



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
1201 NE Lloyd Boulevard, Suite 1100  
PORTLAND, OR 97232-1274

**Refer to NMFS No:**  
**WCRO-2023-00988**

October 1, 2024

William D. Abadie  
Chief, Regulatory Branch  
U.S. Army Corps of Engineers, Portland District  
P.O. Box 2946  
Portland, Oregon 97208-2946

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Van Duyn Industrial Park near Coburg, Oregon

Dear Mr. Abadie:

This letter responds to your June 16, 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 when supplemented with information from biological opinions for similar actions, including NMFS (2014; herein referred to as "SLOPES"); NMFS (2018); NMFS (2020); and NMFS (2024).

We reviewed the U.S. Army Corps of Engineers' (Corps) consultation request and related initiation package. Where relevant, we have adopted the information and analyses you have provided and/or referenced but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. In our biological opinion below, we indicate what parts of your documents we have incorporated by reference and where that information is being incorporated. We adopt by reference the following sections of the Biological Assessment (BA) and accompanying materials:

- *Introduction* (Chapter I) and *Project Description* (Chapter II)
- *Action Area* (Chapter III)
- *Species, Critical Habitat, Essential Fish Habitat* (Chapter IV)
- *Post-Construction Stormwater Management Plan*

With the request for initiation, NMFS received a request for concurrence that the proposed action may affect the following ESA-listed species:

- Upper Willamette River (UWR) Chinook salmon (*Oncorhynchus tshawytscha*) and designated critical habitat.

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Subsequent to the initial request, on August 23, 2024, NMFS shared with the Corps that the proposed action was likely to adversely affect UWR Chinook salmon, as well as the following ESA-listed species and designated critical habitats that NMFS can verify as occurring within the action area and that are likely to be adversely affected by the proposed action:

- Lower Columbia River (LCR) Chinook salmon
- Upper Columbia River (UCR) spring-run Chinook salmon
- Snake River (SR) spring/summer run Chinook salmon
- SR fall-run Chinook salmon
- Columbia River (CR) chum salmon (*Oncorhynchus keta*)
- LCR coho salmon (*Oncorhynchus kisutch*)
- SR sockeye salmon (*Oncorhynchus nerka*)
- UCR steelhead (*Oncorhynchus mykiss*)
- LCR steelhead
- UWR steelhead
- Middle Columbia River (MCR) steelhead
- SR Basin steelhead
- Southern DPS green sturgeon (*Acipenser medirostris*)
- Southern DPS eulachon (*Thaleichthys pacificus*)
- Sunflower sea star (*Pycnopodia helianthoides*)

Formal consultation under section 7 of the ESA was initiated on September 3, 2024, when NMFS received the *Stormwater Management Plan*.

Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on May 6, 2024 (89 Fed. Reg. 24268). We are applying the updated regulations to this consultation. The 2024 regulatory changes, like those from 2019, were intended to improve and clarify the consultation process, and, with one exception from 2024 (offsetting reasonable and prudent measures), were not intended to result in changes to the Services' existing practice in implementing section 7(a)(2) of the Act. 89 Fed. Reg. at 24268; 84 Fed. Reg. at 45015. We have considered the prior rules and affirm that the substantive analysis and conclusions articulated in this biological opinion and incidental take statement would not have been any different under the 2019 regulations or pre-2019 regulations.

The Corps is proposing to permit Ravin Venture LLC's proposed Van Duyn Industrial Park (proposed action). The proposed action will entail constructing an industrial park including a total of 69.2 acres of impervious surfaces (34.8 acres of buildings, 28.8 acres of parking areas, and 5.6 acres of streets and sidewalks). The industrial park will be constructed in an area containing wetlands along Van Duyn Road, east of Interstate 5 in Coburg, Lane County, Oregon.

The proposed action will involve the development and conversion of undeveloped agricultural land to light industrial uses. This land will be graded to accommodate an industrial business park composed of large lots and a large warehouse/office building. The lots will have employee parking, truck and trailer parking, loading docks, stormwater treatment facilities, and open space/landscaping. New public streets with utilities will be constructed to provide access to the

industrial park and adjacent properties to the west. The central road will include a bridge to cross the main tributary near the center of the property placed well above ordinary high water.

