

PRESEASON REPORT II
PROPOSED ALTERNATIVES
AND
ENVIRONMENTAL ASSESSMENT PART 2
FOR 2018
OCEAN SALMON FISHERY
REGULATIONS
REGULATION IDENTIFIER NUMBER 0648-BH22



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MARCH 2018

Revised April 17, 2018 - Section 8.2, Table 10, Figure 1, and Figure 2

PUBLIC HEARINGS ON SALMON ALTERNATIVES

All Hearings Begin at 7 p.m.

Monday, March 26

Chateau Westport
Franklin Room
710 W Hancock
Westport, WA 98595
(360) 268-9101

Monday, March 26

Red Lion Hotel
South Umpqua Room
1313 N Bayshore Drive
Coos Bay, OR 97420
(541) 267-4141

Tuesday, March 27

Laurel Inn and
Conference Center
801 W Laurel Drive
Salinas, CA 93906
(831) 449-2474

*Public comment on the Alternatives will also be accepted during the April Council meeting on Friday, April 6, during the public comment period for Agenda Item E.1 at the Sheraton Portland Airport Hotel 8235 NE Airport Way - Portland, OR 97220 Phone: 503-281-2500. **Written comments** received at the Council office **by 5:00 p.m., on Friday, March 30, 2018** will be distributed to all Council members.*

This document may be cited in the following manner:

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LIST OF ACRONYMS AND ABBREVIATIONS

AABM	Aggregate Abundance Based Management
ABC	acceptable biological catch
ACL	annual catch limit
AEQ	adult equivalent
BO	biological opinion
CDFW	California Department of Fish and Wildlife
CFGC	California Fish and Game Commission
CO	central Oregon (Florence south jetty to Humbug Mt.)
Council	Pacific Fishery Management Council
CPUE	catch per unit effort
CWT	coded-wire tag
DPS	Distinct Population Segment
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ENSO	El Niño/Southern Oscillation
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FB	Fort Bragg (Horse Mt. to Point Arena)
FRAM	Fishery Regulation Assessment Model
FMA	fishery management area
FMP	fishery management plan
FONSI	finding of no significant impact
GSI	genetic stock identification
IPHC	International Pacific Halibut Commission
ISBM	Individual Stock Based Management
KC	California KMZ (OR/CA border to Horse Mountain)
KO	Oregon KMZ (Humbug Mountain to the OR/CA border)
KMZ	Klamath Management Zone
KRFC	Klamath River fall Chinook
LCN	Lower Columbia Natural (wild Columbia River coho below Bonneville Dam)
LCR	Lower Columbia River (wild Col. River tule fall Chinook below Bonneville Dam)
LRH	Lower River Hatchery (hatchery Col. River tule fall Chinook below Bonneville Dam)
LRW	Lower River Wild (Columbia River bright fall wild Chinook below Bonneville Dam).
MO	Monterey (Pigeon Point to the U.S./Mexico border)
NEPA	National Environmental Policy Act
MSA	Magnuson-Stevens Act
MSY	maximum sustainable yield
NMFS	National Marine Fisheries Service
NO	northern Oregon (Cape Falcon to Florence South Jetty)
NAO	National Oceanic and Atmospheric Administration Administrative Order
NOAA	National Oceanic and Atmospheric Administration
ODFW	Oregon Department of Fish and Wildlife
OCN	Oregon coastal natural (coho)
OFL	overfishing limit
OLE	Office of Law Enforcement (NOAA)
OPI	Oregon Production Index
OSP	Oregon State Police
OY	optimum yield

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

PDO	Pacific (inter) Decadal Oscillation
PSC	Pacific Salmon Commission
PST	Pacific Salmon Treaty
RER	rebuilding exploitation rate
RMP	Resource Management Plan
RK	Rogue/Klamath (hatchery coho)
S _{ABC}	spawning escapement associated with ABC
S _{ACL}	spawning escapement associated with ACL (= S _{ABC})
SCH	Spring Creek Hatchery (Col. R. tule fall Chinook returning to Spring Creek Hatchery [above Bonneville Dam])
SEAK	Southeast Alaska
S _{MSY}	MSY spawning escapement
SET	spawning escapement target
SF	San Francisco (Point Arena to Pigeon Point)
SI	Sacramento Index
SONCC	Southern Oregon/Northern California Coast (coho ESU)
SRFC	Sacramento River fall Chinook
SRFI	Snake River fall (Chinook) Index
SRW	Snake River wild (fall Chinook)
SRWC	Sacramento River winter Chinook
STT	Salmon Technical Team
SWO	State Waters Only (fisheries off Oregon south of Cape Falcon)
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
WCVI	West Coast Vancouver Island
WDFW	Washington Department of Fish and Wildlife

1.0 INTRODUCTION

This is the third report in an annual series of four reports prepared by the Salmon Technical Team (STT) of the Pacific Fishery Management Council (Council) to document and help guide salmon ocean fishery management off the coasts of Washington, Oregon, and California. This report describes the Council's proposed ocean salmon management alternatives for 2018 and characterizes the expected impacts on ocean salmon fisheries and the stocks which support them. The Council solicits public comments on the proposed management Alternatives in preparation for adopting final management recommendations at its April meeting. Oral and written comments may be presented at public hearings at the times and locations displayed on the inside front cover of this report. Additional comments will be accepted during the April Council meeting at the Sheraton Airport Portland Hotel in Portland, Oregon. Written comments received at the Council office by 5:00 p.m. March 30, 2018 will be copied and distributed to all Council members (Council staff cannot assure distribution of comments received after March 30, 2018).

