations are at high overall extinction risk. Overall, the Snake River spring/ summer-run Chinook salmon ESU continues to be at moderate-to-high risk. Degraded water quality is a limiting factor for this ESU.
- SR Fall-Run Chinook Salmon. This ESU is comprised of one extant population (Lower Snake River) and one extirpated population (Middle Snake River). The extant population is at an overall "moderate" risk of extinction. Overall, the status of this ESU has improved since listing, but is still considered to be at a moderate-to-low risk of extinction, with viability largely unchanged from the prior review.
- SR Steelhead. This ESU is comprised of five MPGs, and 24 extant populations. Four of the 24 populations are at high risk of extinction, with the majority at "maintained," six populations at "viable" and one population "high viable." Overall, the SR steelhead DPS remains at "moderate" risk of extinction, with viability largely unchanged from the prior review. Degraded freshwater habitat is a limiting factor of this DPS.
- UCR Spring-Run Chinook Salmon. The UCR spring-run Chinook salmon ESU is comprised of three populations (Wenatchee River, Entiat River, and Methow River), each at high risk of extinction. The short-term patterns appear to be driven by years with poor ocean conditions. The ESU remains at high risk, with viability unchanged from the prior review. Degraded freshwater habitat is a limiting factor of this ESU.
- UCR Steelhead. This DPS is comprised of four populations (Wenatchee River, Entiat River, Methow River, and Okanogan River), each at high risk of extinction. The short-term patterns appear to be driven by years with poor ocean conditions. The ESU remains at high risk, driven by low abundance and productivity relative to viability objectives and diversity concerns, with viability unchanged from the prior review. Degraded water quality is a limiting factor for this DPS.
- Green Sturgeon. The southern DPS of green sturgeon is only present in the Lower Columbia River portion of the action area, and only the migrating subadult and

adults are found during summer and fall (NMFS 2021a). No spawning occurs in the action area. Individuals from the DPS of North American green sturgeon could migrate through and hold in deeper areas of the action area as subadults or adults mainly between July and September or October. Poor water quality is a limiting factor for this DPS.

- Eulachon. Eulachon spawning in the Sandy River and Columbia River tributaries upstream migrate through the Lower Columbia River portion of the proposed action area. Adult and larval eulachon may be present in the Lower Columbia River from December to May each year, with peak spawning expected to occur in February or March (ODFW and WDFW 2009). Water quality is a limiting factor for this DPS.

- A summary of the status of critical habitats, considered in this opinion, is provided in Table 3, below.

Table 3. Critical habitat status summaries for critical habitat considered in this opinion.

Species	Critical Habitat Status Summary
Lower Columbia River Chinook salmon	Critical habitat encompasses 10 subbasins in Oregon and Washington containing 47 occupied watersheds, as well as the lower Columbia River rearing/migration corridor. Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some, or high potential for improvement. We rated the conservation value of 30 watersheds as high, medium for 13 watersheds, and low for four watersheds.
Upper Columbia River spring-run Chinook salmon	Critical habitat encompasses four subbasins in Washington containing 15 occupied watersheds, as well as the Columbia River rearing/migration corridor. Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition. However, most of these watersheds have some, or high, potential for improvement. We rated the conservation value of 10 watersheds as high and medium for five watersheds. Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Snake River spring/summer-run Chinook salmon	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon rivers, and all tributaries of the Snake and Salmon rivers (except the Clearwater River) presently or historically accessible to this ESU (except reaches above impassable natural falls and Hells Canyon Dam). Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (Wissmar et al. 1994). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems. Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Upper Willamette River Chinook salmon	Critical habitat encompasses 10 subbasins in Oregon containing 56 occupied watersheds, as well as the lower Willamette/Columbia River rearing/migration corridor. Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition. However, most of these watersheds have some, or high, potential for improvement. Watersheds are in good to excellent condition with no potential for improvement only in the upper McKenzie River and its tributaries (NMFS 2005). We rated the conservation value of 22 watersheds as high, medium for 16 watersheds, and low for 18 watersheds.