The project area, including existing wetlands therein, will be filled and graded to drain according to the *Stormwater Management Plan*. Overall, work related to the proposed action will disturb more than 80 acres and move approximately 360,000 cubic yards of material. Work within wetland areas will disturb 12.37 acres of wetland with approximately 40,000 cubic yards of removal and 52,000 cubic yards of fill.

A deed restriction will be placed on approximately 10 acres along the east side of the project area to protect aquatic resources avoided during construction, including the NE Tributary, the undisturbed portion of the first-order NE Tributary and undisturbed portion of Wetland C, the first-order tributary near the center along the east side, and the northern leg of the SE Tributary. Development is not proposed within 50 feet of the areas avoided along Wetland C, Wetland D, and Wetland I. Portions of the western leg of the main tributary will have a reduced buffer, but disturbance will not occur below the ordinary high-water line along the entire tributary (Figure 1).

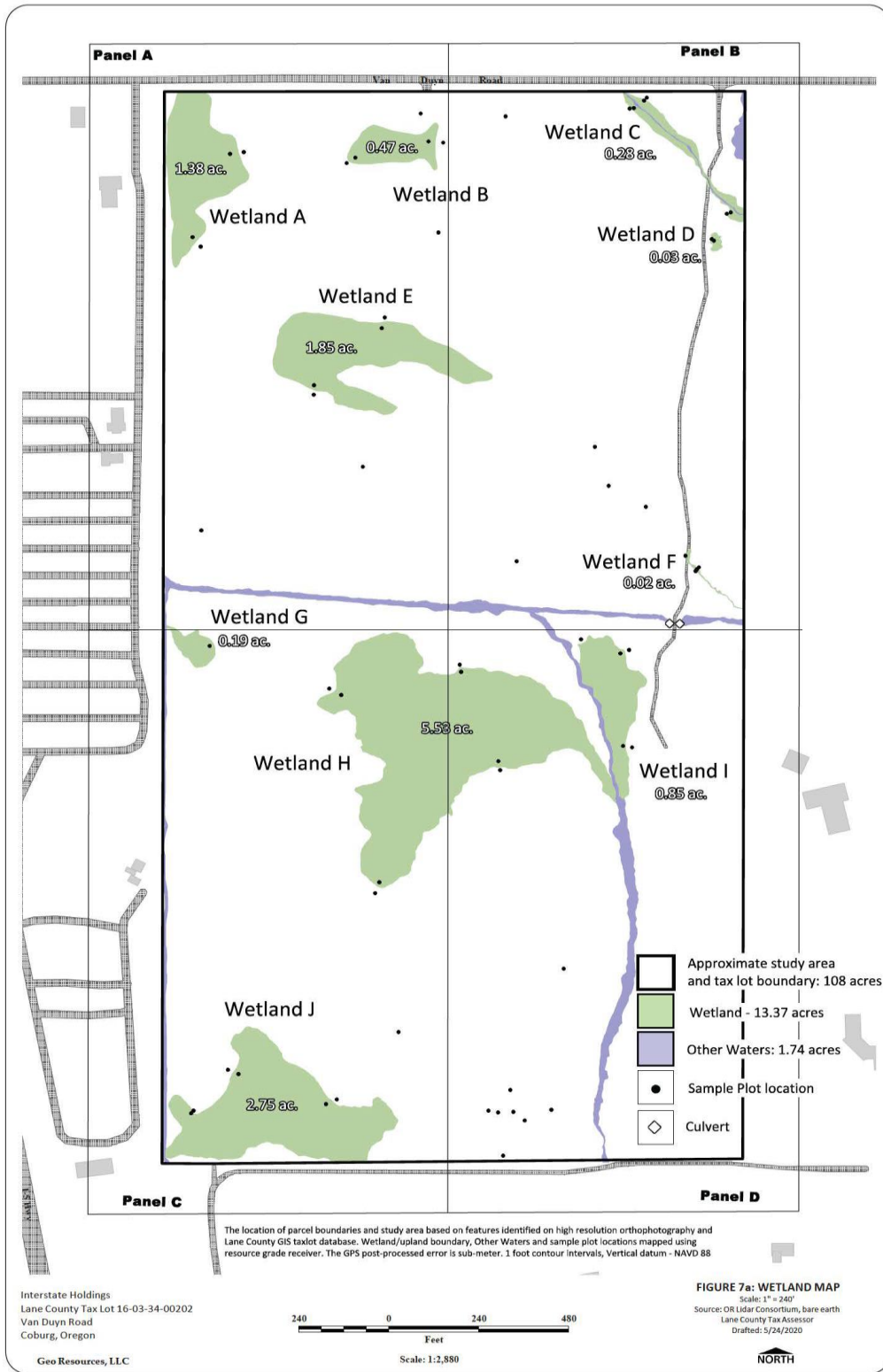


Figure 1. Wetland Map for Van Duyn Industrial Park.

## BIOLOGICAL OPINION

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 (PBFs) essential to the conservation of the species that create the conservation value of that habitat. Finally, we examined the likely effects on any listed species and critical habitats that we made "not likely to adversely affect" determinations for. Our conclusions regarding the effects of the action on those species and critical habitats is presented below under the heading: NLAA determinations.

There are 17 ESA-listed species within the action area:

1. Lower Columbia River (LCR) Chinook salmon
2. Upper Willamette River (UWR) Chinook salmon
3. Upper Columbia River (UCR) spring-run Chinook salmon
4. Snake River (SR) spring/summer run Chinook salmon
5. SR fall-run Chinook salmon
6. Columbia River (CR) chum salmon (*Oncorhynchus keta*)
7. LCR coho salmon (*Oncorhynchus kisutch*)
8. SR sockeye salmon
9. UCR steelhead (*Oncorhynchus mykiss*)
10. LCR steelhead
11. UWR steelhead
12. Middle Columbia River (MCR) steelhead
13. SR Basin steelhead
14. Southern DPS green sturgeon (*Acipenser medirostris*)
15. Southern DPS eulachon (*Thaleichthys pacificus*), and
16. Sunflower sea star\* (*Pycnopodia helianthoides*)
17. Southern resident killer whale (*Orcinus orca*)

\*Proposed for listing as a threatened species under the ESA

