

**FINAL**

**ENVIRONMENTAL ASSESSMENT**

**OF AMENDMENT 23**

**TO THE**

**PACIFIC COAST SALMON FISHERY MANAGEMENT PLAN:  
PACIFIC FISHERY MANAGEMENT COUNCIL'S HARVEST  
CONTROL RULE FOR SOUTHERN OREGON/NORTHERN  
CALIFORNIA COAST COHO SALMON**

(REGULATORY TRACKING IDENTIFIER NUMBER: 0648-XC119)

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## Acronym List

CFR- Code of Federal Regulations  
 Council- Pacific Fishery Management Council  
 DNA- Deoxyribonucleic Acid  
 EA- Environmental Assessment  
 EEZ- Exclusive Economic Zone  
 EO- Executive Order  
 ESA- Endangered Species Act  
 ESU- Evolutionarily Significant Unit  
 FMP- Fishery Management Plan  
 FR- Federal Regulation  
 FW- Freshwater  
 HCR- Harvest Control Rule  
 IPHC- International Pacific Halibut Commission  
 MMPA- Marine Mammal Protection Act  
 MSA- Magnuson-Stevens Fishery Conservation and Management Act  
 NEPA- National Environmental Policy Act  
 NMFS- National Marine Fisheries Service  
 NOAA- National Oceanic and Atmospheric Administration  
 NWFSC- Northwest Fisheries Science Center  
 RPA- Reasonable and Prudent Alternative(s)  
 SONCC- Southern Oregon/Northern California Coast  
 SRKW- Southern Resident Killer Whale

## 1.0 Introduction

Ocean salmon fisheries in Federal waters of the exclusive economic zone (EEZ), 3-200 nautical miles off the West Coast states of California, Oregon, and Washington, are managed by the Pacific Fishery Management Council (Council). Under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Council has developed, and National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS) has approved, the Pacific Coast Salmon Fishery Management Plan (FMP) (PFMC 2021a), which sets out the framework under which the fisheries are managed. Before approving an FMP, or an FMP amendment, NMFS, as delegated by the Secretary of Commerce, must make a determination that the FMP or amendment is consistent with the MSA and other applicable law, which includes the Endangered Species Act (ESA). If a fishery may affect salmon stocks listed as threatened or endangered under the ESA (i.e., result in a "take" of an ESA-listed species<sup>1</sup>), NMFS conducts a formal consultation under section 7 of the ESA to evaluate fishery impacts, and issues a biological opinion to report the findings. The Council and NMFS implement any reasonable and prudent measures required by the opinion, or, if the opinion concludes the fishery is likely to jeopardize the continued existence of the listed salmon, implement the reasonable and prudent alternative described in the opinion. Southern Oregon/Northern California Coast (SONCC) coho salmon are an ESA-listed Evolutionarily Significant Unit (ESU) (Waples 1991) classified as endangered under the ESA (70 Federal Regulation (FR) 69903, November 18, 2005).

At its June 2020 meeting, the Council established the ad-hoc SONCC Coho Salmon Workgroup (Workgroup) ([June 2020 Agenda Item E.1.a](#))(Appendix 1) to address the effects on SONCC coho of implementing the effects of Council-managed ocean salmon fisheries on SONCC coho and develop a new control rule for the ESU for Council consideration. The Workgroup included representatives from West Coast tribes (specifically the Hoopa Valley Tribe and the Yurok Tribe); the states of California and Oregon, the PFMC, NMFS' West Coast Region, Northwest Fisheries Science Center, (NWFSC) and Southwest Fisheries Science Center; (SWFSC); and the U.S. Fish and Wildlife Service (USFWS). The Workgroup submitted a final draft risk assessment which evaluated the risk of extinction of representative population units within the SONCC Coho Salmon ESU and effects to fisheries over a range of harvest control rules to the Council at its November 2021 meeting (PFMC 2021d).

At its January 2022 emergency meeting, based on the Workgroup's analysis (PFMC 2021c) the Council recommended amending the FMP with new harvest control rules, developed through the Council process, for consideration by NMFS (PFMC 2022). This environmental assessment (EA) analyzes the environmental effects of implementing management measures under such an amendment, including these new harvest control rules, for SONCC coho salmon.

This EA is being prepared using the 2020 CEQ NEPA Regulations as modified by the Phase I 2022 revisions. The effective date of the 2022 revisions was May 20, 2022 and reviews begun after this date are required to apply the 2020 regulations as modified by the Phase I revisions unless there is a clear and fundamental conflict with an applicable statute. This EA began on June 15, 2022 and accordingly proceeds under the 2020 regulations as modified by the Phase I revisions.

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<sup>1</sup> Under the ESA, the term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (50 Code of Federal Regulations (CFR) 222.102).

### ***1.1 Purpose and Need***

The purpose is to incorporate new and all contemporary information on SONCC coho salmon populations and stock status into control rules limiting impacts on SONCC coho salmon that meet the requirements of the MSA, ESA and other applicable laws.

The need for the Proposed Action is to determine if the proposed Harvest Control Rules (HCR) for the SONCC Coho Salmon ESU for Council consideration would:

- allow fishing on abundant salmon stocks while not impeding the recovery of SONCC coho salmon;
- establish HCRs in the form of fixed or tiered exploitation rates (ERs)<sup>2</sup> including consideration of control rules which reduce ERs at low abundance levels, and which may include minimum or target spawner levels;
- assess a range of control rules including marine and freshwater fisheries combined, the marine and freshwater fisheries components separately, and marine fisheries only, affecting SONCC coho salmon as appropriate, given potential data limitations, and what is feasible to accomplish within the specific timeline (See Appendix A in PFMC (2021c) for the timeline);
- evaluate the feasibility of considering the status of subcomponents of the ESU (e.g., Rogue River, Klamath and Trinity rivers, and Eel River), marine and freshwater environmental conditions, and other relevant factors as appropriate and as supported by the data available.

### ***1.2 Proposed Action***

The Proposed Action is NMFS's decision on whether to approve, disapprove or partially approve amending the FMP by adopting one or more HCRs as proposed by the Council that represent appropriate impact levels to SONCC coho salmon from Council-managed salmon fisheries beginning in 2022, continuing into the future.

### ***1.3 Analysis Area***

The Proposed Action affects Council-managed salmon fisheries that impact SONCC coho salmon (Figure 2) while taking into account fishing-related impacts to the ESU in freshwater fisheries. These fisheries occur in California and, in some cases, north of California; therefore, the analysis area is the EEZ.

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<sup>2</sup> "Exploitation rate" is a fishery management term, defined as the proportion of a stock or population of fish that are caught in all fisheries (marine and freshwater) during a certain period, in this case a year.



**Figure 1.** Map of Pacific Coast showing major salmon fishing ports, PFMC salmon management areas, and the EEZ.

### 1.4 Public Involvement

The alternatives analyzed in this document were developed through an interactive Council process. This process involved discussion at Council meetings, and seven meetings of the Workgroup. All these meetings were open to the public and announced in the *Federal Register*. These meetings included tribal participation and engagement, particularly from the Hoopa Valley Tribe and Yurok Tribe. These meetings were streamed live online and opportunity for public comment was provided. Workgroup meetings were held online in June, August and October of 2020 and in January, April, June, and October of 2021.



A draft version of this EA was also made available for public comment beginning August 18, 2022 through October 3, 2022 (87 FR 50824). Comments are published online at <https://www.regulations.gov/document/NOAA-NMFS-2022-0065-0003>.

This public comment period resulted in NMFS receiving three comments from private citizens and one comment letter from the U.S. Environmental Protection Agency (EPA) (attached in Section 10, Appendix 2). One of the three comments from private citizens was in support of the Amendment's adoption, while the other two comments were outside the scope of the proposed action. NMFS considered the public comments within the scope of the proposed action in the finalization of this EA by clarifying tribal engagement (see 1.0 Introduction and 1.4 Public Involvement) based on comments from the EPA, and considering support for the preferred alternative in NMFS's decision on whether to approve, disapprove or partially approve Amendment 23.

## 2.0 Description of Alternatives

In its report presented to the Council at its June 2021 meeting ([E.1.a Workgroup Report 1](#)), the Workgroup assessed a suite of HCRs for analysis using their risk assessment model. Based on the previous assessment, the Council narrowed the range of alternatives for further consideration at this point. The range considered a suite of constant, total (marine and freshwater) ER HCRs within the scope of Council guidance. Table 1 summarizes the attributes of the range of HCRs adopted by the Council for further evaluation. Control rule 1 is specified as a total ER of zero, and is included only to provide a reference for population modeled risk outcomes in the absence of fisheries. For the purposes of this National Environmental Policy Act (NEPA) analysis the alternatives considered were: status quo (consistent with current harvest level), the zero exploitation rate scenario, an ER of 15 percent overall with the exception of an ER of 16 percent specifically for Trinity Rivery populations (Preferred Alternative), and an ER of 20 percent overall. These alternatives represent the range of potential impacts based on the levels of exploitation considered by the Council.

**Table 1.** Candidate constant total ocean and freshwater (FW) ER control rules for the SONCC Coho Salmon ESU. Control rules that will be considered as part of Alternatives 2, 3, and 4 are shaded, note that control rules 5 and 6 are both included as part of the Preferred Alternative.

Control Rule	Maximum ER
1	0.00
2	0.07
3	0.13
4	0.14
5	0.15
6	0.16
7	0.17
8	0.18
9	0.19
10	0.20

### 2.1 Alternative 1, No Action or Status Quo

Under the No Action Alternative, the ocean fisheries under the jurisdiction of the Council will continue to be managed consistent with the reasonable and prudent alternative(s) (RPA) analyzed

in a biological opinion completed by NMFS in 1999. In 1999 NMFS developed a three-part RPA to the implementation of the FMP at that time, that when taken together was found not likely to jeopardize the species. The RPA required: (1) that management measures developed under the FMP achieve an ocean exploitation rate on SONCC coho salmon, as indicated by Rogue/Klamath coho salmon hatchery stocks, of no more than 13 percent; (2) prohibition of coho salmon-directed fisheries and coho salmon retention in Chinook salmon-directed fisheries off of California; and (3) that sampling and monitoring of Council fisheries be conducted. Council salmon fisheries have been managed consistent with the RPA since that time and the 13 percent ER limit for the incidental harvest of SONCC coho salmon was incorporated in to the FMP as a HCR for limiting fishery impacts on the ESU. The Workgroup identified the HCRs that are representative of the status quo, as each population was subject to potentially different freshwater harvest under status quo conditions. To perform this assessment, they estimated mean total ERs for the six SONCC coho salmon population units available, which were compared to identify the candidate HCRs that most closely corresponded to observed post season ERs. The population units used in this analysis were:

- two populations (Shasta and Scott rivers);
- a component of the Upper Klamath River population (Bogus Creek);
- a component of the Humboldt Bay Tributaries population (Freshwater Creek), and
- two population aggregates (Rogue and Trinity rivers).