Species	Critical Habitat Status Summary
Snake River fall-run Chinook salmon	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon rivers, and all tributaries of the Snake and Salmon rivers presently or historically accessible to this ESU (except reaches above impassable natural falls, and Dworshak and Hells Canyon dams). Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (Wissmar et al. 1994). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems. Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Columbia River chum salmon	Critical habitat encompasses six subbasins in Oregon and Washington containing 19 occupied watersheds, as well as the lower Columbia River rearing/migration corridor. Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated the conservation value of 16 watersheds as high and medium for three watersheds.
Lower Columbia River coho salmon	Critical habitat encompasses 10 subbasins in Oregon and Washington containing 55 occupied watersheds, as well as the lower Columbia River and estuary rearing/migration corridor (NMFS 2015b). Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition. However, most of these watersheds have some or a high potential for improvement. We rated conservation value of 34 watersheds as high, medium for 18 watersheds, and low for three watersheds.
Snake River sockeye salmon	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon rivers; Alturas Lake Creek; Valley Creek; and Stanley, Redfish, Yellow Belly, Pettit and Alturas lakes (including their inlet and outlet creeks). Water quality in all five lakes generally is adequate for juvenile sockeye salmon, although zooplankton numbers vary considerably. Some reaches of the Salmon River and tributaries exhibit temporary elevated water temperatures and sediment loads that could restrict sockeye salmon production and survival (NMFS 2015a). Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Upper Columbia River steelhead	Critical habitat encompasses 10 subbasins in Washington containing 31 occupied watersheds, as well as the Columbia River rearing/migration corridor. Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated conservation value of 20 watersheds as high for, medium for eight watersheds, and low for three watersheds.
Lower Columbia River steelhead	Critical habitat encompasses nine subbasins in Oregon and Washington containing 41 occupied watersheds, as well as the lower Columbia River rearing/migration corridor. Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated conservation value of 28 watersheds as high, medium for 11 watersheds, and low for two watersheds.
Upper Willamette River steelhead	Critical habitat encompasses seven subbasins in Oregon containing 34 occupied watersheds, as well as the lower Willamette/Columbia River rearing/migration corridor. Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. Watersheds are in good to excellent condition with no potential for improvement only in the upper McKenzie River and its tributaries (NMFS 2005). We rated the conservation value of 25 watersheds as high, medium for 6 watersheds, and low for 3 watersheds.