Each of the species indicated above, with the exception of the sunflower sea star, have designated critical habitat located within the action area. Though the sunflower sea star is proposed for listing under the ESA, no critical habitat has been proposed for the species. The above list is longer than which is described in the *Species, Critical Habitat, Essential Fish Habitat* chapter of the BA because it includes additional species NMFS can verify as occurring within the action area that are likely to be adversely affected by the proposed action. Similarly, each of the affected ESA-listed species has designated critical habitat in the action area that is also likely to be adversely affected by the proposed action.

As described in the *Species, Critical Habitat and Essential Fish Habitat* chapter of the BA (Chapter IV) and additional information from NMFS (2020), including the conservation and recovery plans for those species cited therein, populations of the 16 species of ESA-listed fish that occur within the action area use that area to complete all or part of their life history requirements.

The status of the salmon and steelhead species that occur within the action area and their many individual populations vary considerably, from endangered to threatened, and from very high risk of extinction to low risk of extinction. Their abundance has declined because of numerous factors, but one factor they all share is degradation of freshwater and estuarine habitats within the action area due to the effects of land and water development. Some salmon and steelhead species migrate and rear in the action area, while others only migrate through, once as out-migrating juveniles and then again as adults migrating upstream to spawn. Similarly, juvenile and adult southern green sturgeon use the lower estuary in the action area to rear or complete seasonal migrations. Eulachon use a somewhat wider range of estuary and freshwater conditions for spawning, rearing, and migration. Declines of these two species are not as closely associated with degradation of habitat conditions within the action area as they are for salmon and steelhead. Current trends in climate and marine conditions are likely to place additional stress on populations of ESA-listed species that inhabit the action area by exacerbating ongoing habitat concerns such as increasing summer temperatures and reduced summer flows in the freshwater environment, sea level rise in the estuary, and ocean acidification.