This report also constitutes the second part of an Environmental Assessment (EA) to comply with National Environmental Policy Act (NEPA) requirements for the 2018 ocean salmon regulations. An EA is used to determine whether an action being considered by a Federal agency has significant environmental impacts. This part of the EA includes a statement of the purpose and need, a description of the affected environment, a description of 2018 ocean salmon regulation alternatives being considered, and an analysis of the effects of those Alternatives on the affected environment. The first part of the EA (Preseason Report I; PFMC 2018b) included a description of the No-Action alternative and an analysis of the effects of the No-Action alternative on salmon stocks managed under the Pacific Coast Salmon Fishery Management Plan (FMP), which is one component of the affected environment. Along with the description and analysis of the Proposed Action in Preseason Report III (developed after the Council makes a final recommendation in April 2018), these three parts of the EA will provide the necessary components to determine if a finding of no significant impact (FONSI) or Environmental Impact Statement (EIS) is warranted.

1.1 *Purpose and Need*

The purpose of this action, implementation of the 2018 ocean salmon fishery management measures, is to allow fisheries to harvest surplus production of healthy natural and hatchery salmon stocks within the constraints specified under the Salmon FMP, the Pacific Salmon Treaty (PST), and consultation standards established for salmon stocks listed under the Endangered Species Act (ESA). In achieving this purpose, management measures must take into account the allocation of harvest among different user groups and port areas. Without this action, 2017 management measures would be in effect, which do not consider changes in abundance of stocks in the mixed stock ocean salmon fisheries. Therefore, this action is needed to ensure constraining stocks are not overharvested and that harvest of abundant stocks can be optimized to achieve the most overall benefit to the nation.

The Salmon FMP establishes nine more general harvest-related objectives:

1. Establish ocean exploitation rates for commercial and recreational salmon fisheries that are consistent with requirements for stock conservation objectives and annual catch limits, specified ESA consultation or recovery standards, or Council adopted rebuilding plans.
2. Fulfill obligations to provide for Indian harvest opportunity as provided in treaties with the United States, as mandated by applicable decisions of the Federal courts, and as specified in the October 4, 1993, opinion of the Solicitor, Department of Interior, with regard to Federally-recognized Indian fishing rights of Klamath River tribes.

3. Maintain ocean salmon fishing seasons that support established recreational and commercial fisheries, while meeting salmon harvest allocation objectives among ocean and inside recreational and commercial fisheries that are fair and equitable, and in which fishing interests shall equitably share the obligations of fulfilling any treaty or other legal requirements for harvest opportunities.
4. Minimize fishery mortalities for those fish not landed from all ocean salmon fisheries as consistent with achieving optimum yield (OY) and bycatch management specifications.
5. Manage and regulate fisheries, so the OY encompasses the quantity and value of food produced, the recreational value, and the social and economic values of the fisheries.
6. Develop fair and creative approaches to managing fishing effort and evaluate and apply effort management systems as appropriate to achieve these management objectives.
7. Support the enhancement of salmon stock abundance in conjunction with fishing effort management programs to facilitate economically viable and socially acceptable commercial, recreational, and tribal seasons.
8. Achieve long-term coordination with the member states of the Council, Indian tribes with Federally recognized fishing rights, Canada, the North Pacific Fishery Management Council, Alaska, and other management entities which are responsible for salmon habitat or production. Manage consistent with the Pacific Salmon Treaty and other international treaty obligations.
9. In recommending seasons, to the extent practicable, promote the safety of human life at sea.

These objectives, along with the consultation standards established under the ESA, provide "sideboards" for setting management measures necessary to implement the Salmon FMP, which conforms to the terms and requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the National Standards Guidelines.

2.0 SELECTION OF FINAL MANAGEMENT MEASURES

The Council's final ocean salmon season recommendations will be based on the range of Alternatives presented in this report and guidance received from deliberations at management fora such as the north of Cape Falcon planning process (sponsored by the States of Washington and Oregon and the treaty Indian tribes in that area), Pacific Salmon Commission (PSC), and from public hearings sponsored by the Council and the States of Washington, Oregon, and California. Final recommendations concerning season dates, catch quotas, and exploitation rates may vary from the range of Alternatives presented in this report depending upon determination of allocations, allowable harvest levels, public comment, or the final impact analyses completed by the STT. Elements of the Alternatives may be recombined to alter season patterns and quotas, or measures such as bag limits, days of fishing per week, special landing restrictions, and other specific regulatory details may also change. In addition, inseason modification of management measures may be used to ensure achievement of the Council's management objectives.

Specific details pertaining to season structure and special management measures for the treaty Indian troll fishery north of Cape Falcon are established in tribal regulations. Chinook and coho quota levels for the treaty Indian troll fishery may be adjusted if substantial changes in incidental fishing mortality result from tribal regulations, preseason or inseason.

The impact analyses presented in this document reflect uncertainties and limitations of information available at the time of the March 2018 Council meeting. At this point in the planning cycle, the STT's

impact assessments reflect five key assumptions relative to stocks impacted by Canadian and Alaskan fisheries:

- 1) abundance levels for Canadian Chinook and coho stocks identical to 2017 forecasts;
- 2) for Chinook fisheries managed under the aggregate abundance based management (AABM) provisions of the 2009 PST Agreement, fishing effort scalars from the final 2017 preseason model run for southeast Alaskan (SEAK), north-central British Columbia, and West Coast Vancouver Island (WCVI) fisheries;
- 3) for Chinook fisheries managed under individual stock based management (ISBM) regimes pursuant to the 2009 PST Agreement; the 2018 fishery inputs were a combination of 2017 preliminary postseason landed catch estimates (where available) or the most recent three-year average landed catch;
- 4) for Canadian coho fisheries, single-year 2016 postseason fishing effort scalars from FRAM were used, except a 2010 postseason fishing effort scalar for Fraser Net; and
- 5) for Southern U.S. inside fisheries for Chinook and coho, the 2017 final preseason modeled fisheries were used.

In mid-March, U.S. and Canadian fishery managers exchange information regarding preseason expectations for fisheries and the status of Chinook and coho stocks. In addition, the PSC's Chinook Model will be calibrated by the PSC Chinook Technical Committee to determine the allowable catch ceilings under the 2009 PST Agreement. Abundances and fishery expectations will be adjusted in the Council's fishery planning models prior to the April Council meeting, and inside fisheries will be shaped by state and tribal co-managers both prior to and during the April Council meeting.

