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-2022-01530

September 26, 2022

Todd Tillinger
Chief Regulatory Branch
Seattle District, U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, Washington 98124-3755

Re: Endangered Species Act Section 7 Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Bretl and Miller Dock Project, Lake Cushman, Mason County, Washington (NWS-2022-358)

Dear Mr. Tillinger:

On June 27, 2022, we received a request from the U.S. Army Corps of Engineers (USACE), Seattle District for formal consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C 1531 *et seq*.) for the USACE's permitting new construction of an overwater structure in Lake Cushman, Mason County, Washington. Your requests qualified for our expedited review and analysis because it met our screening criteria and contained all required information on, and analysis of, the proposed actions and its potential effects to listed species and designated critical habitat.

On July 5, 2022, the United States District Court for the Northern District of California issued an order vacating the 2019 regulations adopting changes to 50 CFR part 402 (84 FR 44976, August 27, 2019). This consultation was requested when the 2019 regulations were still in effect. As reflected in this document, we are now applying the section 7 regulations that governed prior to adoption of the 2019 regulations. For purposes of this consultation, we considered whether the substantive analysis and its conclusions regarding the effects of the proposed actions articulated in the biological opinion and incidental take statement would be any different under the 2019 regulations. We have determined that our analysis and conclusions would not be any different.

We reviewed the USACE's consultation request, and related initiation package, including Biological Evaluation (BE) and project drawings. Where relevant, we adopted the information and analyses provided in the BE, but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. We adopt by reference here the following sections of the BE:

- Project Description (sections 2.3-2.6, and sections 3 and 8);
- ESA and EFH Species and Habitat Information (sections 4.0-4.5);
- Environmental Baseline Conditions (section 2.1-2.2.6, and section 5);
- Effects of the Action (section 6);
- Determination of Effect;
- References (section 11); and

- Attachments/appendices, including project drawings, photos, maps.

We have provided clarification where we have included additional or unique information to what was provided in the BE. In particular, we have referred to additional published literature and other NMFS biological opinions for our analysis of effects.

We also adopt by reference additional clarifying information provided with the requests for formal consultation, and also in response to our recommendation for implementation of additional minimization and conservation measures. NMFS determined that the BE, project drawings and this additional information provided all necessary information to complete ESA Section 7 consultation. We initiated consultation on July 21, 2022. All consultation documents are available on file at the NMFS Oregon Washington Coastal Office in Lacey, Washington.

Proposed Action

The proposed action includes a new, 16-foot bulkhead, 120 square foot float, 132 square foot pier, 4, 8-inch natural wood piles, and 8, 6-inch natural wood piles. We estimate the useful life of proposed overwater (and associated) structure to be 40 years. See NMFS 2020[1] for detail on estimated useful life of structure.

Action Area

"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 project site is located along the shore of Lake Cushman in Mason County, Washington (see project descriptions in BE). The action area is determined by the greatest extent of effects stemming from the project. In this case, aquatic effects of the project would include all of Lake Cushman to account for recreational boat traffic associated with proposed structure and effects to prey species of salmonids originating in the nearshore and riparian area, but which may move throughout the lake. Therefore, the action area is defined as Lake Cushman.

Status of the Critical Habitat and Species

We consider it reasonably certain that the proposed structure would be likely to adversely affect (LAA) Puget Sound (PS) Chinook salmon (designated threatened on 6/28/2005; 70 FR 37160) and their critical habitat (designated 9/2/2005; 70 FR 52630) and PS steelhead (designated as threatened 5/11/2007; 72 FR 26722). There is no designated critical habitat for PS steelhead in the action area. PS Chinook salmon are currently present within Lake Cushman, including the action area. PS steelhead do not currently occur in Lake Cushman, but are expected to be present in the lake/action area, in the near future based on fish supplementation and fish passage provisions for the Cushman Project (see Settlement Agreement for the Cushman Project, January

[1] NMFS. 2020. Endangered Species Act Section 7(a)(2) Biological Opinion and Letter of Concurrence and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Issuance of Permits for 39 Projects under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for Actions Related to Structures in the Nearshore Environment of Puget Sound. WCRO-2020-01361. November 9, 2020.