Chapter IV of the BA and additional information from NMFS (2020) also describe the status of critical habitat that is designated for the 16 ESA-listed fish species that occur within the action area. Baseline conditions for the individual PBFs that comprise those critical habitats vary widely, from poor (e.g., floodplain connectivity, riparian conditions) to fair (e.g., fish passage, water quantity) but were determined to have a high conservation value within the action area itself based largely on their migratory and restoration potential. Similar to their impacts on species, current trends in climate and marine conditions are likely to place additional stress on the conservation value of critical habitats.

The sunflower sea star occupies nearshore intertidal and subtidal marine waters shallower than 450 meters (~1400 feet) deep from Adak Island, Alaska, to Bahia Asunción, Baja California Sur, Mexico. Individuals are occasionally found in the deep parts of tide pools. The species is a habitat generalist, occurring over sand, mud, and rock bottoms both with and without appreciable vegetation. Critical habitat is currently indeterminable because information does not exist to clearly define primary biological features. Sunflower sea star prey includes a variety of epibenthic and infaunal invertebrates, and the species also digs in soft substrate to excavate clams. The species is a well-known urchin predator and plays a key ecological role in control of these kelp consumers. More information about sea star biology, ecology, and their life history cycle is found in the proposed listing (88 FR 2023).

From 2013 to 2017, the sunflower sea star experienced a range-wide epidemic of sea star wasting syndrome (Gravem et al. 2021; Hamilton et al. 2021; Lowry et al. 2022). While the cause of this disease remains unknown, prevalence of the outbreak has been linked to a variety of environmental factors, including temperature change, sustained elevated temperature, low dissolved oxygen, and decreased pH (Hewson et al. 2018; Aquino et al. 2021; Heady et al. 2022; Oulhen et al. 2022). Changes in physiochemical attributes of nearshore waters are expected to change in coming decades as a consequence of anthropogenic climate change, but the specific consequences of such changes on sea star wasting syndrome prevalence and severity are currently impossible to accurately predict.

“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). The action area in this case includes two zones that encompass the extent of project-related effects: (1) the project area and (2) the zone of effects on water quality from stormwater discharge associated with the proposed action. The project area includes the entirety of the parcels in which the proposed action will occur, including stormwater discharge points to waters that join Muddy Creek, a tributary to the Willamette River. The water quality zone of effects from stormwater constituents extends downstream of the discharge points to Muddy Creek to its confluence with the Willamette River, and includes downstream areas below the high tide line along the Willamette River and the Columbia River to its confluence with the Pacific Ocean. The *Action Area* section of the BA discusses the action area for the proposed action and is being adopted here.

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 impacts to listed species or designated critical habitat from federal agency activities or existing federal agency facilities that are not within the agency’s discretion to modify are part of the environmental baseline (50 CFR 402.02). Chapter III of the BA provides a detailed description of the environmental baseline and is being adopted here. In summary, the northern half of the project area has been used for agriculture since the 1950s or earlier, and the southern half was cleared in the 1970s to begin agricultural use. Some of the waters within the project area have been modified into ditches to accommodate agricultural use.

One factor affecting the status of the ESA-listed species considered in this opinion, and aquatic habitat at large, is climate change. Climate change is likely to play an increasingly important role in determining the abundance and distribution of ESA-listed species, and the conservation value of designated critical habitats, in the Pacific Northwest. These changes will not be spatially homogeneous across the Pacific Northwest. Major ecological realignments are already occurring in response to climate change (IPCC WGII, 2022). Long-term trends in warming have continued at global, national and regional scales. Global surface temperatures in the last decade (2010s) were estimated to be 1.09 °C higher than the 1850-1900 baseline period, with larger increases over land ~1.6 °C compared to oceans ~0.88°C (IPCC WGI, 2021). The vast majority of this warming has been attributed to anthropogenic releases of greenhouse gases (IPCC WGI, 2021). Globally, 2014-2018 were the warmest 5 years on record both on land and in the ocean (2018 was the fourth warmest) (NOAA NCEI 2022). Events such as the 2013-2016 marine heatwave (Jacox et al. 2018) have been attributed directly to anthropogenic warming in the annual special issue of Bulletin of the American Meteorological Society on extreme events (Herring et al. 2018). Global warming and anthropogenic loss of biodiversity represent profound threats to ecosystem functionality (IPCC WGII 2022). These two factors are often examined in isolation but likely have interacting effects on ecosystem function. Updated projections of climate change are similar to or greater than previous projections (IPCC WGI, 2021). NMFS is increasingly confident in our projections of changes to freshwater and marine systems because every year