Any Alternative considered for adoption that deviates from Salmon FMP objectives or other applicable laws will require implementation by emergency rule. If an emergency rule appears to be necessary, the Council must clearly identify and justify the need for such an action consistent with emergency criteria established by the Council and NMFS.

3.0 SALMON TECHNICAL TEAM CONCERNS

The STT is concerned about the relatively high marine exploitation rates for Rogue/Klamath coho forecasted for the three Alternatives presented in this report and has begun examining the assumptions made in the models used to forecast this rate. Mixed stock coho contacts south of Cape Falcon are forecasted using base period (generally 1986-1990) contacts per unit effort and forecasts of effort. For the area between Cape Falcon and Humbug Mountain, Oregon, contacts per unit effort are scaled by the forecasted coho abundance in that area relative to base period abundance. For the area south of Humbug Mountain, no such scaling for abundance occurs and therefore contacts occur at approximately the same rate as was estimated from the base period. The STT is working to determine why this scaling occurs north of Humbug Mountain but not to the south, and whether this difference in methods is warranted.

4.0 SALMON FISHERY MANAGEMENT PLAN REQUIREMENTS

The Council's Salmon FMP includes objectives for setting annual management measures to regulate ocean salmon fisheries between the U.S./Canada border and the U.S./Mexico border. The objectives include biological, administrative, and allocation requirements. In recommending final management measures, the Council attempts to meet all objectives in a fair and balanced manner, while maintaining established priorities.

Biological objectives for stocks originating in the Council area and impacted by Council area ocean fisheries are listed in Table 3-1 of the Salmon FMP. The objectives generally consist of meeting spawning

escapement numbers associated with maximum sustainable yield (S_{MSY}), overfishing limits (OFL), acceptable biological catch (ABC), and annual catch limits (ACL), or exploitation rate limits designed to support recovery of depressed stocks or to rebuild overfished stocks, while encompassing a long term average harvest approximating MSY.

Administrative objectives are requirements for meeting other applicable law outside of the Salmon FMP. These requirements include ESA consultation standards, international treaties, and tribal trust responsibilities. The Salmon FMP defers to NMFS consultation standards for salmon stocks listed under the ESA in regard to biological conservation objectives. Section 5.0 of this document provides greater detail on ESA listed stocks, while impacts of the Council adopted salmon management measures on ESA listed stocks are included in Table 5.

The Salmon FMP requires compliance with relevant terms of the PST. Section 6.0 of this document provides greater detail on PST provisions and stocks, while impacts of the Council adopted salmon management measures on those stocks are included in Table 5.

Treaty trust responsibilities of the Salmon FMP require the Council to abide by Court orders in the *U.S. v. Washington* (Puget Sound), *Hoh v. Baldrige* (Washington coast), and *U.S. v. Oregon* (Columbia River) cases, and the Solicitor General opinion (Klamath River) governing allocation and management of shared salmon resources. Much of the North of Falcon forum is dedicated to annual negotiations establishing allocation among the tribes, non-Indian fishing sectors, and ocean and inside interests. The results of these negotiations allow the Council to complete final management measure recommendations while meeting its biological, administrative, and allocation objectives.

The Columbia River treaty tribes establish periodic management agreements with the state co-managers and Federal agencies. These agreements are approved pursuant to provisions of *U.S. v. Oregon* procedures. Recent agreements have included an entitlement for the treaty tribes of 50 percent of the coho return destined for areas upstream from Bonneville Dam. Council area fisheries are shaped in order to meet this requirement in some years.

The Yurok and Hoopa Valley Tribes are entitled to 50 percent of the total Klamath River fall Chinook (KRFC) harvest, which is calculated as a harvest of KRFC equal to that taken in all non-Indian fisheries. In one of the Alternatives for the 2018, a portion of the non-tribal share is being directed to escapement, thus resulting in a tribal share greater than 50 percent. The Council must account for all harvest impacts when assessing the achievement of KRFC conservation objectives.

In addition to the allocation objectives associated with sharing between treaty Indian and non-Indian sectors, the Salmon FMP includes formulas for sharing Chinook and coho quotas. North of Cape Falcon there are sharing formulas between commercial and recreational sectors, and also among recreational port subareas. South of Cape Falcon there are sharing formulas for coho between commercial and recreational sectors. Alternatives for the 2018 salmon management measures adopted by the Council meet the allocation requirements for Chinook fisheries north of Cape Falcon in the Salmon FMP. In response to low stock projections for some coho salmon stocks on the Washington coast and Puget Sound, Alternative I reduces impacts in the commercial troll fishery relative to those in the recreational fishery; thus, Alternative I appears to deviate from the FMP harvest allocation guidelines and therefore may require fisheries north of Cape Falcon to be implemented under a temporary rule for emergency action if the Alternative is selected.

In support of the adoption of these Alternatives for public review, the Council reviewed the criteria used to evaluate requests for emergency action by the Secretary from Council Operating Procedure 10 (*italics below*) and provided the following preliminary rationale for considering a deviation from the FMP harvest allocation guidelines:

1. *The issue was not anticipated or addressed in the salmon plan, or an error was made.*
The issue does not appear to be caused by an error. Rather, the relatively healthy abundance of Chinook and the low abundance of some Washington coast and Puget Sound coho stocks present circumstances that were not anticipated in the FMP to the extent encountered this year. The recreational fishery is more dependent on coho than the commercial fishery, thus, Alternative I allocates a larger coho share to the recreational fishery. Therefore, the Council is considering an Alternative that varies from the coho harvest allocation guidelines.
2. *Waiting for a plan amendment to be implemented would have substantial adverse biological or economic consequences.*
In the event that regulations allocating a greater portion of the harvestable coho to the recreational fishery were not able to move forward, there could be significant economic consequences to the ports and communities of the Columbia River, Westport, La Push, and Neah Bay. The Alternative should optimize the harvest of harvestable stocks while meeting conservation objectives to the best of our ability. A plan amendment could not be completed in time.
3. *In the case of allocation issues, the affected user representatives support the proposed emergency action.*
The Council appreciates the hard work of the commercial troll and recreational fishery representatives involved in the North of Falcon process. Their assistance was critical to the development of the Alternatives and there is full support of the Alternatives going out for public review, including the Alternative that may deviate from strict adherence to the FMP.
4. *The action is necessary to meet FMP objectives.*
The structure of the Alternatives and the potential deviation from the strict terms of the FMP have the potential to better optimize harvest and conservation and thereby more fully meet FMP objectives.
5. *If the action is taken, long-term yield from the stock complex will not be decreased.*
It is not anticipated that any aspect of this Alternative would decrease long-term yield. The potential deviation from the FMP allocation guidelines is intended to have the opposite effect by implementing coho regulations that minimize harvest in areas of higher impact on stocks of concern while considering modest harvest opportunity where appropriate.

5.0 SPECIES LISTED UNDER THE ENDANGERED SPECIES ACT

Since 1989, NMFS has listed the following 17 Evolutionarily Significant Units (ESUs) of salmon under the ESA:

ESU	Status	Federal Register Notice			
		Most Recent		Original Listing	
Chinook					
Sacramento River Winter	Endangered	76 FR 50447	8/15/2011	54 FR 32085	8/1/1989
Snake River Fall	Threatened	76 FR 50448	8/15/2011	57 FR 14653	4/22/1992
Snake River Spring/Summer	Threatened	76 FR 50448	8/15/2011	57 FR 14653	4/22/1992
Puget Sound	Threatened	76 FR 50448	8/15/2011	64 FR 14308	3/24/1999
Lower Columbia River	Threatened	76 FR 50448	8/15/2011	64 FR 14308	3/24/1999
Upper Willamette River	Threatened	76 FR 50448	8/15/2011	64 FR 14308	3/24/1999
Upper Columbia River Spring	Endangered	76 FR 50448	8/15/2011	64 FR 14308	3/24/1999
Central Valley Spring	Threatened	76 FR 50447	8/15/2011	64 FR 50394	9/16/1999
California Coastal	Threatened	76 FR 50447	8/15/2011	64 FR 50394	9/16/1999
Chum					
Hood Canal Summer-Run	Threatened	76 FR 50448	8/15/2011	64 FR 14508	3/25/1999
Columbia River	Threatened	76 FR 50448	8/15/2011	64 FR 14508	3/25/1999
Coho					
Central California Coastal	Endangered	76 FR 50447	8/15/2011	61 FR 56138	10/31/1996
S. Oregon/ N. California Coastal	Threatened	76 FR 50447	8/15/2011	62 FR 24588	5/6/1997
Oregon Coastal	Threatened	76 FR 50448	8/15/2011	63 FR 42587	8/10/1998
Lower Columbia River	Threatened	76 FR 50448	8/15/2011	70 FR 37160	6/28/2005
Sockeye					
Snake River	Endangered	76 FR 50448	8/15/2011	56 FR 58619	11/20/1991
Ozette Lake	Threatened	76 FR 50448	8/15/2011	64 FR 14528	3/25/1999

As the listings have occurred, NMFS has initiated formal consultations and issued biological opinions (BOs) that consider the impacts resulting from implementation of the Salmon FMP, or from annual management measures, to listed salmonid species. NMFS has also reinitiated consultation on certain ESUs when new information has become available on the status of the stocks or on the impacts of the Salmon FMP on the stocks. The consultation standards referred to in this document include: (1) reasonable and prudent alternatives, (2) conservation objectives for which NMFS conducted Section 7 consultations and arrived at a no-jeopardy conclusion, and (3) NMFS requirements under Section 4(d) determinations.

A list of current BOs in effect, the species they apply to, and their duration follows:

Date	Evolutionarily Significant Unit covered and effective period
3/8/1996	Snake River spring/summer and fall Chinook and sockeye (until reinitiated)
4/28/1999	Oregon Coastal natural coho, Southern Oregon/ Northern California coastal coho, Central California coastal coho (until reinitiated)
4/28/2000	Central Valley spring Chinook (until reinitiated)
4/27/2001	Hood Canal summer chum 4(d) limit (until reinitiated)
4/30/2001	Upper Willamette Chinook, Upper Columbia spring Chinook, Lake Ozette sockeye, Columbia River chum, and 10 steelhead ESUs (until reinitiated)
4/30/2004	Puget Sound Chinook (until reinitiated)
6/13/2005	California coastal Chinook (until reinitiated)
4/30/2010	Sacramento River winter Chinook (until reinitiated. New BO anticipated by May 1 for 2018 fisheries)
4/26/2012	Lower Columbia River Chinook (until reinitiated)
4/9/2015	Lower Columbia River natural coho (until reinitiated)

Amendment 12 to the Salmon FMP added the generic category “species listed under the ESA” to the list of stocks in the salmon management unit and modified respective escapement goals to include “manage consistent with NMFS jeopardy standards or recovery plans to meet immediate conservation needs and

long-term recovery of the species.” Amendment 14 specified those listed ESUs and clarified which stocks in the FMP management unit were representative of the ESUs.

In a letter received by the Council on March 6, 2018, NMFS provided guidance on protective measures for species listed under the ESA during the 2018 fishing season. The letter summarized the requirements of NMFS’ BOs on the effects of potential actions under the salmon FMP on listed salmon and provided the anticipated consultation standards of the BOs in preparation for the 2018 management season, as well as further guidance and recommendations for the 2018 management season.

The ESA consultation standards, exploitation rates, and other criteria in place for the 2018 management season are presented in Table 5. Some listed stocks are either rarely caught in Council fisheries (e.g., spring Chinook from the upper Columbia River) or already receive sufficient protection from other salmon FMP and ESA standards (e.g., Central Valley spring Chinook). NMFS has determined that management actions designed to limit catch from these ESUs, beyond what will be provided by harvest constraints for other stocks, are not necessary.