Average total ERs for each population or population unit were estimated over the 2007–2019 time period, the range of years for which data are available for all SONCC coho salmon population units. For the Trinity River population unit, the ER for 2018 was determined to be an outlier and therefore omitted<sup>3</sup>. As the SONCC coho salmon population units considered here are subjected to different fisheries in freshwater, a single status quo HCR from the candidate rules in Table 1 could not be identified. Rather, different ERs are representative of the status quo for the different population groupings. For the Rogue River and Freshwater Creek populations, which are assumed to have minimal or no freshwater harvest, the mean total ER was 5.2 percent. Bogus Creek, Shasta River, and Scott River populations are subjected to the same ocean and freshwater fisheries and have identical mean ERs of 11.4 percent over the 2007–2019 period. The Trinity River aggregate has a mean ER of 14.9 percent. Although the current HCR consistent with the 1999 opinion and this alternative would allow for up to 13 percent ER in ocean fisheries, recent ocean salmon fishery ERs have averaged 5.5 percent because other salmon species and stocks have provided greater constraints on fisheries in the ocean. Under the No Action or Status Quo Alternative, the ocean fisheries would continue being managed under the existing HCR limit, but are assumed to utilize the full 13 percent allowed under current management, and would account for freshwater areas catching their recently observed average of SONCC coho salmon as reported here. By doing so, NMFS (2022) found that when combining the status quo ER limit in Council-managed fisheries of 13 percent with the rates observed post season in freshwater areas resulted in average total ERs ranging from 19.2 percent (on the Scott or Shasta rivers populations units), to 23.7 percent total in the Trinity River population, with the Bogus population unit percent in between with a total of 19.3 percent.

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<sup>3</sup> The 2018 exploitation rate for the Trinity River was considered an outlier due to a very small number of program marks applied at Willow Creek Weir, and corresponding high uncertainty.

## ***2.2 Alternative 2, Preferred Alternative (0.15 Maximum ER, 0.16 Maximum ER Trinity Populations)***

Alternative 2 was recommended to NMFS as the Council's Preferred Alternative. The recommended alternative would limit total fishery ERs on each of the five individual representative populations or population units within the SONCC Coho Salmon ESU to no more than 15.0 percent annually, except for the Trinity River population unit (represented by the Upper Trinity River, Lower Trinity River, and South Fork Trinity River populations). This alternative applies control rule 6 (a 16.0 percent constant limit on the total ER) on the Trinity River population units and control rule 5 on the remaining populations or population units.

## ***2.3 Alternative 3, Control Rule 1 (0.00 Maximum ER)***

Under Alternative 3 no fishing would occur in ocean fisheries or freshwater fisheries (i.e. a total ER of zero). This alternative is included only to provide a reference for population outcomes in the absence of fisheries, and to analyze the full range of impacts that may occur with a variety of HCRs.

## ***2.4 Alternative 4, Control Rule 10 (0.20 Maximum ER)***

Alternative 4 is a 20.0 percent constant ER for ocean and freshwater fisheries, or control rule 10. This alternative was chosen once again to demonstrate the full range of impacts due to HCR implementation under consideration for final proposed amendment selection by the Council. As Alternative 3 represents a possible lowest level of impact, Alternative 4 represents the highest level of impact under consideration by the Council.

## ***2.4 Alternatives Considered but Rejected from Further Analysis***

In addition to aggregated, constant, total ER HCRs, the Council initially considered a broader set of HCRs that included abundance-based ([E.1.a. Workgroup Report 1, June 2021](#)) and matrix-based control rules in which the allowable ERs fluctuates with the projected abundance or other indicator(s) of stock status, i.e., control rules with tiers that reduce ERs at low abundance or status levels. Furthermore, the initial suite of HCRs included a constant, total ER control rule representing an ER twice the current control rule, HCRs that would apply to ocean fisheries only, and abundance-based HCRs that applied at various levels of resolution from individual population units to abundance aggregated across the six population units.

The feasibility and effectiveness of these control rules depend upon the following considerations.

*Data considerations* — run reconstruction data (inclusive of ocean and freshwater abundance and pertinent predictors such as marine survival), with a record of sufficient length.

*Statistical considerations* — meaningful relationships exist between potential forecast predictors and ocean abundance.

*Practical considerations* — stable monitoring programs that support timely reporting of estimates. Additional collaborative/co-management data compilation, review and agreement process(es) necessary to make such information useful to Council management each year.

The Workgroup determined that many of these types of HCRs were not feasible to implement in the short term due to limited data, or that the additional analyses required to assess some HCRs were not considered feasible to accomplish within the Workgroup’s timeline (PFMC 2021c). Table 2 summarizes the attributes of constant-rate and abundance-based HCRs eliminated from further consideration.

**Table 2.** Attributes of control rules (excluding matrix-based control rule) eliminated from further consideration. The number of separate components column refers to the number of discrete harvest controls within a particular control rule.

Control Rule	Form of ER	Number of separate components	ER type	Minimum ER	Maximum ER	ER at median abundance
4	constant ER	1	Ocean and FW	0.26	0.26	0.26
5	constant ER	1	Ocean	0.07	0.07	0.07
6	constant ER	1	Ocean	0.13	0.13	0.13
7	constant ER	1	Ocean	0.26	0.26	0.26
8	N-based ER	4	Ocean and FW	0	0.25	0.15
9	N-based ER	3	Ocean and FW	0	0.25	0.15
10	N-based ER	1	Ocean and FW	0	0.25	0.15
11	N-based ER	1	Ocean	0	0.25	0.15

### 3.0 Affected Environment

This chapter describes the resources identified in the initial scoping and identifies those resources that would be affected by the Proposed Action and are, therefore, analyzed in Chapter 4, Environmental Consequences.

#### 3.1 Salmon and Steelhead

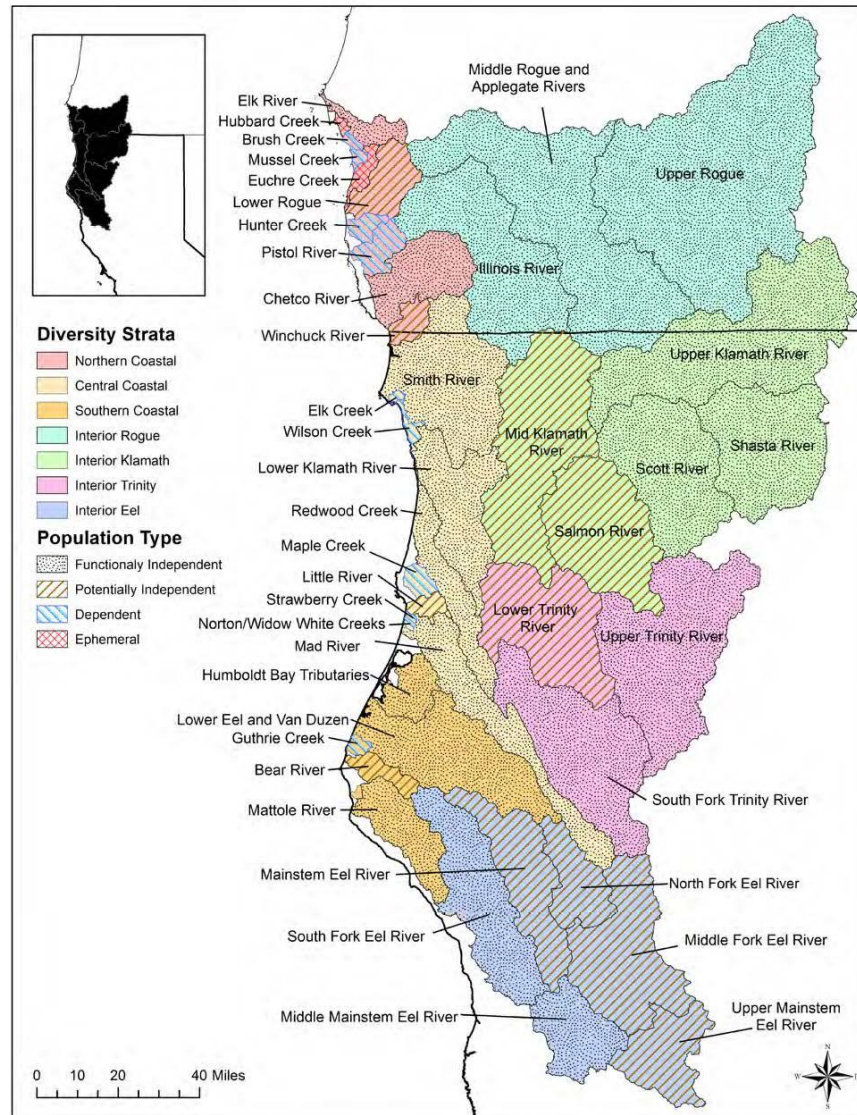
Six species of anadromous Pacific salmon (*Oncorhynchus* spp.) occur within the Action Area: Chinook salmon (*O. tshawytscha*), coho salmon (*O. kisutch*), chum salmon (*O. keta*), sockeye salmon (*O. nerka*), pink salmon (*O. gorbuscha*), and steelhead (*O. mykiss*). Of these species, three are rarely, if ever, encountered in the ocean salmon fisheries, and are not managed under the FMP (chum, sockeye, and steelhead) (PFMC 2021b). Pink salmon are occasionally taken in ocean salmon fisheries, but are not generally targeted (PFMC 2021b). Therefore, effects to chum, sockeye, and steelhead are discountable and they are not analyzed further in this EA. Chinook and coho salmon are the primary target species in the ocean salmon fisheries managed under the FMP. These salmon species would be impacted by the Proposed Action, which would affect harvest in the Action Area.

In the ocean, stocks and species of salmon comingle which results in mixed-stock fisheries. Non-target stocks will be encountered in mixed-stock fisheries targeting other stocks or salmon species.

The Council's Salmon Technical Team models the degree to which non-target stocks are impacted by proposed fisheries, and the Council uses tools such as harvest restrictions, time and area closures, and mark-selective fisheries to limit impacts to non-target stocks (PFMC 2021a). The Workgroup developed general guidelines for how allowable impacts on SONCC coho salmon would likely affect salmon fisheries.