Species	Critical Habitat Status Summary
Middle Columbia River steelhead	Critical habitat encompasses 15 subbasins in Oregon and Washington containing 111 occupied watersheds, as well as the Columbia River rearing/migration corridor. Most fifth-field watersheds with PCEs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated the conservation value of 80 watersheds as high, medium for 24 watersheds, and low for 9 watersheds.
Snake River basin steelhead	Critical habitat encompasses 25 subbasins in Oregon, Washington, and Idaho. Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (Wissmar et al. 1994). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems. Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Southern DPS of green sturgeon	Critical habitat has been designated in coastal U.S. marine waters within 60 fathoms depth from Monterey Bay, California (including Monterey Bay), north to Cape Flattery, Washington, including the Strait of Juan de Fuca, Washington, to its United States boundary; the Sacramento River, lower Feather River, and lower Yuba River in California; the Sacramento-San Joaquin Delta and Suisun, San Pablo, and San Francisco bays in California; tidally influenced areas of the Columbia River estuary from the mouth upstream to river mile 46; and certain coastal bays and estuaries in California (Humboldt Bay), Oregon (Coos Bay, Winchester Bay, Yaquina Bay, and Nehalem Bay), and Washington (Willapa Bay and Grays Harbor), including, but not limited to, areas upstream to the head of tide in various streams that drain into the bays (NMFS 2009b). Several activities threaten the PBFs in coastal bays and estuaries and need special management considerations or protection. The application of pesticides, activities that disturb bottom substrates/ adversely affect prey resources/ degrade water quality through re-suspension of contaminated sediments, commercial shipping and activities that discharge pollutants and result in bioaccumulation of pollutants in green sturgeon; disposal of dredged materials that bury prey resources; and bottom trawl fisheries that disturb the bottom/prey resources for green sturgeon.
Southern DPS of eulachon	Critical habitat for eulachon includes portions of 16 rivers and streams in California, Oregon, and Washington (NMFS 2011a). All of these areas are designated as migration and spawning habitat for this species. In Oregon, we designated 24.2 miles of the lower Umpqua River, 12.4 miles of the lower Sandy River, and 0.2 miles of Tenmile Creek. We also designated the mainstem Columbia River from the mouth to the base of Bonneville Dam, a distance of 143.2 miles. Dams and water diversions are moderate threats to eulachon in the Columbia and Klamath rivers where hydropower generation and flood control are major activities. Degraded water quality is common in some areas occupied by southern DPS eulachon. In the Columbia and Klamath river basins, large-scale impoundment of water has increased winter water temperatures, potentially altering the water temperature during eulachon spawning periods. Numerous chemical pollutants are also present in spawning rivers, but the exact effect these compounds have on spawning and egg development is unknown. Dredging is a low to moderate threat to eulachon in the Columbia River. Dredging during eulachon spawning would be particularly detrimental.

- Within the action area, many stream and riparian areas have been degraded by the effects of land and water use, including urbanization, road construction, forest management, agriculture, mining, transportation, and water development. Restoration actions within the action area, provide some beneficial effects. Development activities have contributed to changes in stream channel morphology; reduced instream roughness and cover; loss and degradation of off-channel areas, refugia, estuarine rearing habitats, riparian areas, spawning areas, and wetlands; degradation of water quality (e.g., temperature, sediment, dissolved oxygen, pollutants); and blocked fish passage.

- The Willamette River portion of the action area is designated as critical habitat for Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, Lower Columbia River steelhead, and Upper Willamette River steelhead. The Willamette River is used for spawning, migration, and/or rearing by the various species.
    - Critical habitat PBFs in the Willamette River portion of the action area for salmon and steelhead are limited by several factors: high summer temperatures, the lack of floodplain connectivity, lack of shallow water habitat, altered hydrology, lack of complex habitat to provide forage and cover, and the presence of hardened shorelines. Silt loading has increased over historical levels due to logging, agriculture, road building, and urban and suburban development within the watershed. Limited opportunity exists for large wood recruitment due to the paucity of mature trees along the shoreline, and the lack of relief along the shoreline to catch and hold the material. much of the historical off-channel habitat (also important habitat for juvenile salmonids) has been lost due to diking and filling of connected channels and wetlands. DEQ-listed water quality problems identified in the action area include toxins, biological criteria (fish skeletal deformities), bacteria (fecal coliform), and temperature.
- The Columbia River portion of the action area is designated as critical habitat for all salmonid ESUs and DPSs present in the action area, since it is used as a migration and rearing corridor for stocks accessing upstream spawning reaches. CR chum spawn in the mainstem Columbia River, and juvenile salmonids smolt in the estuary.
    - Critical habitat PBFs for salmon and steelhead in the Columbia River portion of the action area are limited by several factors: high summer temperatures, degraded water quality from human land uses (agriculture, industry, and roads), the lack of floodplain connectivity, lack of shallow water habitat, altered hydrology, lack of complex habitat to provide forage and cover, and the presence of hardened shorelines. The reduction in low energy, off-channel estuary habitat has reduced rearing habitat for Pacific salmon and steelhead (NMFS 2011b). Dams and other obstructions have weakened the river's connection with its floodplain. Diversions have further altered flow patterns and reduced habitat complexity. The action area is water quality limited for temperature in the summer months, as well as pollutants transported from throughout the watershed.
    - For green sturgeon and eulachon, critical habitat in the action area is limited to the Lower Columbia River. Estuarine area PBFs for green sturgeon include food resources, water flow, water quality, depth, and migratory corridors to support migration, aggregation and holding, and feeding by subadult and adult green sturgeon. Relevant eulachon PBFs are freshwater spawning and incubation sites and freshwater and estuarine migration corridors, both with water flow, quality, and temperature conditions to support these life stages.