12, 2009[2]; and the NMFS' 2010 Supplemental Biological Opinion for the Settlement Agreement[3]). Due to the requirements of these agreements, the future presence of PS steelhead in Lake Cushman is reasonably certain to occur. We therefore anticipate steelhead being exposed to long-term effects of the proposed structures.

We used information in the baseline, species and habitat, and direct effects sections of the BEs describing habitat and fish presence in the action area to assess the habitat condition and function for PS Chinook salmon and steelhead, including PS Chinook salmon critical habitat (there is no designated critical habitat for PS steelhead in Lake Cushman). In particular, we adopt here by reference, the information regarding the current land-locked population of Chinook salmon in the lake, and the nearshore habitat conditions (i.e. existing structures, substrate and vegetation) of the action area and project sites. This includes information on the function of the physical or biological features (PBFs) essential to the conservation of PS Chinook salmon that create the conservation value of their designated critical habitat.

We also used information in the most recent 5-year status review[4] and viability assessments[5][6] for PS salmonids to examine the population status of both species within the action area. We also considered information in the recovery plans for PS Chinook salmon (Shared Strategy for PS 2007[7]) and PS steelhead (NMFS 2019[8]) describing the status, presence, abundance, density or periodic occurrence of listed species, and the condition and location of the species' habitat, including critical habitat.

We used information in the environmental baseline sections of the BEs to examine cumulative effects, including the past and present impacts of federal, state, or private actions, and other human activities in the action area, the anticipated impacts of proposed federal actions 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 consultations in process (50 CFR 402.02). In particular, we adopt here by reference, information in the BEs describing current land uses, water quality and water level fluctuations related to the dams at Lake Cushman, 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 also part of the environmental baseline.

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[2] Available at: https://www.mytpu.org/wp-content/uploads/cushman-dam-settlement-2009.pdf. Accessed September 13, 2020.
[3] NMFS Supplemental Biological Opinion and Essential Fish Habitat Consultation for the Cushman Hydroelectric Project, FERC Project Number 460, March 31, 2010.
[4] NMFS. 2017c. 2016 5-Year Review: Summary and Evaluation of Puget Sound Chinook Salmon, Hood Canal Summer-Run Chum Salmon, and Puget Sound Steelhead. National Marine Fisheries Service, West Coast Region, Portland, OR. April 6, 2017.
[5] NWFSC (Northwest Fisheries Science Center). 2015. Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest.
[6] NWFSC. 2021. Biological viability assessment update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest. In draft.
[7] Shared Strategy for Puget Sound. 2007. Puget Sound salmon recovery plan. Volume 1, recovery plan. Shared Strategy for Puget Sound. Seattle.
[8] NMFS. 2019. ESA Recovery Plan for the Puget Sound Steelhead Distinct Population Segment (*Oncorhynchus mykiss*). National Marine Fisheries Service. Seattle, WA.

Environmental Baseline

Currently, individuals of a landlocked Lake Cushman population of PS Chinook salmon (upstream of Dam Number 1) migrate and rear in the action area, spawning upstream of the lake in the North Fork Skokomish River. The landlocked population is not considered a viable independent population of the PS Chinook salmon evolutionarily significant unit (ESU),[9] and thus they do not contribute to ESU population viability. With upstream and downstream passage provided at the Cushman dams in the future, as well as hatchery supplementation,[10] [11] we expect migratory PS Chinook salmon, as well as PS steelhead, to migrate and rear in the action area.