In Council-managed salmon fisheries, the majority of coho salmon harvested are taken in fisheries north of Cape Falcon and recreational fisheries harvest more coho salmon than commercial fisheries, while the FMP currently prohibits coho retention south of the Oregon/California border (PFMC 2021b). A list of the salmon stocks and stock complexes managed in the ocean salmon fisheries is provided in the FMP (PFMC 2021a). A description of the historical baseline for salmon stocks managed under the FMP is presented in the Review of 2020 Ocean Salmon Fisheries (PFMC 2021b).

In the marine environment coho salmon from the SONCC Coho Salmon ESU (Figure 2 details the populations within the ESU) are primarily distributed off the coast of California and southern Oregon (NMFS 2016). Overfishing in non-tribal fisheries was identified as a significant factor in the decline of coho salmon (62 FR 24588, May 6, 1997). Significant overfishing occurred from the time marine survival significantly decreased for many coho stocks (ca. 1976) until the mid-1990s when harvest was substantially curtailed or prohibited. Tribal harvest was not considered to be a major factor in the decline of coho salmon in either the Klamath River Basin or Trinity River Basin (62 FR 24588, May 6, 1997).



**Figure 2.** Population and diversity strata of the SONCC Coho Salmon ESU (NMFS 2014).

Significant changes in fisheries harvest management have occurred in recent decades, resulting in substantial reductions in harvest of SONCC coho salmon. Coho salmon-directed fisheries and coho salmon retention have been prohibited off the coast of California since 1996. Therefore, the ocean ER of SONCC coho salmon is low, averaging 5.5 percent ER since 2010 (PFMC 2021c), and attributable to hooking and handling mortality with subsequent release. This observed ER is below levels allowed under the current HCR limit of a 13 percent ocean only ER. Coho are encountered in Chinook salmon-directed commercial and recreational fisheries off the coasts of California and Oregon and mark-selective and some limited non-mark-selective coho salmon fisheries north of the Oregon/California border. Mark-selective fisheries target marked hatchery-origin fish for retention while requiring the release of unmarked fish, or from encounters with fishing gear (commonly referred to as ‘drop off mortality’). Collectively this is generally termed “incidental mortality”.

### 3.2 Other Fish Species

Impacts to Pacific halibut from salmon troll fisheries continue to be managed under limits established through the International Pacific Halibut Commission (IPHC) process. Halibut allocations are implemented consistent with the IPHC Area 2A Catch Sharing Plan (e.g., 79 FR 18827). Allocation of halibut to the commercial salmon fishery would not be affected by the Proposed Action; therefore, Pacific halibut will not be included in Chapter 4 and are not analyzed further in this EA.

Coastal pelagic species, Dungeness crab, shrimp/prawns, and sea cucumbers are not encountered in ocean salmon fisheries. These species would not be affected by the Proposed Action; therefore, similarly they will not be included in Chapter 4 nor analyzed further in this EA.

Impacts to groundfish stocks from commercial salmon troll fisheries continue to be managed as part of the open access groundfish fishery sector under the Groundfish FMP<sup>4</sup>. Recreational fishing for groundfish in the action area also managed under the Groundfish FMP.

Albacore (*Thunnus alalunga*) is harvested by many of the same commercial and recreational fishermen that fish for salmon. Fishery impacts to albacore are managed under the Council's Highly Migratory Species FMP<sup>5</sup>.

As mentioned above, groundfish and albacore retained during salmon fisheries are managed under the Groundfish and Highly Migratory Species FMPs and those harvests are considered in NEPA analyses for those FMPs. Additionally, encounters of both of these species in salmon fisheries are so low that the impacts are discountable and is not significant ([September 2021, Agenda Item E.5.a](#)); therefore, impacts to these species and fisheries will not be addressed in Chapter 4 nor analyzed further in this EA.

### 3.3 Marine Mammals

ESA-listed marine mammal species that co-occur with Council-managed salmon fisheries include Guadalupe fur seal (not in the area affected by this action), southern sea otter, northern sea otter, and Southern Resident killer whale (SRKW). Among the ESA-listed marine mammals, only the SRKW is known to interact with Pacific salmon. Table 3 displays ESA-listed marine mammals that occur in west coast marine waters and their listing status.

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<sup>4</sup> The current Groundfish FMP can be found on the Council's website at: <http://www.pcouncil.org/groundfish/fishery-management-plan/>

<sup>5</sup> The current HMS FMP can be found on the Council's website at: <http://www.pcouncil.org/highly-migratory-species/fishery-management-plan-and-amendments/>

**Table 3.** ESA-listed marine mammals that may occur in the action area.

Species	ESA Listing
Whales	
Humpback ( <i>Megaptera novaeangliae</i> )	Endangered
Sei ( <i>Balaenoptera borealis</i> )	Endangered
North Pacific Right ( <i>Eubalaena japonica</i> )	Endangered
Blue whale ( <i>Balaenoptera musculus</i> )	Endangered
Fin whale ( <i>Balaenoptera physalus</i> )	Endangered
Sperm whale ( <i>Physeter macrocephalus</i> )	Endangered
Southern Resident Killer whale ( <i>Orcinus orca</i> )	Endangered
Other marine mammals	
Southern sea otter ( <i>Enhydra lutris nereis</i> )	Threatened
Northern sea otter ( <i>Enhydra lutris kenyoni</i> )	Threatened

A number of non-ESA-listed marine mammals may also occur in the action area, these include: northern fur seal (*Callorhinus ursinus*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), harbor seal (*Phoca vitulina*), northern elephant seal (*Mirounga angustirostris*), bottlenose dolphin (*Tursiops truncatus*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), short-beaked common dolphin (*Delphinus delphis*), harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*Phocoenoides dalli*), and minke whale (*Balaenoptera acutorostrata*). These species, like all marine mammals, are protected under the Marine Mammal Protection Act (MMPA). The non-ESA-listed marine mammal species that are known to interact with ocean salmon fisheries are California sea lion and harbor seals, both species will feed on salmon, when available, and have been documented preying on hooked salmon in commercial and recreational fisheries (Weise and Harvey 2005). Populations of both these species are at stable and historically high levels. Moreover, the Proposed Action and alternatives would not alter the existing fisheries in a way that would substantially change the interactions with these marine mammals. The stable or increasing pinniped population trends have occurred over a wide range of ocean ERs in the last two decades indicating the availability of salmon likely is not limiting. Ocean salmon fisheries employ hook-and-line gear and are classified under the MMPA as Category III (79 FR 14418, March 14, 2014), indicating there a remote likelihood of or no known incidental mortality or serious injury of marine mammals (MMPA 118(c)(1)). Therefore, impacts to non-ESA listed marine mammals are not expected to be significant, and there is no discernible difference between the effects of the alternatives on these resources and impacts to these species and fisheries will not be addressed in Chapter 4 nor analyzed further in this EA.

Deoxyribonucleic Acid (DNA) quantification methods have been used to estimate the proportion of different prey species in the diet of SRKW from fecal samples (Deagle et al. 2005). Recently, Ford et al. (2016) confirmed the importance of Chinook salmon to SRKW in the early to mid-summer months (May-August) using DNA sequencing from SRKW feces collected in inland waters of Washington and British Columbia. Salmon and steelhead made up greater than 98 percent of the inferred diet, of which almost 80 percent were Chinook salmon. Coho salmon and steelhead are also found in the diet in inland waters of Washington and British Columbia in spring and fall months when Chinook salmon are less abundant. Specifically, coho salmon contribute to over 40 percent of the diet in September in Puget Sound waters, which is evidence of prey shifting at the



end of summer towards coho salmon (Ford et al. 1998; Ford and Ellis 2006; Hanson et al. 2010; Ford et al. 2016). SONCC coho salmon occur at the southern end of the SRKW range and have not been identified as a contributor to the SRKW diet (Hanson et al. 2021). In 2020 the Council added management measures by amending the FMP that are intended to limit impacts of the Council-managed salmon fisheries specifically on SRKW by limiting the extent to which they reduce Chinook salmon prey availability for SRKW. NMFS consulted on implementation of that action under the ESA and completed a NEPA analysis. NMFS concluded that the Council-managed salmon fisheries coupled with the management measures specifically designed to limit the fisheries' effect on SRKW were not likely to jeopardize the continued existence of the SRKW or destroy or adversely modify its designated or proposed critical habitat. The Proposed Action analyzed in this EA would further restrict fisheries by establishing ER limits for SONCC coho salmon, but not Chinook salmon. Chinook salmon conservation requirements would remain unaffected, and effects to SRKW are controlled through these requirements along with Chinook salmon abundance estimates. Conservation limits established for coho salmon will not alter the estimated annual Chinook salmon abundance. Furthermore, the Proposed Action and alternatives analyzed in this EA could only potentially restrict Chinook salmon directed fisheries before any Chinook salmon conservation limits required fishery restriction. While this would potentially result in a small positive effect to SRKW, by limiting the amount of Chinook salmon caught in the ocean before species-specific restriction were required, in NMFS's 2020 NEPA analysis, we analyzed the complete closure of Chinook salmon fishing in the EEZ and its effect to SRKW, finding it to be not significant to SRKW (NMFS 2021). Thus, SRKW, are not expected to be affected, in a manner by the Proposed Action that has not been considered previously. Therefore, impacts to SRKW will not be analyzed further in this EA.

### **3.4 Socioeconomics**

In the marine environment coho salmon from the SONCC Coho Salmon ESU are primarily distributed off the coast of California and southern Oregon (NMFS 2016). SONCC coho salmon are encountered in Council-managed recreational and commercial salmon fisheries throughout the EEZ (PFMC 2021c, Table E-1).

NOAA's Northwest Fisheries Science Center (NWFS) has published profiles on West Coast fishing communities (Norman et al. 2007). This report includes social and economic characteristics for 125 fishing communities on the West Coast (of these, 40 communities in Washington, 30 communities in Oregon, and 50 communities in California). The community profiles include sections on: people and place, infrastructure, involvement in West Coast fisheries, and involvement in North Pacific fisheries.

### **3.5 Tourism/Recreation**

Fishing is an important recreational and tourist activity for many West Coast communities (Norman et al. 2007). Economic benefits to these communities come not only directly from fishing activities, e.g., charter boat fees, licensing, bait, and tackle, but also indirectly, e.g., restaurants, grocery stores, lodging, tourist attractions, and shopping (Norman et al. 2007). Currently no recreational harvest in the ocean targets SONCC coho salmon, however, fishing on other salmon species may be restricted as a result of meeting the conservation restraints for SONCC coho salmon.