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

The biological assessment provides a detailed discussion and comprehensive assessment of the effects of the proposed action in Section 6, *Effects of the Action*, of the initiation package, and is adopted here (50 CFR 402.14(h)(3)). NMFS has evaluated this section and after our independent, science-based evaluation determined it meets our regulatory and scientific standards. The following section summarizes the effects analysis from the biological assessment and supplements the analysis of stormwater effects.

The FAA proposes to fund construction at the Airport for taxiway realignments, runway run-up apron improvements, and other infrastructure improvements to comply with FAA design and safety standards, including an overall increase of 0.41 acre of impervious surfaces. The effects of funding the proposed action on ESA-listed salmon, steelhead, green sturgeon, and eulachon in the action area will include short-term, construction-related effects and permanent water quality effects on LCR Chinook salmon, UCR spring-run Chinook salmon, SR spring/summer-run Chinook salmon, UWR Chinook salmon, SR fall-run Chinook salmon, CR chum salmon, LCR coho salmon, SR sockeye salmon, UCR steelhead, LCR steelhead, UWR steelhead, MCR steelhead, SR steelhead, southern DPS green sturgeon, southern DPS eulachon, and their designated critical habitat. The effects include those that are discountable and those that are adverse.

Short-term effects are primarily associated with construction at the Airport. Exposure of ESA-listed fish and designated critical habitat to these construction-related effects (i.e., turbidity and increased suspended sediments) will be extremely unlikely because they are located approximately 11 miles above occupied habitat and can be avoided or minimized by proposed construction best management practices and conservation measures.

Indirect and permanent effects on ESA-listed species and designated critical habitat include alterations of water quality caused by the episodic discharge of treated stormwater from the Airport and an increase in impervious surfaces. Stormwater runoff from impervious surfaces delivers a wide variety of pollutants to aquatic ecosystems, such as metals (e.g. copper and zinc), petroleum-related compounds (polycyclic aromatic hydrocarbons - PAHs), 6PPD/6PPD-quinone, and sediment washed off the roads, parking lots, driveways, etc. (Driscoll et al. 1990, Buckler and Granato 1999, Greer et al. 2023, Kayhanian et al. 2008, McIntyre et al, 2015, Van Metre et al. 2006, Peter et al. 2018, Tian et al. 2021, Tian et al. 2022). Although the proposed action will add vegetated filter strips to provide treatment capacity equivalent to 50% of a 2-year, 24-hour storm event and vegetated ditches, complete infiltration of stormwater runoff will not occur due to the existing high-water table at the project site. Additionally, stormwater treatment facilities are not 100 percent effective in removing pollutants from runoff due to practical engineering constraints on contaminant removal technology and some pollutants, including 6PPD-quinone, will be discharged to receiving waters and will have episodic effects on water quality. This constitutes a permanent adverse effect on species and designated critical habitat, but at substantially reduced concentrations from untreated stormwater (Carls and Meador 2009, Claytor and Brown 1996, McIntyre et al. 2015, McIntyre et al. 2016, NCHRP 2006, Sandahl et al. 2007, Scholz et al. 2011, Spromberg and Meador 2006). However, even at very low levels, chronic exposures to stormwater pollutants have a wide range of adverse effects on species considered in this opinion (Carls et al. 2008, Comeleo et al. 1996, Feist et al. 2011, Hecht et al. 2007, Johnson et al. 2007, McIntyre et al. 2012, Sandahl et al. 2007, Scholz et al. 2011, Spromberg and Meador 2006, Spromberg and Scholz 2011, Spromberg et al 2016, Young et al. 2018).