Both species have declined due to numerous factors. One factor for decline that these species share is degradation of freshwater and estuarine habitat. Human development in the Pacific Northwest has caused significant negative changes to stream and estuary habitat across the range of these species. The status review update for Pacific salmon and steelhead[12] identified the following dominant habitat concerns (i.e. limiting factors for the recovery) for PS Chinook salmon:

- Impaired water quality in fresh and marine waters;
- Lack of access to functional floodplains;
- Lack of access to functional marine shorelines; and
- Impaired passage.

Habitat concerns included in the status review update[12] and identified by NMFS in the recovery plan for the PS steelhead DPS[13] include:

- Fish passage barriers at road crossings;
- Dams, including fish passage and flood control;
- Floodplain impairments, including agriculture;
- Residential, commercial, industrial development (including impervious runoff);
- Timber harvest management;
- Water withdrawals and altered flows;
- Ecological and genetic interactions between hatchery and natural-origin fish;
- Harvest pressures (including selective harvest) on natural-origin fish; and
- Juvenile mortality in estuary and marine waters of PS.

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[9] Ruckelshaus, M.H., K.P. Currens, W.H. Graeber, R.R. Fuerstenberg, K. Rawson, N.J. Sands, J.B. Scott. 2006. Independent populations of Chinook salmon in Puget Sound. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-78, 125 p.

[10] Settle Agreement for the Cushman Project, January 12, 2009. Available at: https://www.mytpu.org/wp-content/uploads/cushman-dam-settlement-2009.pdf. Accessed September 13, 2020.

[11] NMFS Supplemental Biological Opinion and Essential Fish Habitat Consultation for the Cushman Hydroelectric Project, FERC Project Number 460, March 31, 2010.

[12] NMFS. 2017c. 2016 5-Year Review: Summary and Evaluation of Puget Sound Chinook Salmon, Hood Canal Summer-Run Chum Salmon, and Puget Sound Steelhead. National Marine Fisheries Service, West Coast Region, Portland, OR. April 6, 2017.

[13] NMFS. 2019. ESA Recovery Plan for the Puget Sound Steelhead Distinct Population Segment (*Oncorhynchus mykiss*). National Marine Fisheries Service. Seattle, WA.

The most recent (2022) biological viability assessment update for Pacific salmon and steelhead[14] provides similar findings. It concludes that all PS Chinook salmon populations continue to remain well below the TRT planning ranges for recovery escapement levels, and that most populations, including the Skokomish River population, remain consistently below the spawner-recruit levels identified by the TRT as necessary for recovery. However, it also finds that most populations have increased somewhat in abundance since the last status review in 2016, though most still have small negative trends over the past 15 years, with productivity remaining low in most populations.

The 2022 biological viability assessment update identified a slight improvement in the viability of the PS steelhead DPS since the PS steelhead technical review team concluded that the DPS was at very low viability, as were all three of its constituent major population groups (MPGs), and many of its 32 demographically independent populations (DIPs), including the Skokomish River population. The assessment update reported observed increases in spawner abundance in a number of populations over the last five years, which were disproportionately found within the South and Central Puget Sound and Strait of Juan de Fuca and Hood Canal MPGs, and primarily among smaller populations, including the Skokomish River population. The draft update concluded that recovery efforts in conjunction with improved ocean and climatic conditions have resulted in an increasing viability trend for the PS steelhead DPS, although the extinction risk remains moderate.

As described in the BEs, the environmental baseline within the North Fork Skokomish River Watershed, including the action area, is degraded by a host of anthropogenic changes. Within the action area, numerous public and private residential structures, such as shoreline armoring (e.g. bulkheads), piers, ramps and floats have modified natural habitat conditions, and degraded nearshore habitat quality and function.

Tacoma Power's Cushman Dam Number 1 and Number 2, and associated structures, have modified habitat conditions and inhibit fish migrations. Dam operations and regulation of the hydrology of Lake Cushman and Lake Kokanee reservoirs, and the North Fork Skokomish River has also greatly modified fish habitat. Because of Cushman Dam Number 1, water levels in the lake can fluctuate up to 21 meters (69 feet), and periodically inundate up to 12 hectares (30 acres) of land surrounding the inlet to the reservoir (Lake Cushman). Additionally, as a result of fluctuating water levels exposing much of the shoreline during winter months, there is little to no aquatic vegetation in the nearshore, and the lakebed of the nearshore is steep and severely scoured. These conditions limit the productivity of the Lake Cushman nearshore.