Of the listed Chinook and coho, Council-managed fisheries have substantive impacts on Sacramento River winter Chinook (SRWC), Central Valley spring Chinook, California coastal Chinook (CCC), Snake River wild (SRW) fall Chinook, lower Columbia River (LCR) fall Chinook, and all of the coho stocks.

Additional listed salmonid ESUs found within the Council area, but not substantively impacted by Council managed fisheries, include:

Chinook

Snake River spring/summer (threatened)
Upper Willamette (threatened)

Puget Sound (threatened)
Upper Columbia River spring (endangered)

Sockeye

Snake River (endangered)

Ozette Lake Sockeye (threatened)

Chum

Columbia River (threatened)

Hood Canal summer (threatened)

Steelhead

Southern California (endangered)
South-central California coast (threatened)
Upper Columbia River (endangered)
Middle Columbia River (threatened)
Snake River Basin (threatened)
Puget Sound (threatened)

Central Valley, California (threatened)
Central California coast (threatened)
Upper Willamette River (threatened)
Lower Columbia River (threatened)
Northern California (threatened)

6.0 OBLIGATIONS UNDER THE PACIFIC SALMON TREATY

In 1985 the PST was signed, setting long-term goals for the benefit of the shared salmon resources of the United States and Canada. The PSC is the body formed by the governments of Canada and the United States to implement the Pacific Salmon Treaty.

6.1 *Chinook Salmon Management*

A new agreement under the PST was negotiated in 2008 and formally accepted by both the U.S. and Canada in December of 2008. This new agreement took effect on January 1, 2009, and includes a 30 percent reduction in the catch ceilings for AABM fisheries off the West Coast Vancouver Island, and a 15 percent reduction in the catch ceilings for AABM fisheries in Southeast Alaska Chinook relative to the catch ceilings in effect for these fisheries since 1999. Under the terms of the 2009 PST Agreement, Council fisheries for Chinook salmon continue to be subject to the ISBM provisions of Annex 4, Chapter 3, adopted in 1999. These provisions require the combined adult equivalent (AEQ) exploitation rate by all U.S. fisheries south of the U.S./Canada border be reduced by 40 percent from the 1979-1982 base period for a specified set of Chinook indicator stocks, substantively impacted in U.S. ISBM fisheries, if they do not achieve their management objectives.

Many Chinook stocks of concern to the Council are affected by fisheries off Canada and Alaska. Maximum allowable catches by AABM fishery complexes off the WCVI, Northern British Columbia, and Southeast Alaska are determined through the annual calibration of the PSC Chinook Model. Canadian fisheries that are not included in AABM complexes are managed under ISBM constraints, which require a 36.5 percent reduction in AEQ exploitation rates relative to the 1979-1982 base period on specified Chinook indicator stocks that do not achieve their management objectives. Expectations for Canadian and Alaskan fisheries harvest and stock abundance forecasts are incorporated into the Chinook Fishery Regulation Assessment Model (FRAM) to estimate total exploitation rate impacts from all marine fisheries (Table 5).

Key considerations for Canadian domestic fishery management for Chinook in 2018 include: (1) meeting domestic conservation obligations for WCVI, Strait of Georgia, and Fraser River spring stocks; (2) Chinook harvests by native fisheries; and (3) incidental impacts during commercial and native fisheries directed at sockeye, and chum salmon. It is anticipated that the details of the fishery regulatory package off WCVI will be driven by levels of allowable impact on WCVI and Lower Strait of Georgia Chinook and Interior Fraser (Thompson River) coho.

6.2 *Coho Salmon Management*

In 2002, the PSC adopted a management plan for coho salmon originating in Washington and Southern British Columbia river systems. The plan is directed at the conservation of key management units, four from Southern British Columbia (Interior Fraser, Lower Fraser, Strait of Georgia Mainland, and Strait of Georgia Vancouver Island) and nine from Washington (Skagit, Stillaguamish, Snohomish, Hood Canal, Strait of Juan de Fuca, Quillayute, Hoh, Queets, and Grays Harbor). Exploitation rate limits for intercepting fisheries are established for individual management units through formulas specified in the 2002 PST Southern Coho Management Plan, and are based on total allowable fishery exploitation rates.

The categorical status of U.S. coho management units is reported to comply with obligations pursuant to the 2002 PST Southern Coho Management Plan. Categorical status is employed by the PSC under the 2002 PST Southern Coho Management Plan to indicate general ranges of allowable total exploitation rates for U.S. and Canadian coho management units. Three categories are employed: low (total exploitation rate less than 20 percent), moderate (total exploitation rate 20 percent to 40 percent), and abundant (total exploitation rate greater than 40 percent). For the Puget Sound management units, the 2002 PST Southern Coho Management Plan uses the thresholds and stepped harvest rate goals from the Comprehensive Coho Agreement, developed by Washington and the Puget Sound tribes, and adopted by the Council as FMP

conservation objectives in November 2009. Actual exploitation rate constraints for Canadian fisheries on U.S. coho management units are determined by formulas that specify sharing of allowable exploitation rates and a “composite rule.” The composite rule adjusts constraints for Canadian fishery exploitation rates based on the number of U.S. management units which fall in a given category. For example, if only one Washington coastal or Puget Sound coho management unit is in low status, Canadian fisheries are constrained to a total exploitation rate on that unit of 12 percent; if two or more Washington coastal management units are in low status, the constraint becomes 10 percent. The most restrictive exploitation rate limit for Canadian fishery impacts on U.S. coho management units is 10 percent.

For several Washington coastal coho management units, management objectives are expressed as a range of spawning escapements expected to produce MSY. Allowable exploitation rates are calculated from the forecast abundance and the lower end of the escapement range and used to classify the categorical status of the management units. This rate is the maximum allowed under the PST when the management unit is in the moderate or abundant status, but exploitation rates up to 20 percent are allowed if the management unit is in the low abundance status.