Pollutants in stormwater runoff from the proposed project will add to, and compound with, other pollutants already present in the Calapooia, Willamette, and Columbia Rivers and will contribute to the total incremental effect on the environment caused by all development activities within the Willamette Basin and Lower Columbia River. Once in the river, these pollutants are either transported toward the ocean in solution, adsorbed to suspended particles, or are retained in sediments, particularly clay and silt, which can be deposited in areas of reduced water velocity, such as behind dams or backwater and off-channel areas, until they are mobilized and transported by future sediment moving flows (Alpers et al. 2000a, Alpers et al. 2000b, Anderson et al. 1996). While exposure to the specific stormwater discharge from the proposed action cannot be directly associated with adverse effects on specific individuals of species considered in this opinion, these pollutants have been shown to injure or kill individual fish through a variety of lethal and sublethal effects, including disrupted behavior, reduced olfactory function, immune suppression, reduced growth, disrupted smoltification, hormone disruption, disrupted reproduction, cellular damage, and physical and developmental abnormalities either by themselves or through additive, interactive, and synergistic interactions with other pollutants (Baldwin et al. 2009, Brette et al. 2014, Feist et al. 2011, Hicken et al. 2011, Incardona et al. 2014, Laetz et al. 2009, Laetz et al. 2013, Laetz et al. 2014). The mixture of pollutants in stormwater runoff from impervious surfaces can degrade habitat enough to substantially reduce its ability to support salmon spawning, rearing, feeding, and migration.

Adverse effects on individuals within the populations of ESA-listed species considered in this opinion from stormwater pollutants are reasonably certain to include mortality, injury, and a variety of sublethal and behavioral effects that will reduce growth, fitness, and survival. Sublethal effects (such as olfactory effects) are those that are not directly or immediately lethal, but are detrimental and have some probability of leading to eventual death via behavioral or physiological disruption. Effects on the water quality PBF are also reasonably certain with stormwater runoff, as stormwater runoff discharged from new impervious surfaces on the Airport will deliver a variety of pollutants to the aquatic ecosystem episodically for the foreseeable future, despite proposed treatment. However, those effects will be minimized through implementation of a stormwater management plan, conservation measures, and construction best management practices. Controlled stormwater discharge will ensure that runoff and associated pollutants do not enter the basin in large surges to minimize hydromodification effects on habitat.

“Cumulative effects” are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02 and 402.17(a)). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. Materials in the initiation package did not address cumulative effects in the project area. Therefore, NMFS is including the following information on cumulative effects in the action area.

Climate change and human development have and will continue to adversely impact critical habitat creating limiting factors and threats to the recovery of the ESA-listed species analyzed in this opinion. It is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline vs. cumulative effects. Therefore, all relevant future climate-related environmental conditions in the action area are described in the environmental baseline above. The contribution of non-Federal activities to the current condition of ESA-listed species and designated critical habitats within the action area was also described above. Ongoing and future land management actions are likely to continue to have a depressive effect on aquatic habitat quality in the Willamette and Columbia basins. The past effect of development and general resource demands associated with settlement of local and regional population centers is expressed as changes to physical habitat and loadings of pollutants. The collective effects of these activities tend to be expressed most strongly in lower river systems where the consequences of numerous upstream land management actions aggregate to influence natural habitat processes and water quality. As a result, recovery of aquatic habitat is likely to be slow in most areas and cumulative effects at the basin-wide scale are likely to have a neutral to negative impact on population abundance trends and the quality of critical habitat PBFs. However, the adoption of more environmentally acceptable practices and standards may gradually reduce some negative environmental impacts over time, and interest in restoration activities has increased as environmental awareness rises among the public.