Effects of the Action

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

[14] Ford, 2022. Biological viability assessment update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest.

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 sections of the of the BE describing effects of the proposed actions and ESA effects determinations provide a detailed discussion and comprehensive assessment of the effects of the proposed actions, and are adopted here pursuant to 50 CFR 402.14(h)(3)(i). NMFS evaluated these sections of the BE and after our independent, science-based evaluation, determined that it meets our regulatory and scientific standards.

PS Chinook salmon are likely to be present within the action are during in-water construction activities. As described in the BE, effects of the proposed construction action would be short-term (approximately 60-day or shorter construction period), localized and minor, and we do not anticipate adverse effects from construction-related activities to designated critical habitat or ESA-listed species. Construction would occur when Lake Cushman water levels are low (below construction area) to minimize potential suspension of sediment (turbidity). We anticipate that any elevated turbidity levels resulting from heavy precipitation during construction, or by the first inundation of the site when lake water levels rise in the spring would be localized and minor, and would not result in a measurable reduction in habitat quality, or conditions harmful to listed fishes.

As described in the BEs, best management practices would be implemented to reduce construction related effects, such as preserving natural vegetation, implementing concrete handling practices to prevent input into surface waters, and the use of silt fencing to prevent sediment delivery to surface waters.

In addition to short-term construction-related effects, the proposed project is a new structure. Thus, we evaluate the effects of the structures on species and habitat over the expected design life as a consequence of the action. We note at the outset that the applicants have proposed minimization and conservation measures to avoid or minimize some of effects, these measures include:

- All work would take place in the dry when the water level is drawn down.
- Erosion control and sedimentation Best Management Practices (BMPs) will be implemented, as needed, during the proposed work to protect the water quality within the Action Area from possible impacts.
- No pile driving or heavy machinery would be used in order to minimize noise impacts to the greatest extent practicable to achieve project goals.

Each of these measures reduces effects during construction, and reduces the potential exposure of fish to noise, turbidity, and general disturbance during construction. PS chinook at any lifestage present during work that are exposed to these project effects are expected to respond with avoidance behaviors which prevent any injury from occurring. Avoidance behavior abates within a minute to days after work ceases (Schreck et al. 1997)[15] PS steelhead, not being present in the lake, will not experience any construction effects.

[15] Schreck, C.B., B.L. Olla, and M.W. Davis. 1997. Behavioral Response to Stress. *In: Fish Stress and Health in Aquaculture.* G.K Iwama, A.D. Pickering, J.P. Sumpter, and C.B. Schreck, editors. 1997.

The proposed in- and over-water structure would have long term effects on PS Chinook salmon (and steelhead, once re-established in the lake), by degrading habitat quality within the action area, including designated critical habitat for PS Chinook salmon. All of Lake Cushman (the action area) is designated as critical habitat for PS Chinook salmon. As described the BE, the proposed structure itself would have long-term, direct effects on the quality and availability of habitat, including critical habitat for PS Chinook salmon.

The Physical and Biological Features (PBFs) of PS Chinook salmon critical habitat in all of the action area include:

- Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks; and
- Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

Reasonably likely adverse habitat effects of the proposed permanent structure would be dependent on the type of structures proposed. We anticipate that the new structure would have several effects on ESA-listed species and designated critical habitat as a consequence of the proposed project. These effects include habitat loss/displacement, overwater shading, degraded riparian habitat quality and reduced shallow water habitat.