### 3.6 Cultural Resources

Cultural resources are an aspect of a cultural system that is valued by, or significantly representative of, a culture, or that contains significant information about a culture. Cultural resources can also be identified as sites, structures, or objects listed or eligible for listing in the National Register of Historic Places. As the Proposed Action does not involve and is not expected to impact any listed or eligible items in the National Register of Historic Places, the focus of this section will be the current status of salmon as a cultural resource for Native American Tribes. Initial scoping of the Proposed Action indicated potential effects from changes to ocean tribal fisheries. However, the Workgroup's final RA (PFMC 2021c) indicates that potential annual effects of tribal fisheries operating in the EEZ range from no effect to likely negligible effects (meaning their annual ER would round to zero). This is because tribal fisheries in the EEZ occur at the far north end, north of the Leadbetter Point line in the North of Falcon area (see Figure 1), primarily outside the migratory range of SONCC coho salmon. Given this information the range of alternatives adopted by the Council were absent ocean tribal fishery changes, and the alternative analyzing completely closing fishing in the EEZ (Alternative 4) in this EA does not therefore include ocean tribal fisheries.

Salmon are an important part of Native American tribal culture and have been since time immemorial. Salmon provide cultural, ceremonial, and subsistence benefits to tribal communities on the West Coast. There are 151 Federally-recognized tribes and many other non-Federally-recognized tribes in the West Coast Region, many of which utilize salmon for occasions including but not limited to ceremonies, celebrations, funerals and as part of their cultural identity.

### 3.7 Environmental Justice

Several laws and policies mandate attention to impacts on human communities, including Executive Order (EO) 12898. This EO directs agencies to determine whether the Proposed Action disproportionately affects low income and minority populations. Typically, census data are used to document the occurrence and distribution of these groups. In addition, the pertinent rights of Indian tribes should also be considered in this Environmental Justice analysis.

The NWFSC has published profiles on West Coast fishing communities (Norman et al. 2007). This report includes demographics and descriptions of community involvement in fisheries. The Proposed Action was developed through the Council process, including several meetings that were open to the public (see section 1.4). Additionally, West Coast treaty tribes have a representative on the Council, and representatives from the Yurok Tribe and the Hoopa Valley Tribe were members of the Workgroup that developed the alternatives.

The analysis of Environmental Justice impacts considers potential adverse effects under the alternatives on physical, biological, cultural, human, and socioeconomic resources in the analysis area. Unlike effects on other resource topics (e.g., fish, marine mammals, birds) analyzed in this EA, Environmental Justice is not a stand-alone topic and examines interactions between low-income and minority communities, and tribal communities with other resources presented in this EA.

Based on consideration of potential effects for the alternatives on communities and the human environment, it was concluded that the Environmental Justice analysis should focus on potential adverse effects associated with two of the resource categories from Section 3.0:

1. Cultural Resources
2. Socioeconomics

Section 4.0 will determine if there are disproportionate impacts in any of these resource categories on the low-income, minority, and/or tribal Environmental Justice populations identified in this section.

## **4.0 Environmental Consequences**

This chapter will analyze the environmental impacts of the alternatives on the resources described in Chapter 3, for which there are identifiable impacts. In addition to non-ESA-listed salmon, the Proposed Action may have impacts on ESA-listed SONCC coho salmon and the socioeconomic environment, which are discussed in the following subsections.

### ***4.1 Alternative 1- No Action or Status Quo***

The No Action or Status Quo Alternative would maintain adherence to a 13 percent ocean-only ER limit as set forth in the FMP, which is consistent with the RPA analyzed in the 1999 NMFS Biological Opinion (NMFS 1999). The Council would continue to expect freshwater areas to fish to their recent averages. See Section 2.1 for the specifics of this alternative.

#### **4.1.1 Salmon and Steelhead**

Under Alternative 1, harvest would continue being regulated using the existing HCR in the FMP. This means ocean salmon fisheries could incidentally take up to the 13 percent limit for SONCC coho salmon, which for the purposes of comparing to the other alternatives we expect would occur. By doing so, NMFS (2022) found that when combining the status quo ER limit in Council-managed fisheries of 13 percent with the rates observed post season in freshwater areas resulted in average total ERs ranging from 19.2 percent (on the Scott or Shasta rivers populations units), to 23.7 percent total in the Trinity River population, with the Bogus population unit percent in between with a total of 19.3. When taking into account average recent freshwater impacts, a possible 13 percent ocean only HCR would allow for the highest level of impact to salmon if ocean fisheries utilized the full extent of the limit (NMFS 2022) across all alternatives. However, the impacts of Alternative 1 on Salmon and Steelhead would not be significant when compared to all the other alternatives (PFMC 2021c), as other stocks of salmon would still factor into limiting ocean salmon fisheries.

#### **4.1.2 Socioeconomics**

Detailed information on the economic impacts of Council-managed salmon fisheries are found in the Council's Review of 2020 Ocean Salmon Fisheries (PFMC 2021b). Under Alternative 1, the economic impacts on fishery-dependent communities from the ocean salmon fisheries would not change from what has been experienced in the recent past. Alternative 1 would likely result in

fishery participation levels similar to those described above. Although higher ERs on SONCC coho salmon (i.e., up to 13 salmon ocean ER compared with the recent 5.5 percent average) could allow for greater participation than recent levels, that is unlikely to occur because the conservation objectives on Chinook salmon have been the constraint on catch and effort in salmon ocean fisheries rather than SONCC coho salmon and that is likely to continue. Utilizing catch as an indicator of regional socioeconomic effects, we expect the levels to remain similar to those recently experienced. Total West Coast income impacts associated with commercial and recreational ocean salmon fisheries in 2020 for Washington, Oregon, and California combined were an estimated \$51 million (PFMC 2021b). The magnitude of economic benefits to fishery-dependent communities would continue to vary year-to-year, but would not be significant compared to the other alternatives.

#### **4.1.3 Tourism/Recreation**

Under Alternative 1, the No Action or Status Quo Alternative, all Council-managed fisheries would continue to be managed as they have been under the conditions of the 1999 Biological Opinion (NMFS 1999). Therefore, Tourism/Recreation opportunities would remain the same as recent years, for example Income impacts generated by the three states' combined 2020 ocean recreational salmon fisheries totaled \$22.4 million in 2020 (PFMC 2021b). Although higher ERs on SONCC coho salmon (i.e., up to 13 salmon ocean ER compared with the recent 5.5 percent average) could allow for greater participation than recent levels, that is unlikely to occur because the conservation objectives for Chinook salmon have been the constraint on catch and effort in salmon ocean fisheries rather than SONCC coho salmon and that is likely to continue. As a result the impacts of Alternative 1 on Tourism and Recreation would not be significant compared to the other alternatives.

#### **4.1.4 Cultural Resources**

The United States and Native Americans have committed to and sustained a special trust relationship, which obligates the federal government to promote tribal self-government, support the general well-being of Native American tribes and villages, and to protect their lands and resources. In exchange for the surrender and reduction of tribal lands and removal and resettlement of approximately one-fifth of Native American tribes from their original lands, the United States signed treaties, passed laws, and instituted policies that shape and define the special government-to-government relationship between federal and tribal governments.

Under the No Action or Status Quo Alternative, effects on cultural resources would remain unchanged. Salmon would continue to provide cultural, ceremonial, and in the case of salmon, subsistence benefits to tribal communities on the West Coast.

#### **4.1.5 Environmental Justice**

We could not detect differential impacts on minority populations or low-income populations as salmon fishing would remain accessible to everyone as it has been under Alternative 1. Given our prior explanation that the Proposed Action would not affect ocean tribal fishing, we therefore do not expect differential impacts to Native American tribes fishing in Council area fisheries for salmon under Alternative 1. Therefore, we could not find differential impacts to minority

populations, low-income populations, or Indian tribes under the No-Action Alternative, and the impacts would not be significant.

## ***4.2 Alternative 2- Preferred Alternative (0.15 Maximum ER, 0.16 Maximum ER for Trinity River Populations)***

### **4.2.1 Salmon and Steelhead**

Under Alternative 2, the preferred alternative, the proposed harvest would represent a net decrease in impacts when compared to Alternative 1 (No Action) (NMFS 2022). Therefore, the effects of the current Council-managed fisheries would slightly decrease if freshwater fisheries remained the same or increased from their current average reported by the Workgroup (PMFC 2021) to stay within the proposed HCRs in Alternative 2 depending on the population unit or would remain the same as the current conditions if freshwater fisheries decreased. When taking freshwater ERs into account, total ERs on SONCC coho salmon under Alternative 1 averaged 4.2 to 7.7 percent higher (long term average difference reported in NMFS 2022 between Alternative 1 and Alternative 2) than the ERs under Alternative 2 for the Bogus Creek, Scott, Shasta, and Trinity rivers population units in the SONCC Coho ESU. Recall, this assumes the limit in Alternative 1 (13 percent ER) is fully utilized. Since no freshwater exploitation was reported as occurring in the Freshwater Creek or Rogue River population units, Alternative 2 would therefore allow for a static two percent ER increase on these two population units if freshwater fisheries continued to be absent into the future to achieve a 15 percent overall ER. Effectively, by adopting an ER that is inclusive of ocean and freshwater mortality at the described 15 and 16 percent limits, the impacts are reduced for many of the population units when compared with Alternative 1 by reducing the total ER they are exposed to by an average of 4.2 to 7.7 percent (NMFS 2022). This is simply the numerical difference from Alternative 1 (No Action) at where most populations could be experiencing between 19.2 to 23.7 percent ERs, but would be limited under Alternative 2 to a flat 15.0 or 16.0 percent respective total ER. Therefore, the relative impacts to salmon and steelhead could decrease on average in Council-managed fisheries. However, this decrease would be a minor change from current conditions and would not be considered significant. These reduced impacts are low and therefore, the impacts of Alternative 2 on Salmon and Steelhead would not be significant when compared to the other alternatives, and is lower than both Alternatives 1 and 4, but higher than Alternative 3.

### **4.2.2 Socioeconomics**

Under Alternative 2, the economic impacts on fishery-dependent communities from the ocean salmon fisheries would not significantly change when compared with Alternative 1. If Council-managed fisheries were further constrained there would likely be slightly decreased opportunities for harvest. Alternative 2 would likely result in either fishery participation levels slightly lower to those described above or shifts to other ocean areas where impacts to SONCC coho salmon are lower as fishing conservation restrictions would not change for other stocks. Utilizing catch as an indicator of regional socioeconomic effects we expect the economic levels (PFMC 2021b) to remain only slightly lower to those recently experienced (reported under Alternative 1). The magnitude of economic benefits to fishery-dependent communities would continue to vary year-to-year, but overall changes related to implementation of Alternative 2 not likely to be significant when compared to the other alternatives, but would be higher than Alternatives 3 and 4.