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

Each species considered in this opinion is listed as threatened or even endangered. The status of each species considered in this consultation varies considerably from very high risk of extinction, to moderate, to low risk of extinction. These species are listed under the Endangered Species Act because of reductions in abundance from historic levels, low productivity, reductions in diversity and diminishment in spatial structure. These conditions are due in part to systemic degraded habitat as factors for decline and similarly are found in the baseline of the action area, where multiple anthropogenic changes exist. Contaminants/pollutants, water quality, and/or degraded freshwater habitat are all limiting factors for the species analyzed in this opinion, with the exception of SR Fall-run Chinook salmon, and will be affected by the proposed action. However, even SR Fall-run Chinook salmon migrate through areas of poor water quality and thus exposed to those physical effects and consequences.

As described in the biological assessment, Section 6, *Effects of the Action*, and briefly presented above, direct effects of construction activities will be negligible as they will not co-occur with ESA-listed species of designated critical habitat. However, the proposed action will have adverse effects on the ESA-species and designated critical habitat in the action area due to a small but increased amount of impervious surfaces (0.41 acre) and discharge of treated stormwater runoff which will contribute to water quality pollutants already present in the Calapooia, Willamette, and Columbia Rivers and will contribute to the total incremental effect on the environment caused by all development activities within the Willamette Basin and Lower Columbia River. Given the proposed stormwater treatment and detention methods for the project, effects where ESA-listed species and designated critical habitat occurs approximately 11 miles downstream of the project site will likely be minor decreases in water quality given the considerable dispersal factor and other sources of anthropogenic stormwater and pollutants commonly found in stormwater. While permanent effects include lethal, sublethal, and behavioral responses to pollutants in stormwater discharge, the relatively small, and localized nature of the proposed action will not result in an appreciable modification of the baseline conditions for species survival, nor will the proposed action result in effects that will detract from ongoing recovery efforts. Additionally, the conservation value of critical habitat as a whole for the species will not be appreciably diminished.

Climate change and human development have and continue to adversely impact critical habitat creating limiting factors and threats to the recovery of the ESA-listed species considered. Climate change will likely result in a generally negative effect on stream flow and temperature. NMFS assumes that the environmental baseline is not meeting all biological requirements of individual fish of all 15 species. This is due to one or more impaired aquatic habitat functions related to any of the habitat factors limiting the recovery of the species in that area. Non-federal plans to mitigate climate change are largely unknown but may have localized benefits that extend to species and habitat within the Willamette River Basin as a whole. When these influences are considered collectively, we expect trends in habitat quality to remain flat or degrade gradually over time. This will, at best, further stress population abundance and productivity for the species affected by this consultation. In a worst-case scenario, we expect population abundance trends to decline. Likewise, we also expect the quality and function of critical habitat PBFs to remain flat or gradually decline over time.

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS biological opinion that the proposed action is not likely to jeopardize the continued existence of the following species or destroy or adversely modify its designated critical habitat.

- Lower Columbia River Chinook salmon
- Upper Columbia River spring-run Chinook salmon
- Snake River spring/summer-run Chinook salmon
- Upper Willamette River Chinook salmon
- Snake River fall-run Chinook salmon
- Columbia River chum salmon
- Lower Columbia River coho salmon
- Snake River sockeye salmon

- Upper Columbia River steelhead
- Lower Columbia River steelhead
- Upper Willamette River steelhead
- Middle Columbia River steelhead
- Snake River basin steelhead
- Southern DPS of green sturgeon
- Southern DPS of eulachon

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur because some individuals of salmon, steelhead, green sturgeon, and eulachon in the action area will be indirectly harmed from habitat modification caused by episodic discharges of stormwater runoff from impervious surfaces on long-term basis. Adverse effects of the proposed action will include reduced water quality due to increased impervious surfaces and stormwater inputs of PAHs, metals, 6PPD-quinone, and sediment. This habitat modification will significantly impair essential breeding, spawning, rearing, migrating, feeding, or sheltering behavioral patterns such that fish will be injured or killed from the increases in pollution or will experience a reduction in fitness, growth or survival.