These habitat alterations may diminish the function and quality of PBFs of critical habitat for PS Chinook salmon. Because PS steelhead adults and juveniles would be expected to use the same habitat in the action areas as PS Chinook salmon, although to varying degrees, we expect effects on PS Chinook critical habitat to similarly adversely affect PS steelhead habitat. The direct long-term habitat effects of permanent structures would slightly diminish the availability and function of habitat serving multiple generations of both PS Chinook salmon and PS steelhead over the life of the structures. The following effects pathways apply to the proposed action.

We estimate the life of proposed new structure to be 40 years. Effects of the proposed structure are assessed in this biological opinion based on this expected life of the structure. Therefore, we have not assessed effects of the proposed action beyond 40 years, and any activity (e.g., maintenance or repair) that extends the life of the structure beyond this is not included in our assessment of effects.

Habitat loss/displacement

As detailed in the BE and project drawing, the benthic footprint of the proposed structures below ordinary high-water mark (OHWM; 738 feet in Lake Cushman) would reduce available benthic habitat for fish. This would cause a small but long-term reduction or modification to available nearshore habitat for rearing and migration. This would also result in a slight reduction to forage

where benthic and aquatic organisms are displaced. The area of water column occupied by structure below the OHWM would displace available aquatic habitat for fish. This results in a small, localized, but long-term reduction in available nearshore lake habitat for juvenile and adult PS Chinook salmon and steelhead for about half of the year, when water levels are high enough to wet the project site.

Overwater shading

Shading of the nearshore by overwater structures (piers, ramps and floats) causes migration delays for juvenile PS Chinook salmon, which are nearshore-oriented (see NMFS 2017 and NMFS 2020). Juvenile PS Chinook salmon have been observed pausing at shade created by overwater piers, ramps and floats, before proceeding through or around the shaded area. When individual fish move to deeper water to avoid shaded areas, they are exposed to an increased risk of predation (i.e., larger predatory fish in deeper water). Delays to their migration also increases their risk of exposure to predators, particularly given the minimal aquatic vegetation and terrestrial riparian vegetation available as cover in Lake Cushman. We expect the shade created by the proposed overwater structure to thus increase predation of juvenile PS Chinook salmon.

The grating proposed for the overwater structure, as described in the BE would permit some light penetration, reducing potential shade effects. The proposed reduction in overwater coverage surface area for removal of the derelict dock would also reduce the total shaded area, compared to the structure being replaced. While these measures reduce potential shading effects, the replacement structure would retain some habitat disruption effects over the life of the structure.

Degraded riparian habitat quality

The proposed 16-foot bulkhead would result in the absence of riparian vegetation for the life of the structure. The bulkhead will result in reduced density of riparian vegetation compared to natural shorelines in the action area. Additionally, the bulkhead would increase the vertical and horizontal distance between the riparian vegetation along the top of the bulkhead/bank and the lake, reducing riparian habitat quality. This would reduce overwater cover for fish in the nearshore and also reduced recruitment of large woody debris that provide in-water cover.

A reduction in riparian vegetation would also result in reduced input of detritus and terrestrial insects, thereby causing a reduction to forage potential for juvenile PS Chinook salmon and steelhead (see Kahler et al. 2000[16]; Tabor et al. 2010[17]). Because the input of woody debris, detritus and terrestrial insects influences primary productivity and forage potential, effects are anticipated in the nearshore area immediately adjacent to the structures, as well as further out into the action area.

[16] Kahler, T., M. Grassley and D. Beauchamp. 2000. A Summary of the Effects of Bulkheads, Piers and Other Artificial Structures and Shorezone Development on ESA-listed Salmonids in Lakes. Prepared for City of Bellevue. Final Report. July 13, 2000.

[17] Tabor, R.A., K.L. Fresh, R.M. Piaskowski, H.A. Gearns and D.B. Hayes. Habitat Use by Juvenile Chinook Salmon in the Nearshore Areas of Lake Washington: Effects of Depth, Lakeshore Development, Substrate, and Vegetation. *North American Journal of Fisheries Management*, 31(4), pp. 700-713.