For 2018, Puget Sound and Washington coast coho constraints are as follows:

FMP			
	FMP Stock	Total Exploitation Rate Constraint^{a/}	Categorical Status^{a/}
	Skagit	35%	Low
	Stillaguamish	35%	Low
	Snohomish	40%	Low
	Hood Canal	65%	Normal
	Strait of Juan de Fuca	20%	Critical
	Quillayute Fall	59%	
	Hoh	65%	
	Queets	65%	
	Grays Harbor	65%	

PST Southern Coho Management Plan			
	U.S. Management Unit	Total Exploitation Rate Constraint^{b/}	Categorical Status^{c/}
	Skagit	35%	Moderate
	Stillaguamish	35%	Moderate
	Snohomish	40%	Moderate
	Hood Canal	65%	Abundant
	Strait of Juan de Fuca	20%	Low
	Quillayute Fall ^{c/}	40%	Abundant
	Hoh ^{c/}	66%	Abundant
	Queets ^{c/}	20%	Low
	Grays Harbor	20%	Low

a/ Preliminary. For Puget Sound stocks, the exploitation rate constraints and categorical status (Normal, Low , Critical) reflect application of Comprehensive Coho Agreement rules, as adopted in the FMP. For Washington Coast stocks, exploitation rate constraints represent MFMT. Note that under *U.S. v. Washington* and *Hoh v. Baldrige* case law , the management objectives can differ from FMP objectives provided there is an annual agreement among the state and tribal comanagers; therefore, the exploitation rates used to report categorical status do not necessarily represent maximum allow able rates for these stocks.

b/ Preliminary. For Puget Sound and Washington Coast management units, the exploitation rate constraints reflect application of the 2002 PST Southern Coho Management Plan.

c/ Categories (Abundant, Moderate, Low) correspond to the general exploitation rate ranges depicted in paragraph 3(a) of the 2002 PST Southern Coho Management Plan. For Washington Coast stocks, categorical status is determined by the exploitation rate associated w ith meeting the escapement goal (or the low er end of the escapement goal range). This also becomes the maximum allow able rate unless the stock is in the "Low " status. In that case, an ER of up to 20% is allow ed.

Key considerations for Canadian fishery management for coho in 2018 are expected to include: (1) meeting domestic conservation obligations for Interior Fraser (including Thompson River) coho; (2) coho harvests by First Nations fisheries; (3) incidental impacts during commercial and First Nations fisheries directed at pink, Chinook, sockeye, and chum salmon; and (4) the desire to provide increased opportunity for sport fisheries through mark-selective retention regulations. The Canadian fishery regimes affecting coho are expected to be driven by Canadian domestic allowable impacts on the Thompson River component of the Interior Fraser management unit.

In previous years prior to 2014, Canadian fisheries were managed so as not to exceed a three percent maximum exploitation rate. In May 2014, Canada decided to permit up to a 16% exploitation rate on upper Fraser coho in Canadian fisheries to allow for impacts in fisheries directed at a record Fraser sockeye forecast. Since 2015, upper Fraser coho in Canadian fisheries have been managed per low status limitations. The projected status of Canadian coho management units in 2018 indicates continuing concerns for the condition of Interior Fraser coho. The Interior Fraser coho management unit is anticipated to remain in low status, resulting in a requirement to constrain the total mortality fishery exploitation rate for 2018 Southern U.S. fisheries to a maximum of 10.0 percent.

7.0 DESCRIPTION OF THE ALTERNATIVES

Detailed information on the proposed ocean salmon regulation Alternatives are presented in Tables 1 (non-Indian commercial), 2 (recreational), and 3 (treaty Indian). Notable changes from recent seasons are highlighted below.

7.1 Commercial

Alternatives for the area north of Cape Falcon reflect a lower total abundance of both Chinook and Columbia River hatchery and natural coho compared to 2017 forecasts. In 2018, allowable catch of Chinook will likely be lower than 2017 due to a lower relative abundance of Spring Creek Hatchery Chinook, similar expected impacts in northern fisheries, and a reduced total exploitation rate limit on LCR natural tule fall Chinook compared to 2017. Coho catch quotas will be similar to or lower than 2017 due to reduced harvestable Columbia River hatchery coho and continued low abundance of natural stocks on the Washington coast and in Puget Sound.

Alternative I north of Cape Falcon assigns 75 percent of the troll Chinook quota to the May-June Chinook directed fishery, Alternative II assigns 60 percent to the May-June Chinook directed fishery, while Alternative III assigns 50 percent to the May-June Chinook directed fishery. In Alternatives I and II, the May-June fishery opens initially seven days per week with sub-quotas in the area north of the Queets River and in the area south of Leadbetter Point. Landing and possession limits per Thursday-Wednesday landing week are in place in the area north of the Queets River in Alternative II. In Alternative III, the May-June fishery opens May 1-8, then five days per week with landing and possession limits in all areas and sub-quotas in the area north of the Queets River and in the area south of Leadbetter Point. The summer all-salmon fishery in Alternatives I and II opens seven days per week and includes a Chinook sub-quota in the area north of the Queets River. Alternative I includes a weekly landing and possession limit for Chinook in the area north of the Queets River and a small weekly coho landing and possession limit in all areas, Alternative II includes weekly landing and possession limits for both Chinook and coho in all areas. Alternative III is open five days per week with sub-quotas in the area north of the Queets River and in the area south of Leadbetter Point, and includes landing and possession limits for both Chinook and coho in all areas.

Commercial fisheries south of Cape Falcon will primarily be constrained by Sacramento River fall Chinook (SRFC), KRFC, Rogue/Klamath hatchery coho and LCR natural tule fall Chinook. Both SRFC and KRFC meet the criteria for overfished status in 2018. In an effort to start the rebuilding process, NMFS and the

Council provided guidance to structure fisheries that achieve higher expected spawner escapement levels than those required by the FMP for SRFC and KRFC.