Accurately quantifying the number of fish harmed by these pathways is not possible because injury and death of individuals in the action area is a function of habitat quality, competition, predation, and the interaction of processes that influence genetic, population, and environmental characteristics. These biotic and environmental processes are highly variable and interact in ways that may be random or directional, and may operate across broad temporal and spatial scales. The precise distribution and abundance of fish within the action area, at the time of the action are not a simple function of the quantity, quality, or availability of predictable habitat resources within that area. Rather, the distribution and abundance of fish also show wide, random variations due to biological and environmental processes operating at much larger demographic and regional scales. Furthermore, there are no methods available to monitor this death and injury because it will occur throughout the year and after the proposed action has been completed.

Therefore, it is not practical or realistic to attempt to identify and monitor the number of fish taken by the pathways described.

In cases such as this, where quantifying a number of fish is not possible, we use take surrogates or take indicators that rationally reflect the incidental take caused by the proposed action. Here, the best available indicator for the extent of take is the following combination of stormwater facility inspection, maintenance, and recording actions, because those variables will determine whether the proposed stormwater treatment system continues to reduce the concentration of pollutants in stormwater runoff as designed, and thus reflect the amount of incidental take analyzed in the opinion. This indicator is appropriate for the proposed action because it has a rational connection to the release of stormwater pollutants that cause take of listed species.

1. Each part of the proposed stormwater system described in the proposed action, including vegetated filter strips and constructed or expanded vegetated stormwater ditches must be inspected and maintained at least quarterly for the first three years, at least twice a year thereafter, and at least three times per water year (for the first three years) within 48-hours following a storm event with more than 1 inch of rain over a 24-hour period.
    a. All stormwater must drain out of the vegetated filter strips within 24-hours after rainfall ends, and out of the constructed or expanded vegetated stormwater ditches within 48-hours after rainfall ends.
    b. All stormwater system components must freely convey stormwater.
    c. Desirable vegetation in the vegetated filter strips and constructed or expanded stormwater ditches must cover at least 80% of the facility within 3 years – excluding dead or stressed vegetation, dry grass or other plants, and weeds.

If the stormwater system is not inspected and maintained (as described in #1); if water ponds in the filter strips for longer than 24 hours, or in the constructed or expanded vegetated stormwater ditches for longer than 48 hours, after rainfall ends (#1a), stormwater is not conveyed freely through the system (#1b), or if desirable vegetation does not cover 80% of the filter strips and constructed or expanded stormwater ditches (#1c) and corrective action is not taken with respect to #1a-c within seven days of a required inspection, the extent of take surrogate for stormwater will be exceeded.

Effect of the Take

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

“Reasonable and prudent measures” are measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02). The following measures are necessary or appropriate to minimize the extent of incidental take of listed species from the proposed action:

1. The FAA will minimize take from exposure to stormwater pollutants associated with new impervious surfaces by ensuring that stormwater runoff produced by impervious surfaces of the Lebanon Airport that are modified through the proposed action are treated with stormwater facilities that are designed, constructed, operated, and maintained using the best available information on low impact development and best management practices for stormwater treatment and discharge; and
2. The FAA will minimize take by ensuring completion of a monitoring and reporting program to confirm that the take exemption of the proposed action is not exceeded, and that the terms and conditions in this incidental take statement are effective in minimizing incidental take.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the FAA or ODAV must comply (or must ensure that any applicant complies) with the following terms and conditions. The FAA or ODAV has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement reasonable and prudent measure #1 (stormwater pollutants):
    a. The project developer will be responsible for insuring installation, function and maintenance of the proposed stormwater facilities during construction.
    b. Following construction, ODAV or any successor in interest to the project developer will assume responsibility for maintenance of all of the system components per the manufacturer’s recommendations and as described in *Appendix B* of the Lebanon State Airport Taxiway Rehabilitation biological assessment prepared by David Evans and Associates, Inc (December 2023) and submitted by the FAA.
    c. ODAV will carry out the stormwater operation and maintenance plan as described by David Evans and Associates, Inc (December 2023) including all provisions pertaining to: identification of responsible parties, inspection and maintenance schedule, and inspection and maintenance procedures. ODAV will also keep and preserve a log of all maintenance activities.
    d. ODAV will ensure that vegetation in the filter strips and constructed or expanded stormwater ditches covers at least 80% of the facility within 3 years, excluding dead or stressed vegetation, dry grass or other plants, and weeds.