Reduced shallow-water habitat

The proposed shoreline bulkhead is expected to result in reduced shallow water habitat along the shoreline of the action area (see NMFS 2017[18]; NMFS 2020[19]), which juvenile salmonids use for rearing and migration, particularly juvenile PS Chinook salmon, which are nearshore oriented during their outward migration from natal streams to the Pacific Ocean. This would result in reduced shallow water along the length of the proposed bulkhead, thereby requiring juvenile salmonids to move through deeper water where they are more susceptible to encountering larger predatory fish. While the footprint of this habitat diminishment is small, because the impacts will occur during the duration of the extended life of the structures, we expect that many PS Chinook salmon would be exposed to it over time.

Effects pathways summary

As described above, we expect reductions to the cover and forage PBFs of rearing and migration habitat, as well as barriers to migration created by overwater structure. Therefore, we anticipate a minor but detrimental effect on the critical habitat quality for PS Chinook salmon within Lake Cushman. We expect these effects to be measurable for critical habitat under and adjacent to the proposed structure, but very small relative to total critical habitat for PS Chinook salmon in the action area and the broader area of Lake Cushman and the North Fork Skokomish River basin.

We anticipate all long-term habitat alterations resulting from the proposed structure to be localized to the area adjacent to the proposed structure. When PS Chinook salmon and PS steelhead are exposed over the life of the structure to these reductions in available habitat and habitat quality, it could harm a small number of juveniles rearing or migrating through the action area. This harm would occur in the form of predation (injury or death) or migration delay (interruption of an essential life history function).

Cumulative Effects

"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. The BE discusses cumulative effects and identify continued population growth and development, global warming and over fishing as non-federal activities reasonably certain to occur within the action area; we adopt and incorporate that discussion and

[18] NMFS. 2017. Endangered Species Act Section 7(a)(2) Biological Opinion and Letter of Concurrence and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Integrated Restoration and Permitting Program (IRPP) for Lakes Washington and Sammamish. WCR-2016-5278. February 17, 2017.

[19] NMFS. 2020. Endangered Species Act Section 7(a)(2) Biological Opinion and Letter of Concurrence and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Issuance of Permits for 39 Projects under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for Actions Related to Structures in the Nearshore Environment of Puget Sound. WCRO-2020-01361. November 9, 2020.

analysis here by reference. We also expect recreational use of the lake (e.g. boating) to continue, and increase with population growth and development.

Integration, Synthesis and Conclusion

Integration and synthesis of information for the status of species, environmental baseline, effects of the actions, and cumulative effects is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed actions. Here, we add the effects of the actions to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate our biological opinion as to whether the proposed actions are 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.

The proposed action would have minor, localized habitat effects that would affect a small of area of critical habitat negatively during the life of the structures, and expose multiple individual fish to those poor habitat conditions. However, when added to the baseline condition of habitat, and considering the viability characteristics of (status of) PS Chinook, the increment of detriment, both temporary and long-term, is insufficient to alter the conservation role of the habitat, and the response of the populations are expected to be minor and the number of fish injured or killed too small to meaningfully influence the VSP parameters of PS Chinook salmon or steelhead populations. The proposed action would not reduce the likelihood of survival and recovery of either species. The proposed action are also not likely to result in appreciable reduction in the value of designated PS Chinook salmon critical habitat for the conservation of the species. 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 PS Chinook salmon and PS steelhead, nor destroy or adversely modify PS Chinook salmon critical habitat.

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. This ITS is valid for PS steelhead if and when fish from this DPS are reintroduced to Lake Cushman.

Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

- Harm to juvenile PS Chinook salmon from increased predation risk as a result of fish being forced into deeper water where shallow-water habitat is reduced;
- Harm to juvenile and adult PS Chinook salmon and PS steelhead from reduced habitat availability and forage; and
- Harm to juvenile PS Chinook salmon from increased predation risk as a result of reductions to in-water and over-water cover associated with reduced riparian vegetation abundance and proximity.