### **4.2.3 Tourism/Recreation**

Fishing is an important recreational and tourist activity for many West Coast communities (Norman et al. 2007). Economic benefits to these communities come not only directly from fishing activities, e.g., charter boat fees, licensing, bait, and tackle, but also indirectly, e.g., restaurants, grocery stores, lodging, tourist attractions, and shopping (Norman et al. 2007). Under Alternative 2 there would still be no recreational harvest in the ocean targeting SONCC coho salmon. The likely anticipated lower levels of fisheries that might result in Council-managed fisheries under this alternative are not significant. While local regional dispersment of effort shifts may occur to access more abundant stocks, these are likely to be temporary (annual in nature) and are therefore not likely to be significant when compared to the other alternatives, but effects to Tourism/Recreation would be more positive under Alternative 2 than Alternatives 3 and 4.

### **4.2.4 Cultural Resources**

Under Alternative 2, effects on cultural resources would be unchanged, and not be significant. While Council-managed non-tribal fisheries overall would see a slight reduction, salmon would continue to provide cultural, ceremonial, and in the case of salmon, subsistence benefits to tribal communities on the West Coast.

### **4.2.5 Environmental Justice**

Under Alternative 2 there would not be differential impacts on minority populations or low-income populations. While minority populations or low-income populations would retain access to salmon fishing under Alternative 2, Council-managed salmon fisheries would see a slight reduction from Alternative 1 overall but would not change significantly. This slight reduction would not include Native American ocean harvest and we do not detect differential impacts under this alternative to any minority or low-income populations, and therefore find no significant impacts under this alternative when compared to the other alternatives.

## ***4.3 Alternative 3- Control Rule 1 (0.00 Maximum ER)***

### **4.3.1 Salmon and Steelhead**

Under Alternative 3, there would be negative and positive impacts on the environment as salmon go uncaught and negative impacts to Council ocean salmon fisheries as catch is curtailed completely in the EEZ. Alternative 3 would require closing Council-managed salmon fisheries in a large portion of the EEZ where SONCC coho occur, as SONCC coho impacts would not be available for prosecuting ocean fisheries (PFMC 2021c). The effect of Alternative 3 on Salmon and Steelhead is unclear, but many hatchery salmon would escape the ocean in large numbers and salmon fisheries in freshwater areas outside of the Action Area may increase their harvest of the salmon that is uncaught off of the U.S. West coast.

Impacts may be positive or negative depending on the population unit affected. Significant adverse consequences to many freshwater areas may accrue, as hatchery fish going uncaught in Council ocean salmon fisheries would likely drastically increase the proportion of hatchery-origin fish throughout freshwater ranges of ESA-listed fish. Both hatchery Chinook and hatchery coho salmon

would enter freshwater areas at higher proportions than would occur under the other alternatives. Negative effects from high proportions of hatchery fish have been described extensively by NMFS before (see appendix C of NMFS 2018), but include a variety of genetic effects on natural population productivity and diversity when they interbreed with natural-origin fish, competition with natural populations for habitat and resources leading to density depressed populations, along with disease transmission to list a few. In rivers where low numbers of salmon currently return and hatcheries are supplementing natural abundances positive effects may accrue, depending on current hatchery release sizes, to increase spawning abundance which could decrease demographic risks and/or improve spatial structure and connectivity among and within spawning populations. Overall, potential negative or positive effects would occur immediately dependent upon local conditions and hatchery release sizes within local vicinities and be short term, as NMFS assumes that terminal fisheries (occurring in freshwater and coastal estuaries) would adjust to try to capture the influx of high levels of hatchery abundance. However, the limits to current terminal fisheries (escapement needs and limits on rates of harvest on wild stocks currently in place) would still prohibit full utilization. Alternative solutions might be found in the long term, but this would take time, and the negative effects we mention here would likely be in place for some time for salmon and steelhead, both ESA-listed and non-listed.

Effects under Alternative 3, relative to the No-Action Alternative will be significantly negative to Council ocean salmon fisheries as catch is curtailed completely in the EEZ. Relative to the other Alternatives the effects to fisheries will be largest under Alternative 3 as it represents the greatest change from current conditions.

#### **4.3.2 Socioeconomics**

We expect socioeconomic effects to be significantly negative under Alternative 3, relative to the No-action Alternative, since catches of salmon would be mostly curtailed across the coast, except for fisheries in the most northern portion of the EEZ. Under Alternative 3 we expect near zero revenue generated from a near full closure of ocean salmon fishing. We do not have data sufficient to calculate differences in expected losses of relative income as a result of these expected effects, but expect the magnitude on economic benefits to fishery-dependent communities to be significantly negative every year the salmon fishery remained closed thereby depriving them of nearly all the values reported in Section 4.1.2. Under Alternative 3 we expect financial losses may accrue to the tune of millions of dollars through the local procurement of goods and services and the loss of full-time jobs in coastal communities relative to other alternatives.

#### **4.3.3 Tourism/Recreation**

Fishing is an important recreational and tourist activity for many West Coast communities (Norman et al. 2007). Economic benefits to these communities come not only directly from fishing activities, e.g., charter boat fees, licensing, bait, and tackle, but also indirectly, e.g., restaurants, grocery stores, lodging, tourist attractions, and shopping (Norman et al. 2007), which under Alternative 3 would be significantly negatively impacted as fishing for salmon in Council fisheries would largely cease. This is because non-tribal fisheries, both recreational and commercial, encounter non-negligible amounts of SONCC coho salmon in all but the most northern areas of the EEZ (PFMC 2021c, Table E-1). Under this alternative, curtailing these encounters would be necessary, thereby diminishing the economic benefits derived from these activities. For example,

the Council reported income impacts generated by the three states' combined 2020 ocean recreational salmon fisheries totaled \$22.4 million (PFMC 2021b), which would be curtailed completely under Alternative 3.

#### **4.3.4 Cultural Resources**

Under Alternative 3, effects on cultural resources for Native American tribes with usual and accustomed fishing areas for salmon in the EEZ would not be affected, as explained above. While Council-managed non-tribal fisheries overall would see a significant reduction, salmon would continue to provide cultural, ceremonial, and in the case of salmon, subsistence benefits to tribal communities on the West Coast. Tribal ceremonial and subsistence uses pertaining to fish that are caught by members of Washington Coast treaty tribes for purposes of maintaining cultural viability, providing a valuable food resource, among other traditional foods, in tribal ceremonies, and meeting the nutritional needs of tribal members. The cessation in non-tribal access to salmon may affect fishing community maintenance of infrastructure pertaining to salmon fishing vessels. If infrastructure was affected in a manner that made it more difficult for Native American tribes to maintain their fishing fleets this could affect access to cultural practices, but is unquantifiable, and therefore we do not detect significant impacts to cultural resources under this alternative when compared to the other alternatives.

#### **4.3.5 Environmental Justice**

Given our prior explanation that ocean tribal fishing is negligible and not affected by the Proposed Action, we therefore do not expect differential impacts to Native American tribes fishing in Council area fisheries for salmon under Alternative 4. Also, when compared to other alternatives we could not find differential impacts to minority populations, low-income populations, or Indian tribes under this alternative, and it would not be significant.

### ***4.4 Alternative 4- Control Rule 10 (0.20 Maximum ER)***

#### **4.4.1 Salmon and Steelhead**

Under Alternative 4 the maximum proposed ER of 0.20 would be instituted. Impacts to salmon and steelhead are shown to increase as rates of proposed ERs increase from zero (PFMC 2021c). At this maximum ER of 0.20 salmon and steelhead would experience overall potential impact similar to Alternative 1 and higher than Alternatives 2 and 3.

Under Alternative 4 total fishery ERs on SONCC coho salmon would be required to be stay within an overall ER limit slightly lower than the HCR under existing conditions (Alternative 1), when accounting for both Council-managed fisheries and freshwater impacts collectively. Recall, NMFS (2022) found that when combining the status quo ER limit in Council-managed fisheries of 13 percent with the rates observed post season in freshwater areas resulted in average total ERs ranging from 19.2 percent (on the Scott or Shasta rivers populations units), to 23.7 percent total in the Trinity River population, with the Bogus population unit percent in between with a total of 19.3. These potential total ERs correspond most closely with Alternative 4. Therefore, under Alternative 4 there would likely be similar to slightly less opportunities for harvest as those compared to Alternative 1, which would not be significant (PFMC 2021c), but greater opportunities when compared to Alternative 2 and 3.



#### **4.4.2 Socioeconomics**

Under Alternative 4, the economic impacts on fishery-dependent communities from the ocean salmon fisheries would likely not significantly change from what could occur under Alternative 1. Alternative 4 would likely result in similar fishery participation levels to those described under the Status Quo Alternative. Utilizing catch as an indicator of regional socioeconomic effects we expect the levels to be similar to slightly less if the freshwater areas were to continue or increase their ERs on SONCC coho, when compared and ocean salmon fisheries caught the full 13 percent allowed under Alternative 1. It is also possible that if freshwater areas were to decrease their ERs on SONCC coho then under this alternative the limit would allow expansion of Council ocean fisheries slightly. The magnitude of economic benefits to fishery-dependent communities would continue to vary year-to-year, but is not likely to be significant.

#### **4.4.3 Tourism/Recreation**

Economic benefits to West Coast communities come not only directly from fishing activities, e.g., charter boat fees, licensing, bait, and tackle, but also indirectly, e.g., restaurants, grocery stores, lodging, tourist attractions, and shopping (Norman et al. 2007). Under Alternative 4 there would still be no recreational harvest in the ocean targeting SONCC coho salmon but the HCR under Alternative 4 would provide harvest access to other stocks similar or higher to Alternative 1 if freshwater areas were to decrease their ERs on SONCC coho allowing expansion of Council ocean fisheries slightly. If the freshwater areas were to continue or increase their ERs on SONCC coho under this alternative the Council fisheries would be similar to slightly less, but either change under Alternative 4 would be unlikely to significantly impact effects to economic benefits when compared to the other alternatives as fisheries would still be constrained for other limiting stocks.

#### **4.4.4 Cultural Resources**

Under Alternative 4, effects on cultural resources would remain unchanged and not be significant. While Council-managed fisheries overall would similar to slightly less if the freshwater areas were to continue or increase their ERs on SONCC coho, when compared to those recently experienced, salmon would continue to provide cultural, ceremonial, and in the case of salmon, subsistence benefits to tribal communities on the West Coast when compared with Alternative 1.