brings stronger validation of previous predictions in both physical and biological realms. Retaining and restoring habitat complexity, access to climate refuges (both flow and temperature) and improving growth opportunity in both freshwater and marine environments are strongly advocated in the recent literature (Siegel and Crozier 2020).

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.

The BA provides a detailed discussion and comprehensive assessment of the effects of the proposed action in Chapter V, *Effects Analysis* section 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. Adverse effects on individuals within the populations of ESA-listed species considered in this opinion from stormwater-related 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 water quality are also reasonably certain to result from stormwater runoff associated with the proposed action, as stormwater runoff discharged from new impervious surfaces on the Van Duyn Industrial Park 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 receiving waters in large surges to minimize hydromodification effects on habitat.

Little is known about specific effects of toxic contaminants on sunflower sea stars or how stress from exposure to such chemicals affects susceptibility to sea star wasting syndrome. Laboratory challenge tests have exposed larval stages of various marine invertebrates to hydrocarbons, heavy metals, pesticides, and other contaminants commonly found in stormwater runoff. Documented impacts range from developmental abnormalities to behavioral augmentation, and mortality is common at concentrations as low as several parts per million (e.g., Hudspith et al. 2017, de Almeida Rodrigues et. al 2022). For juvenile and adult marine invertebrates, including sea stars and other echinoderms, a variety of sublethal behavioral and physiological effects from these toxic contaminants have been documented, but mortality is also possible. Suspended sediment in stormwater may also be a concern as stars that become covered by sediment may experience greater risk of wasting disease. Absent species-specific data for the sunflower sea star, ecologically and physiologically similar species can be used as proxies to state that stormwater runoff is likely to harm, injure, or kill sunflower sea stars, having the greatest effects during the larval life history stage. Proximity of individual stars to stormwater outfalls would also likely be a consideration for effect determinations.



Stormwater runoff from the Willamette Valley carries a wide variety of toxic contaminants known to affect organismal health and vitality in marine systems. While studies have not been conducted with sunflower sea stars, bioaccumulation of chemicals, with both sublethal and lethal effects, has been documented in various life stages of other mesopredators with planktonic larvae (e.g., herring, rockfish). Using these species as proxies, both sublethal and lethal effects to sunflower sea stars can be presumed, with the greatest impact likely occurring at the larval stage.

“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). 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 thereby 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 in terms of whether they are part of the environmental baseline or cumulative effects. Therefore, all relevant future climate-related environmental conditions in the action area are described in the environmental baseline above. Ongoing and future land management actions are likely to continue to have an adverse effect on aquatic habitat quality in the Willamette and Columbia river 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 loading 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.

As described in the *Species, Critical Habitat and Essential Fish Habitat* chapter of the BA (Chapter IV) and additional information from NMFS (2020), including the conservation and recovery plans for those species cited therein, populations of the 16 species of ESA-listed fish

that occur within the action area use that area to complete all or part of their life history requirements.

The status of these salmon and steelhead species and their many individual populations vary considerably, from endangered to threatened, and from very high risk of extinction to low risk of extinction. Their abundance has declined due to numerous factors, but one factor they all share is degradation of freshwater and estuarine habitats within the action area due to the effects of land and water development across their range. Some salmon and steelhead species migrate and rear in the action area, while others only migrate through, once as out-migrating juveniles and then again as adult fish on upstream spawning migration. Similarly, juvenile and adult southern green sturgeon use the lower estuary in the action area to rear or complete seasonal migrations, and eulachon use a somewhat wider range of estuary and freshwater conditions for spawning, rearing, and migration, although declines of these two species are not as closely associated with degradation of habitat conditions within the action area as they are salmon and steelhead. Current trends in climate and marine conditions are likely to place additional stress on populations by exacerbating ongoing habitat concerns such as increasing summer temperatures and reduced summer flows in the freshwater environment, sea level rise in the estuary, and ocean acidification.