The distribution and abundance of fish that occur within the action area are affected by habitat quality, competition, predation, and the interaction of processes that influence genetic, population, and environmental characteristics. These biotic and environmental processes interact in ways that may be random or directional, and may operate across far broader temporal and spatial scales than are affected by the proposed actions. Thus, the distribution and abundance of fish within the action area cannot be attributed entirely to habitat conditions, nor can NMFS precisely predict the number of fish that are reasonably certain to be injured or killed if their habitat is modified or degraded by the proposed actions. In such circumstances, NMFS cannot provide an amount of take that would be caused by the proposed actions.

As all habitat pathways for harm are related to the presence of the proposed bulkhead, overwater and in-water structure, the best available indicator for the extent of take by reduced forage, rearing and migration habitat and increased predation from the proposed actions is the footprint/surface area of all structures below the ordinary high-water mark (OHWM; 738 feet), which can be observed and monitored by dimensions of the structures.

Extent of take from the In-water and Over-water Structures

The physical size (surface area) of in- or over-water structures is the best available surrogate for the extent of take from habitat loss/displacement and from exposure to the structure itself. Habitat loss/displacement (e.g. benthic footprint) is directly related to the area occupied by in-water structure. The amount of overwater structure directly determines the amount of shaded area and migration obstruction. The likelihood of avoidance and the distance required to swim around a structure would both increase as the size of a structure and the intensity of its shadow increase, which would increase the number of juveniles that enter deeper water where vulnerability to predators would be increased. The proposed action includes an 8-foot by 15-foot float (120 square feet), a 6-foot by 22-foot pier (132 square feet), 4, 8-inch piles, and 8, 6-inch pier piles.

The extent of these impacts on fish movement, and on habitat loss/displacement would increase or decrease depending on structure size. Any exceedance of this indicator (surface area) for take the action, will trigger the reinitiation provisions of this opinion. Although this surrogate measure of incidental take is coextensive with some aspects of the proposed action, it nevertheless serves as an effective reinitiation trigger because it can be readily monitored and if exceeded, the USACE can seek compliance.

Extent of take from the Bulkhead

The physical extent (length) of the bulkhead is the best available indicator for the extent of take from decreased habitat function caused by bulkhead. Bulkheads reduces shallow water habitat, which results in increased predation risk for juvenile salmonids, particularly nearshore-oriented juvenile Chinook salmon. Bulkheads also result in degraded riparian habitat conditions, reducing overwater and in-water cover that also increases predation risk. Reduced riparian habitat area and quality also reduces adjacent aquatic habitat productivity, which limits forage for juvenile and adult PS Chinook salmon and steelhead. The 16-foot length of shoreline armoring directly correlates to degraded habitat quality, leading to harm resulting from increased predation and reduced forage.

The extent of these effects would increase or decrease depending directly on structure length (linear length) along the shoreline. Any exceedance of this indicator for take for each individual action, will trigger the reinitiation provisions of this opinion. Although this surrogate measure of incidental take is coextensive with the proposed action, it serves as an effective reinitiation trigger because it can be readily monitored and if exceeded, the USACE can seek compliance.

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 actions, are 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” (RPMs) are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

The USACE shall:

1. Monitor the construction for each proposed action to ensure that it conforms to all design specifications and implements best management practices, including all proposed mitigation measures.

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 USACE 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 applicant does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following term and condition implements RPM 1:

    a. The applicant must report to projectreports.wcr@noaa.gov (refer to WCRO-2022-01530) within 60 days of project completion, as-built documentation including:
        i. All bank armoring structures (i.e. riprap, bulkhead) to demonstrate that the footprint and the length of the structures does not exceed the proposed design: 16-foot bulkhead.
        ii. All overwater (i.e. piers, ramp and float) and in-water structure (i.e. piles, pile stabilizing material) to demonstrate that the surface areas do not exceed the proposed design: 120 square foot float, 132 square foot pier, 4, 8-inch piles, 8, 6-inch piles.
    b. Verification (photo or other reporting) that all proposed BMPs and conservation measures were implemented, including all proposed mitigation measures.