#### **4.4.5 Environmental Justice**

Under Alternative 4 there would not be differential impacts on minority populations or low-income populations. Council-managed salmon fisheries would remain similar to the effects under Alternative 1 or higher if freshwater areas were to decrease their ERs on SONCC coho allowing expansion of Council ocean fisheries slightly. If the freshwater areas were to continue or increase their ERs on SONCC coho under this alternative the Council fisheries would be similar to slightly less, but either change under Alternative 4 and would not change significantly.

### **5.0 Cumulative Effects**

This chapter discusses the cumulative effects of the alternatives described in Chapter 2, Description of Alternatives, and analyzed in Chapter 4, Environmental Consequences, along with other past,

present, and reasonably foreseeable future actions, considered against the existing condition of the affected environment (Chapter 3, Affected Environment). Cumulative effects are the effects “on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7).

## **5.1 Past, Present and Reasonably Foreseeable Actions**

Chapter 3, Affected Environment, describes existing conditions for each resource and environmental justice and reflects the effects of past actions and present conditions. As described, past actions that contributed to the present condition of resources considered in this EA primarily include vessel operation, fishery management and fisheries. The following subsections describe the reasonably foreseeable actions and conditions related to these factors.

## **5.2 Cumulative Effects Analysis**

### **5.2.1 Salmon and Steelhead**

Taking the expected impacts of the Preferred Alternative into account in addition to past, present, and reasonably foreseeable future actions, including climate change, effects of all alternatives on fish species and fisheries assume salmon abundance levels would fluctuate between highs and lows, as discussed in sections above. Given there are not significant differences between Alternatives 1, 2, and 4 there would likely not be significant differences in cumulative impacts from these alternatives. Alternative 3 would have a significant impact as it would cease Council-managed salmon harvest and would likely have long-term significant negative cumulative impacts for salmon and steelhead with some potential positive impacts as well.

### **5.2.2 Socioeconomics**

Future effects of the No-action Alternative would not change fishery management areas nor how commercial and recreational fishery participants conduct their fishing activities. The Preferred Alternative would likely result in low negative economic effects as catch would be reduced when compared to Alternatives 1 and 4. Alternative 4 would result in a similar economic effect when compared to Alternative 1. However, any effects of the Alternatives 1, 2 and 4 on socioeconomics would not be cumulatively significant. Alternative 3 would have a significant negative impact on economics as it would cease nearly all Council-managed salmon harvest.

### **5.2.3 Tourism/Recreation**

Future effects of Alternative 1 would not have any effect on tourism or recreation. The Preferred Alternative would likely result in slightly negative effects to tourism and recreation as catch would be reduced, and Alternative 4 would result in similar effect to Alternative 1. However, any effects of Alternatives 1, 2, and 4 on tourism and recreation would not be cumulatively significant. Alternative 3 would likely have a significant negative impact on tourism and recreation long-term as it would cease nearly all Council-managed salmon harvest.

### 5.2.4 Cultural Resources

Effects on cultural resources would remain unchanged into the future. Salmon would continue to provide cultural, ceremonial, and subsistence benefits to tribal communities on the West Coast. There are no changes to tribal fisheries under any alternative we do not expect cumulatively significant effects to cultural resources.

### 5.2.5 Environmental Justice

We could not detect differential cumulative impacts on minority populations, low-income populations, or Indian tribes under any alternative.

## 6.0 Climate Change

The changing climate is recognized as a long-term trend that is occurring throughout the world. These changes will affect the human environment and biological ecosystems within the analysis area (Ecology 2012; Mauger et al. 2015; NWFSC 2015; King County 2016; Krosby et al. 2016). Changes to organisms and their habitats are likely to include shifts in timing of life history events, changes in growth and development rates, and changes in habitat and ecosystem structure (Johannessen and Macdonald 2009; Littell et al. 2009; Krosby et al. 2016). The most heavily affected ecosystems and human activities along the Pacific coast are likely to be near areas having high human population densities and along the continental shelves off Oregon and Washington (Halpern et al. 2009).

Climatic conditions affect salmonid abundance, productivity, spatial structure, and diversity through direct and indirect impacts at all life stages (ISAB 2007; Lindley et al. 2007; Crozier et al. 2008; Moyle et al. 2013; Wainwright and Weitkamp 2013).

In the marine ecosystem, salmon may be affected by warmer water temperatures, increased stratification of the water column, intensity and timing changes of coastal upwelling, loss of coastal habitat due to sea level rise, ocean acidification, and changes in water quality and freshwater inputs (ISAB 2007; Mauger et al. 2015). Salmon marine migration patterns could be affected by climate-induced contraction of thermally suitable habitat. Northward range shifts are a climate response expected in many marine species, including salmon (Cheung et al. 2015). However, salmon populations are strongly differentiated in the northward extent of their ocean migration, and hence would likely respond individualistically to widespread changes in sea surface temperature.

Prey species such as salmon are most likely to be affected through changes in food availability and oceanic survival (Benson and Trites 2002), with biological productivity increasing during cooler periods and decreasing during warmer periods (Hare et al. 1999; NMFS 2008). Also, range extensions were documented in many species from southern California to Alaska during unusually warm water associated with “The Blob” in 2014 and 2015 (Bond et al. 2015; Di Lorenzo and Mantua 2016), and past strong El Niño events (Pearcy 2002; Fisher et al. 2015).

The frequency of these extreme climate conditions associated with El Niño events or “blobs” are predicted to increase in the future with climate change (greenhouse forcing) (Di Lorenzo and Mantua 2016) and therefore, it is likely that long-term anthropogenic climate change would interact

with inter-annual climate variability. Evidence suggests that early marine survival for juvenile salmon is a critical phase in their survival and development into adults. The correlation between various environmental indices that track ocean conditions and salmon productivity in the Pacific Ocean, both on a broad and a local scale, provides an indication of the role they play in salmon survival in the ocean.

The predictions of climate change and effects described above are based on models used to estimate effects of climate change under a wide range of change scenarios (from low to high changes) (Mauger et al. 2015). In the near term (next 15 to 20 years), the actual effects and pace of climate change will become clearer as evidence of change accumulates. However, the effects of climate change are likely to be less pronounced in the near term compared to the long-term projections, and annual weather patterns (variation in seasonal temperatures and precipitation) in the near term may mask long-term trends (Ecology 2012).

NMFS assumes that the effects of Alternatives 1, 2, 3, and 4 in the project area would have similar effects when amplified by the effects of continued climate change. Alternative 3 may lead to slight reduction in greenhouse gas emissions as a result of the cessation of nearly all Council-managed fisheries for salmon. However, the reduction would likely be minor and likely undetectable. Alternatives 1 through 4 would not contribute significantly to climate change impacts.

### **Persons and Agencies Consulted**

This action is a Council-recommended action and the Council includes all interested and potential cooperating agencies, such as tribal government representatives and state representatives for Washington, Oregon, Idaho, and California.

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## 8.0 Finding of no Significant Impact

### Amendment 23

#### To the

**Pacific Coast Salmon Fishery Management Plan (FMP):  
Pacific Fishery Management Council's Harvest Control Rule for  
Southern Oregon/Northern California Coast (SONCC) Coho Salmon**

(Regulatory Tracking Identifier Number: 0648-XC119)

### FINDING OF NO SIGNIFICANT IMPACT

**I. Purpose of Finding of No Significant Impact (FONSI):** The National Environmental Policy Act (NEPA) requires the preparation of an Environmental Impact Statement (EIS) for any proposal for a major federal action significantly affecting the quality of the human environment. 42 U.S.C. § 4332(C). The Council on Environmental Quality (CEQ) regulations direct agencies to prepare a Finding of No Significant Impact (FONSI) when an action not otherwise excluded will not have a significant impact on the human environment. 40 CFR § 1500.4(b) & 1500.5(b). To evaluate whether a significant impact on the human environment is likely, the CEQ regulations direct agencies to analyze the potentially affected environment and the degree of the effects of the proposed action. 40 CFR § 1501.3(b). In doing so, agencies should consider the geographic extent of the affected area (i.e., national, regional or local), the resources located in the affected area (40 CFR § 1501.3(b)(1)), and whether the project is considered minor or small-scale (NAO 216-6A CM, Appendix A-2). In considering the degree of effect on these resources, agencies should examine both short- and long-term effects (40 CFR § 1501.3(b)(2)(i); NAO 216-6A CM Appendix A-2 - A-3), and the magnitude of the effect (e.g., negligible, minor, moderate, major). CEQ identifies specific criteria for consideration. 40 CFR § 1501.3(b)(ii)-(iv). Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

In preparing this FONSI, we reviewed the Amendment 23 to the Environmental Assessment (EA) for the Pacific Coast Salmon Fishery Management Plan (Salmon FMP): Pacific Fishery Management Council's (Council) Harvest Control Rule for Southern Oregon/Northern California Coast (SONCC), which evaluates the affected area, the scale and geographic extent of the proposed action, and the degree of effects on those resources (including the duration of impact, and whether the impacts were adverse and/or beneficial and their magnitude). The EA is hereby incorporated by reference. 40 CFR § 1501.6(b).

### II. Approach to Analysis:

The proposed action is not considered to meaningfully contribute to a significant impact based on the scale of impact, as the action modifies how temporary fishing regulations are set (i.e., these annual management measures will be in place for one year, until superseded by the next

year's management measures), and the salmon fishery is small in terms of economic and environmental impacts.

The proposed action will not meaningfully contribute to significant impacts to specific resources in the affected area. The ocean salmon fisheries have limited impacts on non-target species, and negligible impacts on marine habitats.

The proposed action is not connected to other actions that have caused or may cause effects to the resources in the affected area, and there is then no potential for the effects of the proposed action to add to the effects of other projects, such that the effects taken together could be significant.

### **III. Geographic Extent and Scale of the Proposed Action:**

The proposed action establishes limits for annual management measures for ocean salmon fisheries in the exclusive economic zone (EEZ), 3-200 nautical miles off the coasts of the states of Washington, Oregon, and California, and is, therefore, regional in its geographical extent. The EA describes the management areas within the region where specific fisheries are authorized, and the environmental effects analyzed in the EA occur at a relatively small scale.

### **IV. Degree of Effect:**

*A. The potential for the proposed action to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection.*

This proposed action will not threaten a violation of any Federal, state, or local law, or requirement imposed to protect the environment. The proposed action is designed to be consistent with Federal law and has been reviewed for compliance with the Endangered Species Act (ESA), whereby the National Marine Fisheries Service (NMFS) found the preferred alternative is not likely to jeopardize the continued existence of the SONCC Coho Salmon Evolutionarily Significant Unit or destroy or adversely modify its designated critical habitat (NMFS 2022).