The Chapter IV of the BA and additional information from NMFS (2020) also describe the status of critical habitat that is designated for the 16 species of ESA-listed fish that occur within the action area. Baseline conditions for the individual PBFs that comprise those critical habitats vary widely at scale, from poor (e.g., floodplain connectivity, riparian conditions) to fair (e.g., fish passage, water quantity) but were determined to have a high conservation value within the action area itself based largely on their migratory and restoration potential. Similar to their impacts on species, current trends in climate and marine conditions are likely to place additional stress on the conservation value of critical habitats.

Information in Chapter III of the BA and supplemental information from NMFS (2020) describe the environmental baseline in the action area as poor. NMFS assumes that the environmental baseline is not meeting all biological requirements of individual fish of listed species, and that critical habitat is not fulfilling its full conservation potential. This is due to one or more impaired aquatic habitat functions related PBFs for water quality, substrate, off-channel habitat, channel conditions and dynamics, stream hydrology, and other habitat factors that are limiting the recovery of the species in that area.

The proposed action will discharge post-construction stormwater that, despite being treated, will still contain a wide variety of pollutants and contaminants, including sediment, nutrients, metals, petroleum-related compounds, pesticides, tire tread particles, and other chemical compounds. Some of these contaminants are persistent and can travel long distances in aquatic systems. Some are also likely to accumulate in species as they pass from one species to the next through the food web. Pollutants and contaminants introduced to aquatic systems via post-construction stormwater associated with the proposed action may harm fish that come into contact with them far downstream when they enter fish tissues at levels high enough to modify behavior, disrupt endocrine functions, or cause immunotoxic effects, either by themselves or through additive, interactive, and synergistic interactions with other contaminants in the river.

These harmful effects are likely to fall unequally on salmon and steelhead populations with subyearling, or mixed subyearling and yearling, life histories (i.e., UWR spring-run Chinook salmon, CR chum salmon, LCR Chinook salmon, and SR fall-run Chinook salmon), because juveniles of those species are more closely associated with low-velocity habitats where contaminants are likely to be more concentrated in fine, suspended sediments, and in their prey organisms. They will also harm southern green sturgeon, a long-lived, benthic-dwelling species that spends an appreciable amount of their life cycle in bays, estuaries, and lower elevation mainstem of rivers where they are vulnerable to the effects of stormwater pollutants and contaminants, particularly in suspended sediments and bioaccumulation of contaminants in their prey. However, exposure to pollutants has not been identified as limiting factor for this species. Similarly, egg and larval stages of eulachon will be vulnerable to stormwater pollutants and contaminants because of their benthic distribution. Adult eulachon are less vulnerable because of their relatively brief residence time in the river before dispersal into the ocean.

Pollutants and contaminants discharged with treated stormwater from the project area are also likely to have an adverse impact on the PBFs that salmon and steelhead need for forage and water quality at sites used for freshwater rearing, in freshwater migration corridors, and in estuarine areas. These adverse impacts would be greater on critical habitat designated for species and populations that have a sub-yearling life history than for those with a yearling life history, although all impacts would lessen in the estuary as freshwater influences subside and marine influences increase. Similarly, the effects of the proposed action are likely to have an adverse impact on PBFs that southern green sturgeon need for food resources, sediment quality, and water quality at freshwater riverine sites, estuarine sites, and coastal marine areas. These effects lessen in the estuary as freshwater influences subside and marine influences increase and end in coastal marine areas beyond influences of the Columbia River freshwater plume. PBFs required by eulachon for water quality and substrate in freshwater spawning areas, and for water quality and food in freshwater migration areas, are also likely to be adversely impacted by the proposed action.