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 actions on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

The USACE should identify and implement nearshore habitat enhancement or restoration activities in the Lake Cushman Basin, including the action area, or elsewhere in the North Fork Skokomish River watershed that:

1. Improve the quality of riparian habitat to increase cover and forage for juvenile migration and rearing; and
2. Remove existing in-water structures such as docks, piles and bulkheads that are no longer in use.

Please notify NMFS if the USACE carries out this recommendation so that we will be kept informed of actions that are intended to improve the conservation of listed species or their designated critical habitats.

Reinitiation of Consultation

This concludes formal consultation for the USACE's proposal to authorize the overwater and in water structure in Lake Cushman. If the applicant fails to implement the portion of the RPA applicable to their individual project, the project will not be covered by the take exemption described in the Incidental Take Statement (ITS) for this Opinion, and could become subject to

the "take" prohibitions under Section 9 of the ESA. This circumstance would not automatically trigger re-initiation requirements.

As 50 CFR 402.16 states, re-initiation of consultation is required and shall be requested by the federal agency or by the Service where discretionary federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion, (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 the biological Opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

MAGNUSON STEVENS ACT ESSENTIAL FISH HABITAT CONSULTATION

NMFS also reviewed the proposed projects for potential effects on EFH designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination the USACE made regarding the potential effects of the actions. 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. The proposed action and action area for this consultation are described in this document. The action area includes areas designated as EFH for various life-history stages of Pacific Coast salmon. Based on information provided by the action agency and the analysis of effects presented in the ESA portion of this document, NMFS concludes that proposed actions would have adverse effects on EFH designated for Chinook, coho, and pink salmon. These effects include a long-term reduction in habitat availability, reduced cover and forage, and increased predation risk as a result of proposed permanent structure below the OHWM of Lake Cushman.

EFH conservation recommendations include:

1. Habitat Enhancement: The USACE should implement nearshore habitat enhancement and restoration activities in the Lake Cushman Basin or elsewhere in the North Fork Skokomish River watershed that:
    a. Improve the quality of riparian habitat to increase overwater cover and forage for juvenile migration and rearing; and
    b. Remove old in-water structures such as docks, piles and bulkheads that are no longer in use.

Fully implementing these EFH conservation recommendations would protect, by avoiding or minimizing the adverse effects described previously, designated EFH for Pacific Coast salmon.

As required by section 305(b)(4)(B) of the MSA, the USACE must provide a detailed response in writing to NMFS within 30 days after receiving a Conservation Recommendation. Such a response must be provided at least 10 days prior to final approval of the actions if the response is inconsistent with any of NMFS' EFH Conservation Recommendations unless NMFS and the

federal agency have agreed to use alternative time frames for the federal agency response. The response must include a description of measures proposed by the agency for avoiding, minimizing, mitigating, or otherwise offsetting the impact of the activity on EFH.

In the case of a response that is inconsistent with the Conservation Recommendations, the federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the actions and the measures needed to avoid, minimize, mitigate, or offset such effects (50 CFR 600.920(k)(1)).

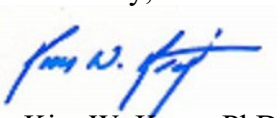
In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, we ask that in your statutory reply to the EFH portion of this consultation, you clearly identify the number of conservation recommendations accepted.

The USACE must reinitiate EFH consultation with NMFS if the proposed actions are 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 Coastal Office in Lacey, Washington.

Please direct questions regarding this letter to Bonnie Shorin, at Bonnie.Shorin@noaa.gov or (360) 995-2750, in the Oregon Washington Coastal Office in Lacey, Washington.

Sincerely,



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

cc: Pamela Sanguinetti, USACE