*B. The degree to which the proposed action is expected to affect public health or safety.*

This proposed action will not have a significant impact on public health or safety because the proposed action, consistent with the Salmon FMP, has provisions to adjust management measures if unsafe weather or public health emergency affects the fisheries' access, and has taken into account safety per the involvement of the fishing communities in their development.

*C. The degree to which the proposed actions is expected to affect a sensitive biological resource, including:*

*a. Federal threatened or endangered species and critical habitat;*

This proposed action would not significantly affect any endangered or threatened species or its critical habitat. Several salmonid and non-salmonid fish species that are potentially impacted by the fisheries are listed as threatened or endangered under the ESA. NMFS has issued biological opinions addressing the effects of the salmon fisheries on all of these species.

As listed in the EA, NMFS completed an ESA consultation and issued a biological opinion (WCRO-2021-03260, April 28, 2022) on the effects of implementing the salmon FMP on the threatened SONCC Coho Salmon ESU. The biological opinion concluded authorization of the ocean salmon fishery in the West Coast EEZ through approval of the salmon FMP and promulgation of regulations implementing the salmon FMP is not likely to jeopardize the continued existence of the SONCC coho salmon ESU or destroy or adversely modify its designated or proposed critical habitat. Therefore, while the proposed action may affect ESA-listed species, it is not expected to be significant under NEPA, because the proposed action is designed to minimize or avoid adverse effects on ESA-listed species.

*b. stocks of marine mammals as defined in the Marine Mammal Protection Act;*

Ocean salmon fisheries are classified under the Marine Mammal Protection Act (MMPA) as Category III (87 FR 23122, April 19, 2022), indicating there is “a remote likelihood of or no known incidental mortality or serious injury of marine mammals” (MMPA 118(c) I). See Section 3.3, Marine Mammals of the EA for information on ESA-listed Southern Resident killer whale (SRKW).

*c. essential fish habitat identified under the Magnuson–Stevens Fishery Conservation and Management Act;*

The area affected by the proposed action has been identified as essential fish habitat (EFH) under the salmon FMP, Coastal Pelagic Species Fisheries Management Plan (FMP), and Pacific Coast Groundfish FMP. The proposed action may have an adverse impact on EFH identified in these FMPs. Because the potential adverse impact on EFH is not substantial, NMFS conducted an abbreviated EFH consultation pursuant to 50 CFR 600.920(h), and prepared an EFH Assessment that incorporates all of the information required in 50 CFR 920(g)(2). The abbreviated EFH consultation was incorporated into the NMFS biological opinion on the effects of the salmon FMP on ESA-listed salmonids dated April 30, 2001 (NMFS 2022, citation listed below). The consultation concluded that there are appropriate conservation measures governing fishing actions that occur under the salmon FMP to minimize potential adverse impacts to EFH for species managed under either the salmon FMP, Coastal Pelagic Species FMP, or Pacific Coast Groundfish FMP.

NMFS has continued to confirm this conclusion from the 2001 EFH consultation through subsequent EFH consultations, including one completed most recently in 2022 for SONCC coho salmon (WCRO-2021-03260).

*d. bird species protected under the Migratory Bird Treaty Act;*

The proposed action would not significantly affect bird species, as previous NEPA analyses (see Final EA for 2022 Ocean Salmon Fisheries Management Measure (RIN 0648-BK78) (NMFS 2022)), found that direct impacts on birds, notably seabirds, are minimal to non-existent in the ocean salmon fisheries, such as the proposed action, because troll gear is not known to intercept birds, and collisions between salmon trollers and birds are rare. Therefore, bird species were not analyzed as a possibly affected resource in this EA.

*e. national marine sanctuaries or monuments;*

National Marine Sanctuaries and Monuments have regulations governing activities within their boundaries. The proposed action does not supersede those regulations. Ocean salmon fisheries prosecuted under the proposed action do not use any substrate-contacting gear, as they are hook-and-line troll fisheries, thus no ground disturbing impacts are expected to result from the proposed action.

*f. vulnerable marine or coastal ecosystems, including, but not limited to, shallow or deep coral ecosystems;*

The proposed action is not expected to adversely affect vulnerable marine, coastal, or coral ecosystems. The proposed action does not include any substrate-disturbing activity (see response to item C.e., above).

*g. biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)*

As described in the responses to C.e. and C.f. above, the proposed action will not significantly affect benthic productivity because the proposed action does not use any substrate-contacting gear, as they are hook-and-line troll fisheries. Therefore, no ground disturbing impacts are expected to result from the proposed action.

Substantial impacts to biodiversity and ecosystem function are not anticipated because higher trophic-level species affected by the salmon fisheries are primarily marine mammals, which generally are opportunistic feeders with various available prey options, and their populations have been stable or increasing. With respect to SRKW, NMFS specifically considered predator-prey relationships between SRKW and Pacific salmon in its April 21, 2021, biological opinion and August 2021 EA (citations listed below).

*D. The degree to which the proposed action is reasonably expected to affect a cultural resource: properties listed or eligible for listing on the National Register of Historic Places; archeological resources (including underwater resources); and resources important to traditional cultural and religious tribal practice.*

No significant impacts are expected to occur in any of the above areas for the following reasons. The proposed action would not affect historic properties and archeological resources because the proposed action does not use any substrate-contacting gear, as it only includes hook-and-line troll fisheries. Therefore, no ground disturbing impacts are expected to result from the proposed action. Additionally, no properties listed or eligible for listing on the National Register of Historic Places, or archeological resources are known to occur in the area where the proposed action will occur. The proposed action will not significantly affect cultural resources or resources important to traditional cultural and religious tribal practice, as the proposed action includes treaty Indian fisheries, and West Coast Indian tribes are part of the Council's decision-making process on salmon management issues.

*E. The degree to which the proposed action has the potential to have a disproportionately high and adverse effect on the health or the environment of minority or low-income communities, compared to the impacts on other communities (EO 12898).*

Fisheries conducted under the FMP are not expected to disproportionately affect minority and low-income communities. West Coast Indian tribes are part of the Council's decision-making

process on salmon management issues. Available demographic data detailed in the salmon FMP show that coast counties where fishing communities are located are variable in terms of social indicators like income, employment, and race and ethnic composition. As a result, the alternatives are not expected to disproportionately affect fishing communities, nor minority and low income groups in particular.

*F. The degree to which the proposed action is likely to result in effects that contribute to the introduction, continued existence, or spread of noxious weeds or nonnative invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of the species.*

The proposed action is not expected to import, introduce, or contribute to the spread of noxious weeds or nonnative invasive species. The West Coast states have regulations in place for vessel inspections to address this issue; this action does not change these state regulations or affect the likelihood of the introduction or spread of these species. The fishing vessels participating in the proposed action would not increase the risk of introduction through ballast water or hull fouling, because salmon troll vessels generally have a limited range of operation and few, if any, use seawater for ballast. Disposition of the catch does not include any translocation of living marine resources nor use of any nonindigenous species as bait.

*G. The potential for the proposed action to cause an effect to any other physical or biological resources where the impact is considered substantial in magnitude (e.g., irreversible loss of coastal resource such as marshland or seagrass) or over which there is substantial uncertainty or scientific disagreement.*

The proposed action is not expected to cause a substantial effect to any other physical or biological resource, nor is there substantial uncertainty or scientific disagreement on the impacts of the proposed action, based on the following reasons. Salmon fisheries conducted under the salmon FMP have been monitored and analyzed in the Pacific Fishery Management Council's pre-season process for many years and, thus, risks from the fisheries are relatively well known. There is some uncertainty involved in projecting stock abundance in a given year, however, such uncertainty is addressed by implementing precautionary management measures to protect the less abundant stocks (i.e., "weak" stocks). In order to prevent overfishing, on, and to conserve, the weaker stocks, there is less harvest opportunity on the more abundant stocks that intermix with weak stocks in the fisheries. In addition to the precautionary measures, the regulations allow, consistent with the salmon FMP, for inseason management actions to be taken in some areas as additional information becomes available.

#### **V. Other Actions Including Connected Actions:**

The proposed action was developed with consideration of the collective impact of salmon fishery impacts within and beyond Council-area fisheries (e.g., northern salmon fisheries in Alaska and British Columbia, and southern salmon fisheries in state waters) to meet conservation and management criteria in the salmon FMP, under the Pacific Salmon Treaty, and consistent with the ESA.

#### **VI. Mitigation and monitoring:**

The proposed action was developed to be consistent with the conservation and management objectives of the salmon FMP, the terms of the Pacific Salmon Treaty, the requirements of the

ESA, the Magnuson-Stevens Fishery Conservation and Management Act and other applicable law. Council-managed salmon fisheries use “weak-stock management” to limit fishery impacts on low abundance or protected stocks; weak-stock management results in constraints on abundant stocks beyond what would necessarily be allowed under the salmon FMP.

## DETERMINATION

The CEQ NEPA regulations, 40 CFR § 1501.6, direct an agency to prepare a FONSI when the agency, based on the EA for the proposed action, determines not to prepare an EIS because the action will not have significant effects. In view of the information presented in this document and the analysis contained in the supporting EA prepared for Amendment 23 to the Salmon FMP: Pacific Fishery Management Council’s Harvest Control Rule for SONCC Coho Salmon it is hereby determined that the approval of Amendment 23 to the Salmon FMP will not significantly impact the quality of the human environment. The EA prepared for Amendment 23 to the Salmon FMP: Pacific Fishery Management Council’s Harvest Control Rule for SONCC Coho Salmon is hereby incorporated by reference. In addition, all beneficial and adverse impacts of the proposed action as well as mitigation measures have been evaluated to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not



October 28, 2022

Date

Acting Regional Administrator  
West Coast Region  
National Marine Fisheries Service

## REFERENCES

NMFS. 2021. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Conference Opinion Biological Opinion on the Authorization of the West Coast Ocean Salmon Fisheries Through Approval of the Pacific Salmon Fishery Management Plan Including Amendment 21 and Promulgation of Regulations Implementing the Plan for Southern Resident Killer Whales and their Current and Proposed Critical Habitat. NMFS Consultation Number: WCRO-2019-04074. April 21, 2021. 190p.

NMFS. 2021. Final Environmental Assessment on Amendment 21 to the Pacific Coast Salmon Fishery Management Plan: Salmon Fishery Management Measures to allow for prey availability and foraging opportunities for Southern Resident Killer Whales. RIN: 0648-XA696. August 2021. 148p.