The volume of stormwater that would be discharged as a result of the proposed action is very small in comparison to the volume of streamflow downstream, and the impact of pollutants and contaminants in that discharge are also very small when compared to the adverse effects caused by the contaminants in all historical or existing stormwater discharges. Nonetheless, this discharge will incrementally contribute to pollutant levels at the watershed scale owing to the sustained, long-term, and chronic nature of stormwater discharges and the compounding effects of environmental processes that affect the fate and transport of those pollutants.

However, commensurate with the relatively small amount of treated runoff that will be produced as a result of the proposed action, the intensity and severity of resultant adverse effect on species and critical habitats in the action area will be very low. Moreover, any runoff from adjacent impervious surfaces that flows into the footprint of the proposed industrial park that was either previously untreated or under-treated relative to the methods prescribed in SLOPES will now achieve the same level of stormwater treatment as the new industrial park itself, further decreasing the overall adverse effects of this action. Thus, the impacts of the proposed action on species and critical habitat is not expected to reduce the abundance, productivity, or genetic or spatial diversity of any affected population of Pacific salmon, southern green sturgeon, or

eulachon, or reduce the conservation value of any of critical habitat PBFs considered here, at either the site, watershed, or designation scale.

Overall, urban areas are likely to experience continued population growth while redevelopment and private restoration actions will begin to improve negative baseline conditions. In rural areas, agricultural and forestry practices are also likely to continue at a similar scale. 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.

The sunflower sea star is proposed for listing throughout its range, and no data exist to suggest the species is anything other than a single, panmictic population. Therefore, to reach a determination of jeopardy, a proposed action would have to impact range-wide population dynamics. We are not currently aware of any habitat types or locations used by sunflower sea stars for mating or spawning, larvae are planktonic, and newly settled juveniles appear in a variety of habitats. We do not expect any single site-specific action to result in jeopardy, but broad-scale programmatic actions occurring over a substantial portion of the range might result in appreciable reductions in the number, distribution, or reproduction of sea stars.

After reviewing and analyzing the current status of the 16 ESA-listed species and critical habitats considered in this opinion, 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 LCR Chinook salmon; UWR Chinook salmon; UCR spring-run Chinook salmon; SR spring/summer run Chinook salmon; SR fall-run Chinook salmon; CR chum salmon; LCR coho salmon; SR sockeye salmon; LCR steelhead; UWR steelhead; Middle MCR steelhead; UCR steelhead; SR Basin steelhead; Southern DPS green sturgeon; Southern DPS eulachon; or sunflower sea star, or destroy or adversely modify their designated critical habitats.

## **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). "Harass" is further defined by guidance as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." "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 a long-term basis. Adverse effects of the proposed action will include reduced water quality from 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 individuals 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 individuals taken by the pathways described.

In cases such as this, where quantifying a number of individuals 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 ESA-listed species.

1. Each part of the proposed stormwater system described in the proposed action, including all biofiltration facilities, must be inspected and maintained at least quarterly for the first 3 years, at least twice a year thereafter, and at least three times per water year (for the first 3 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 biofiltration facilities within 24 hours after rainfall ends and out of the detention ponds within 48 hours after rainfall ends.
  - b. All stormwater system components must freely convey stormwater.

- c. Desirable vegetation in stormwater facilities 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 biofiltration facilities for longer than 24 hours, or in the detention ponds 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 stormwater facilities (#1c) and corrective action is not taken with respect to #1a-c within 7 days of a required inspection; the extent of take surrogate for stormwater will be exceeded.

The amount and extent of take in this ITS serves two functions: (1) it identifies the quantity of incidental take exempted for the action agency and applicant. In the case of a species without 4(d) protective regulations, such as the sunflower sea star, the exemption is not needed because incidental take is not prohibited; and (2) it serves as a check on NMFS' jeopardy analysis. The amount or extent of take identifies the anticipated level of take NMFS considered in reaching its conclusion that the proposed action will not jeopardize the continued existence of a listed species. If this level of take is exceeded, reinitiation of consultation is triggered to ensure that NMFS' no-jeopardy conclusion remains valid.