2. The following terms and conditions implement reasonable and prudent measure #2 (monitoring and reporting):
    a. The FAA shall submit the following reports to NMFS:
        i. A project completion report within 60-days of completing construction, including:
            1. Project name;
            2. FAA contact person;

3. Construction completion date.

ii. Three annual reports on stormwater facility operation and maintenance for three full years following construction, including the following information:

1. Stormwater facility monitoring logs with:
   a. The name of the employee or contractor for all inspections;
   b. the date of each regular inspection, and any additional inspection made within 48-hours of storm events with greater than or equal to 1 inch of rain during a 24-hour period;
   c. a description of any structural repairs or facility cleanout, e.g., sediment and oil removal and disposal, vegetation management, erosion control, ponding water, pests, trash or debris removal; and
   d. An estimate of the percent cover of healthy vegetation in the filter strips and constructed or expanded stormwater ditches, including a description of any corrective action needed to ensure 80% coverage within three years.

iii. Each of the above reports must be submitted to:
projectreports.wcr@noaa.gov
Attn: WCRO-2023-00554

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02

- No conservation recommendations are included with this Opinion.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the FAA or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) the amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or if (4) a new species is listed or critical habitat designated that may be affected by the identified action.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation. Per our independent analysis, parts of the action area where Chinook or coho salmon are present are designated by the Pacific Fishery Management Council (PFMC) as EFH for Pacific Coast salmon and contains complex channels and floodplain habitats, thermal refugia, spawning habitat, estuaries, and marine and estuarine submerged aquatic vegetation as habitat areas of particular concern (HAPC; PFMC 2014)). The estuarine component of the action area is also designated as EFH for Pacific Coast groundfish (PFMC 2019) and coastal pelagic species (PFMC 1998); estuaries are identified by the PFMC as a HAPC for Pacific Coast salmon and Pacific Coast groundfish. While the HAPC designation does not add any specific regulatory process, it does highlight certain habitat types that are of high ecological importance (PFMC 2014).

NMFS concludes that proposed action will have adverse effects on freshwater and estuarine EFH quality, including the associated HAPCs, will be reduced by pollutants in stormwater runoff with episodic and permanent effects on water quality. The FAA should implement RPM 1 above to minimize the delivery of stormwater pollutants to streams containing EFH for Pacific Coast salmon, Pacific Coast groundfish, coastal pelagic species, and HAPCs. Implementation of RPM 1 including the required Terms and Condition will serve as EFH conservation measures.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository [https://repository.library.noaa.gov/]. A complete record of this consultation is on file at the Oregon Washington Coastal Office.

Please contact Michelle McMullin in the Oregon Coast branch of the Oregon Washington Coastal Office at 541-957-3378 or Michelle.McMullin@noaa.gov if you have any questions concerning this consultation, or if you require additional information

Sincerely,

Kim W. Kratz, Ph.D
Assistant Regional Administrator
Oregon Washington Coastal Office

cc: Noah Herlocker, David Evans and Associates, Inc.
Valerie Thompson, David Evans and Associates, Inc.

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