For the area between Cape Falcon and Humbug Mountain, Alternative I for Chinook fisheries opens on May 7, with approximately three weeks open in each of May, June, and July, and two weeks of fishing at the beginning of August. The fishery re-opens on September 1 and remains open through October. Alternative II opens on May 15, and has approximately two weeks of fishing in the months of May, June, and July. August through October fisheries match those in Alternative I. Under Alternative III, fisheries are structured to allow for a similar number of days open as in Alternative II, but the seasons from May through August consist of short (4-5 day) openings that are spread throughout each of the months.

In the Oregon portion of the Klamath Management Zone (KMZ) under Alternative I, the season would open on May 9 and run through the end of the month. June, July, and August would be managed by monthly quotas of 1,500, 2,000, and 500 Chinook, respectively, with weekly landing and possession limits. Under Alternative II, the fishery would open on June 12, with June-August quotas sizes that match those in Alternative I. However, under Alternative II, the monthly quota periods are shorter than Alternative I and daily landing and possession limits of 20 Chinook would be in place. Fisheries are closed in this area under Alternative III.

For the California portion of the KMZ, Alternative I allows for monthly quotas of 4,000 Chinook in June, July, and August. Alternative II has 2,000 Chinook quotas for May, July, and August, and a 4,000 Chinook quota in June. Alternative III has Chinook quotas of 5,000 in May and June, 2,000 in July and August, and 3,000 in September. Under each Alternative, the fishery would be open five days per week with a landing and possession limit of 20 Chinook per day.

In the Fort Bragg area, each Alternative allows for fishing in most of August and all of September. Under Alternative III, the fishery would begin on August 5 and have four fewer days open in that month relative to Alternatives I and II.

In the San Francisco area under Alternative I, the fishery would open for one week in mid-June, most of August, and all of September. For Alternative II, the fishery would open for most of August and all of September. Alternative III only allows for September fishing. The October Monday through Friday fall area target zone fishery from Point Reyes to Point San Pedro is included in each of the Alternatives.

In the Monterey area, fishing would be confined to early May under each of the Alternatives. Under Alternatives I, II, and III, the fishery would be open for 16, 15, and 10 days, respectively.

7.2 Recreational

For the area north of Cape Falcon: In Alternative I, the sub-areas north of the Queets River and the area south of Leadbetter Point open June 23 for all salmon species, seven days per week, while the area between the Queets River and Leadbetter Point opens for all salmon species, seven days per week on July 1. The closing date in all sub-areas is September 3. This Alternative includes a late-season opportunity in the area between Cape Alava and the Queets River September 29 through October 14.

In Alternative II, the area between the Queets River and Leadbetter Point opens for all salmon species five days per week (Sunday through Thursday) on June 24. All other sub-areas open for all salmon species seven days per week on June 30. The scheduled ending date for all sub-areas is September 3. This Alternative includes a late-season opportunity in the area between Cape Alava and the Queets River September 29 through October 14.

In Alternative III, all sub-areas north of Cape Falcon open for all salmon species on July 1. All sub-areas are open seven days per week with the exception of the area between the Queets River and Leadbetter Point, which is open five days per week. The scheduled closing date for all sub-areas is September 3, and there is no late season fishery in this Alternative.

In all Alternatives north of Cape Falcon, all retained coho must be marked with a healed adipose fin clip. In the Westport subarea, the Grays Harbor Control Zone is closed beginning August 13 in all Alternatives.

South of Cape Falcon, for the North and Central Oregon coast: Chinook fisheries are open March 15 through October 31 under each of the Alternatives. Alternatives I and II feature a mark-selective coho quota fishery in the summer, with different quota sizes and closing dates for those Alternatives. A non-mark-selective coho fishery exists for the Cape Falcon to Humbug Mountain area beginning on September 1 under Alternatives I and III.

In the Oregon KMZ, Alternatives I and III open for Chinook fishing on May 19. The season continues through late August under Alternative I and July 4 under Alternative III. For Alternative II, the fishery would be open for approximately half of June, half of July and nine days in August.

In the California KMZ under Alternative I, the fishery would open on June 20 and continue through the end of July. The fishery would then re-open in late August and run through Labor Day, September 3. Fisheries under Alternatives II and III would open on July 1 and June 16, respectively, and close on Labor Day.

In the Fort Bragg area, each Alternative has fisheries opening in July and closing at the end of October, with the starting dates in July varying by Alternative.

For the San Francisco area, the opening date ranges across Alternatives from early June to late July, with the seasons continuing through the end of October.

For the Monterey area, from Pigeon Point to the U.S./Mexico border, the fishery opens on April 7 under each of the Alternatives. The fishery would continue through the end of July under Alternative I, mid-June under Alternative II, and the end of May under Alternative III.

Recreational fisheries in California will be operating under a 20-inch minimum size limit in all areas except in the Monterey area, where there will be a 24-inch minimum size limit. These size limits are consistent across all three Alternatives.

7.3 *Treaty Indian*

Alternatives are similar in structure to past years, with proposed quotas that are the same as 2017 for Chinook and coho. All three Alternatives will have a Chinook directed fishery in the May-June time period, with half of the Chinook quota and the all species fishery occurring from July to September 15. All Alternatives have the provision that if the Chinook quota for the May-June fishery is exceeded, the excess will be deducted from the later all-salmon season. Also, any balance of fish remaining from the spring season (May - June) may be transferred to the summer/fall season (July - September).