### **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” refer to those actions the Director considers necessary or appropriate to minimize the impact of the incidental take on the species (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 Corps will minimize take from exposure to stormwater pollutants associated with new impervious surfaces by ensuring that stormwater runoff produced by impervious surfaces of the Van Duyn Industrial Park 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 Corps 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 federal action agency must comply (or must ensure that any applicant complies) with the following terms and conditions. The Corps or any applicant 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 ensuring installation, function and maintenance of the proposed stormwater facilities during construction.
  - b. Following construction, Ravin Ventures, LLC will assume responsibility for maintenance of all of the system components as described in Section 7.0 of the *Stormwater Management Plan* for the Van Duyn Industrial Park prepared by the Favreau Group, LLC (September 2022) and submitted by the Corps.
  - c. Ravin Ventures, LLC will carry out the stormwater operation and maintenance plan as described by the Favreau Group, LLC (September 2022) including all provisions pertaining to: identification of responsible parties, inspection and maintenance schedule, and inspection and maintenance procedures. Ravin Ventures, LLC will also keep and preserve a log of all maintenance activities.
  - d. Ravin Ventures, LLC 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 Corps shall submit the following reports to NMFS:
    - i. A project completion report within 60-days of completing construction, including:
      1. Project name;
      2. Corps contact person;
      3. Construction completion date.
    - ii. Three annual reports on stormwater facility operation and maintenance for 3 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, such as 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 3 years.
- iii. Each of the above reports must be submitted to:  
[projectreports.wcr@noaa.gov](mailto:projectreports.wcr@noaa.gov)  
Attn: WCRO-2023-00988

### **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**

Under 50 CFR 402.16(a): “Reinitiation of consultation is required and shall be requested by the federal agency where discretionary federal involvement or control over the action has been retained or is authorized by law and: (1) If the amount or extent of taking specified in the incidental take statement is exceeded; (2) If new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) If 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 the biological opinion or written concurrence; or (4) If a new species is listed or critical habitat designated that may be affected by the identified action.”

### **NLAA DETERMINATION**

We reviewed the Corps’ consultation request document and related materials. Based on our knowledge, expertise, and your action agency’s materials, we conclude that the proposed action is not likely to adversely affect the following NMFS ESA-listed species and/or designated critical habitat:

- Southern Resident DPS Killer Whale

### **ESSENTIAL FISH HABITAT RESPONSE**

Thank you also for your request for essential fish habitat (EFH) consultation. NMFS reviewed the proposed action for potential effects on EFH pursuant to section 305(b) of the Magnuson-



Stevens Fishery Conservation and Management Act (MSA), implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

We have concluded that the action would adversely affect EFH designated under the:

- *Pacific Coast Salmon Fishery Management Plan* (PFMC 2024);
- *Pacific Coast Groundfish Fishery Management Plan* (PFMC 2023), and;
- *Coastal Pelagic Species Fishery Management Plan* (PFMC 2019).

### **Magnuson-Stevens Fishery Conservation and Management Act**

Section 305(b) of the MSA directs federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of it and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH (50 CFR 600.905(b)).

### **EFH Affected by the Proposed Action**

The proposed action occurs within EFH for various federally managed fish species within the Pacific Coast Salmon (PFMC 2014); Pacific Coast groundfish (PFMC 2005), and coastal pelagic species (PFMC 2019) Fishery Management Plans.

### **Adverse Effects on EFH**

NMFS determined the proposed action would adversely affect EFH as follows:

- Degraded water quality through the discharge of post-construction stormwater into areas used by Pacific salmon for rearing and migration in freshwater and estuarine areas.

Because the applicant has included measures to minimize effects of the proposed action, NMFS has no additional EFH conservation recommendations to provide at this time. This concludes the EFH consultation.

## Supplemental Consultation

The Corps must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600. 920(l)).

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 Coast Office in Portland, Oregon.

Please contact Annie Birnie in the Willamette Basin Branch of the Oregon Washington Coastal Office at 503-230-5407 or [Annie.Birnie@noaa.gov](mailto:Annie.Birnie@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: Megan Biljan, U.S. Army Corps of Engineers  
Ramon Fisher, Ravin Ventures, LLC

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