NMFS 2022. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson–Stevens Fishery Conservation and Management Act Essential Fish Habitat Response. Effects of the Pacific Coast Salmon Fishery Management Plan on the Southern Oregon / Northern California Coast Coho Salmon Evolutionarily Significant Unit Listed Under the Endangered Species Act. WCRO-2021-03260. April 28, 2022. 92 p.

## 9.0 Appendix 1

Agenda Item  
E.1.a Supplemental SONCC Workgroup  
Report 2  
June 2020

### SOUTHERN OREGON/NORTHERN CALIFORNIA COHO AD HOC WORKGROUP REPORT

## **Southern Oregon/Northern California Coast Coho Fishery Ad Hoc Technical Workgroup Terms of Reference (TOR) and Timeline**

### **1. Purpose**

Develop a proposed harvest control rule for the Southern Oregon/Northern California Coast (SONCC) Coho Evolutionarily Significant Unit (ESU) for Pacific Fishery Management Council (Council, PFMC) consideration that would:

- allow fishing on abundant salmon stocks while not impeding the recovery of SONCC coho;
- establish harvest control rules in the form of fixed or tiered exploitation rates including consideration of control rules which reduce exploitation rates at low abundance levels, and which may include minimum or target spawner levels;
- apply to all marine and freshwater fisheries affecting SONCC coho;
- evaluate the feasibility of considering the status of subcomponents of the ESU (e.g., Klamath and Trinity Rivers), marine and freshwater environmental conditions, and other relevant factors as appropriate and as supported by the data available (similar to the Oregon Coast Natural coho salmon matrix).

### **2. Membership**

- The Council will establish an Ad Hoc SONCC Coho Technical Work Group (Workgroup, WG).
- Membership will include technical representatives from:
  - Pacific Fishery Management Council
  - National Marine Fisheries Service (NMFS) West Coast Region (WCR)
  - NMFS Northwest Fisheries Science Center (NWFSC)
  - NMFS Southwest Fisheries Science Center (SWFSC)
  - U.S. Fish and Wildlife Service
  - Yurok Tribe

- Hoopa Valley Tribe
- California Department of Fish and Wildlife
- Oregon Department of Fish and Wildlife
- Contractors as deemed necessary or suggested by Workgroup participating entities
- The Workgroup will choose from among its members a Chair and a Vice-Chair. The Vice-Chair will act in instances where the Chair is unavailable. The Council will be responsible for administrative and logistical support.

### 3. Milestones

- Collect and summarize relevant information regarding the status of SONCC coho, biological characteristics, magnitude and distribution of fishing mortality, and marine and freshwater environmental indicators.
- Develop a range of alternative harvest control rules.
- Analyze the biological risks and fishing related benefits of the alternative control rules.
- Assist the Council with developing a preferred harvest control rule alternative that can be recommended for adoption by the Council and to NMFS for Endangered Species Act review within 18 months from the Workgroup's initial meeting.
- Consult with the Council's Scientific and Statistical Committee (SSC) and Salmon Technical Team (STT) on the analytical methods used to evaluate draft alternatives. The Workgroup may consult with other Council advisory bodies and technical committees as necessary or as directed by the Council.

### 4. Timeline

- Pre-meet: Presentation of TORs and timeline at the April 2020 Council meeting
  - Council decides by May 31, 2020 whether to consider a process to develop the SONCC control rule and initiate Workgroup.
- Pre-meet:
  - preseason abundance forecast feasibility meeting with WCR and SWFSC (Workgroup already in place);
  - invitations sent to participating parties;
  - NMFS (WCR, NWFSC & SWFSC) staff participants assigned and ready to engage (likely 4-6 technical staff [2-3 from the region and science center respectively, or potential contractors] successful implementation will require permanent staff to engage and carry through into the future);
  - Federal Register (FR) notice of time/location of first Workgroup meeting finalized (Council staff); Workgroup meetings will be open to public.
- June 2020: initial first meeting (on-line)
  - introductions;
  - discussion/agreement on purpose of group (as defined by the Council);
  - establish ground rules and operating procedures;



- develop proposed timeline;
- group selection of Chair and Vice-Chair;
- approve final TOR for Council endorsement;
- coordination/outline of tasks;
- discussion/catalog of current control rules and status information available;
- establish criteria for alternative control rules (e.g., acceptable risk to ESU, distribution among populations or tributaries); discussion of potential methods to evaluate alternative control rules;
- discussion of potential development of abundance forecasts methods and a river harvest model; identify data gaps, estimate workload and timeline needed to complete;
- group assignment to address data gaps, and suggested alternate control rules, and investigate potential forecast/model development for discussion at next meeting
  - define/assign specific tasks and products expected with due date;
- date/location confirmed for next meeting, FR notice of time/location (Council staff).
- August 2020: second meeting (on-line)
  - updates/additional population information provided to address data gaps identified at June (first) Workgroup meeting;
  - group discussion of harvest control rule alternatives and the data necessary (e.g., forecast dependent, data used for environmental variables, stock subcomponents) for each are identified; potential alternatives are narrowed if possible,
  - group assignment to begin drafting analysis of each potential control rule, due prior to the November (third) Workgroup meeting;
  - date/location confirmed for next meeting, FR notice of time/location (Council staff).
- October 2020: third meeting
  - options for current forecasting/escapement methodology presented (if so – the following bullets are pushed to June 2021; if not – disregard this bullet);
  - draft analysis report (risk assessment) for proposals presented to Workgroup indicating relative risk of each potential harvest control rule (HCR) identified in second meeting to ESU (and other criteria, e.g., acceptable risk on the relative strength of the various contributing populations such as Trinity River Basin populations, environmental indicators);
  - discussion if suite of alternatives is adequate/possible revision of alternatives
    - if HCR alternatives are added based on initial draft report, these items will all repeat during next meeting;
  - discussion/questions of analysis for each HCR alternative;
  - Workgroup assignment to update draft risk assessment accordingly per discussions;
  - Workgroup assignment to present HCR alternatives and draft risk assessment report to each parties' respective constituency; schedule meeting to present to Council's Model Evaluation Workgroup (MEW), STT, and SSC for methodology and analytical reviews as necessary; meetings to occur prior to, or during the November 2020 Council meeting;

- prepare document with range of alternatives, preliminary recommendation and draft report for Chair and Vice-Chair to present Workgroup report to the Council at the November 2020 Council meeting;
  - date/location confirmed for next meeting, FR notice of time/location (Council staff).
- January 2021: fourth meeting (on-line)
  - discuss input received from Council presentation and parties' constituencies
    - update alternatives per discussions and input from SAS, SSC, and other tribal or state input sources outside Workgroup;
  - group assignment to revise report for updated alternatives per external recommendations;
  - group assignment to present alternatives and revised report to each parties' respective constituency in time to present for March or April Council meeting.
- April 2021: fifth meeting
  - schedule meeting to present to Council's Salmon Advisory Subpanel and other advisory bodies as necessary in preparation for April 2021 Council meeting;
  - Chair and Vice-Chair presents Workgroup recommendation to the Council for consideration in selection of a preliminary preferred alternative;
  - date/location confirmed for next meeting, FR notice of time/location (Council staff).
- June 2021 webinar : sixth meeting
  - consider additional guidance provided at the April 2021 meeting;
  - group assignment to revise report for updated alternatives per external recommendations;
  - group assignment to present alternatives and revised report to each parties' respective constituency in time to present for September 2021 Council meeting.
- October 2021: seventh meeting
  - discuss final alternatives for public review and comment (September if necessary);
  - prepare for November 2021 Council meeting: draft Workgroup report for Chair and Vice-Chair to provide to the Council for adoption of final preferred alternative recommendation. Council transmits recommendation to NMFS via signed letters for Section 7 consultation.

## **10.0 Appendix 2 Comments Received**

A Notice of Availability for Amendment 23 was published in the Federal Register on August 18, 2021 (87 FR 50824). This Federal Register notice also notified the public of the availability of the draft environmental assessment (EA) for review and comment. The public comment period on Amendment 23 closed on October 17, 2022 and the public comment period on the draft EA closed on October 3, 2022. Comments are published online at: <https://www.regulations.gov/document/NOAA-NMFS-2022-0065-0003>.

This public comment period resulted in the NMFS receiving three comments from private citizens and one letter from the U.S. EPA (attached below). One comment from private citizens was in support of the Amendment's adoption, while the others were outside the scope of the proposed action. NMFS incorporated recommendations from the comments received into the final EA.



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

September 28, 2022

Jeromy Jording  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
1009 College St. SE, Suite 210  
Lacey, Washington 98503

Subject: Draft Environmental Assessment for Amendment 23 to the Pacific Coast Salmon Fishery Management Plan

Dear Jeromy Jording:

The U.S. Environmental Protection Agency has reviewed the National Marine Fisheries Service's Draft Environmental Assessment for Amendment 23 to the Pacific Coast Salmon Fishery Management Plan. Our review and comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

At its January 2022 emergency meeting, the Pacific Fishery Management Council recommended amending the Pacific Coast Salmon Fishery Management Plan with new harvest control rules, developed through the Council process with data from a newly established Southern Oregon/Northern California Coast (SONCC) Coho Salmon Workgroup. This Draft Environmental Assessment analyzes the environmental effects of implementing management measures under such an amendment and the National Marine Fisheries Service will consider the FMP recommendations for adoption.

Based on our phone conversation with NMFS (September 6, 2022), EPA understands that tribal input was included in the decision-making process because West Coast tribes were members on the above-mentioned SONCC Coho Salmon Workgroup. Additionally, the document states that multiple public meetings were included as part of the Council process (p. 12). We encourage NMFS to clearly document tribal engagement in the FEA and further explain how tribes were consulted per Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*. Finally, we recommend more clearly describing the proposed project in the FEA; it is helpful for the public and decision-makers who are reviewing an Environmental Assessment to understand the Proposed Project and how it connects to the Purpose and Need for the action.

The EPA appreciates the opportunity to review this Draft Environmental Assessment. If you have any questions, please contact me at (415) 947-4167, or contact Stephanie Gordon, the lead reviewer for this project, at (415) 972-3098 or [gordon.stephanies@epa.gov](mailto:gordon.stephanies@epa.gov)

Sincerely,

**JEAN PRIJATEL** Digitally signed by JEAN PRIJATEL  
Date: 2022.09.28 18:39:25 -07'00'

Jean Prijatel  
Manager, Environmental Review Branch

cc: Shannon Penna, National Oceanic and Atmospheric Administration