8.0 AFFECTED ENVIRONMENT AND ANALYSIS OF IMPACTS

Based on National Oceanic and Atmospheric Administration (NOAA) Administrative Order (NAO) 216-6 Section 6.02, the affected environment may consist of the following components:

- Target (FMP) species

- Social or economic environments
- Non-target species
- Essential Fish Habitat
- Public health or safety
- ESA listed (non-salmon) species or critical habitat
- Marine mammals
- Biodiversity or ecosystem function

8.1 *Salmon Stocks in the Fishery*

Target stocks include Chinook, coho, and pink salmon stocks identified in Appendix A, Table A-1 of Preseason Report I (Part 1 of this EA; PFMC 2018b), which includes several ESA listed Chinook and coho stocks. These ESA listed stocks are not targeted in Council area salmon fisheries, but will be included in the analysis of effects on target species because they are impacted coincidentally with targeted salmon stocks and frequently constrain access to targeted stocks. Environmental impacts to other ESA listed species (e.g., marine mammals) from the Alternatives will be analyzed in a later section of this EA.

A description of the historical baseline for this component of the affected environment is presented in the Review of 2017 Ocean Salmon Fisheries (PFMC 2018a). A more general description of salmon life history and population characteristics is presented in PFMC 2006. The current status (2018 ocean abundance forecasts) of the environmental components expected to be affected by the 2018 ocean salmon fisheries regulation Alternatives (FMP salmon stocks) are described in PFMC 2018b. The criteria used to evaluate whether there are significant effects from the Alternatives on target stocks are achievement of conservation objectives, ACLs, and rebuilding criteria. For ESA listed stocks impacted by the fishery, ESA consultation standards are applied to determine whether there are significant effects. The Salmon FMP conservation objectives are based on the best available science and are intended to prevent overfishing while achieving optimum yield from West Coast salmon fisheries as required by the MSA. The ESA consultation standards are likewise based on the best available science and are intended to ensure that fishery impacts do not appreciably reduce the likelihood of survival and recovery of listed species in the wild. FMP conservation objectives also include criteria for rebuilding overfished stocks. Therefore conservation objectives and consultation standards are appropriate indicators for determining the significance of fishery management actions referred to in NAO 216-6, Section 6.02.

8.1.1 **Chinook Salmon**

8.1.1.1 *North of Cape Falcon*

Abundance projections important to Chinook harvest management north of Cape Falcon in 2018 are:

- *Columbia River hatchery tules*. Combined production of Lower River Hatchery (LRH) and Spring Creek Hatchery (SCH) stocks returning to the Columbia River is forecasted to be 112,500, which is lower than the 2017 preseason expectation of 250,800. The 2018 LRH forecast is 62,400, which is below the forecast of 92,400 in 2017. The 2018 SCH forecast is 50,100, which is considerably lower than last year's forecast of 158,400.

The primary Chinook salmon management objective shaping the Alternatives north of Cape Falcon is:

- NMFS consultation standards and annual guidance for ESA listed stocks as provided in Section 5.0 above. Relevant stocks for the area north of Cape Falcon include LCR natural tule Chinook, Columbia Lower River Wild (LRW) fall Chinook, and Snake River Wild (SRW) fall Chinook.

Fishery quotas under the Alternatives are presented in Table 4. Stock-specific management criteria and their forecast values under the Alternatives are provided in Table 5. Projected fishery landings, bycatch, and bycatch mortality under the Alternatives are summarized in Table 6. Table 7 provides a breakdown of impacts by fishery and area for LCR natural tule Chinook. Descriptions pertaining to the achievement of key objectives for Chinook salmon management north of Cape Falcon are found below.

- *LCR natural tule fall Chinook.* The exploitation rate on LCR natural tule fall Chinook in Alternatives I and II is over the 38.0 percent NMFS consultation standard maximum in 2018, assuming the same preseason river fishery harvest rates as last year. Additional shaping of PSC and inriver fisheries prior to the April Council meeting may result in minor changes to the anticipated ERs presented in the Alternatives. LCR tules are the constraining Chinook stock for fisheries north of Cape Falcon in 2018.
- *LRW fall Chinook.* Alternatives have ocean escapement values ranging from 7,600 to 7,700, which exceeds the ESA consultation standard of 6,900 minimum ocean escapement. LRW Chinook will not constrain ocean fisheries north of Cape Falcon in 2018.
- *SRW fall Chinook.* Alternatives have ocean exploitation rates of 52.0 percent or less of the base period exploitation rates, which is less than the ESA consultation standard of no more than 70 percent of the 1988-1993 base period exploitation rate for all ocean fisheries. SRW Chinook will not constrain ocean fisheries north of Cape Falcon in 2018.

Alternative III for Chinook fisheries north of Cape Falcon satisfies NMFS ESA consultation standards and guidance, FMP conservation objectives, and all other objectives for relevant Chinook stocks (Table 5). The NMFS ESA consultation standard for LCR natural tule fall Chinook is exceeded in Alternatives I and II. Meeting the ESA consultation standard for natural tules may be achievable following updates in PSC fisheries and shaping of inriver fisheries.

8.1.1.2 South of Cape Falcon

Status of Chinook stocks important to 2018 Chinook harvest management south of Cape Falcon are:

- *SRFC.* The SI forecast is 229,432, which is similar to last year's preseason forecast of 230,700.
- *KRFC.* The ocean abundance forecast for this stock is 330,049 age-3, 28,415 age-4, and 767 age-5 fish. Last year's preseason forecast was 42,026 age-3, 10,558 age-4, and 1,662 age-5 fish.
- *SRWC.* The forecast of age-3 escapement absent fishing is 1,594.

Key Chinook salmon management objectives shaping the Alternatives south of Cape Falcon are:

- SRFC hatchery and natural area spawner escapement of at least 122,000 adults, which is produced, in expectation, by a maximum exploitation rate of 46.8 (FMP control rule). Council guidance provided at the March meeting included meeting minimum escapement levels of 151,000, 165,000, and 180,000 under Alternatives I, II, and III, respectively. This was following guidance provided by NMFS to target an escapement around the upper end of the SRFC conservation objective range of 122,000 – 180,000 hatchery and natural area adults.
- KRFC natural area spawner escapement of at least 40,700 adults, which is produced, in expectation, by a maximum exploitation rate of 31.9 percent (FMP control rule). NMFS guidance included targeting spawner escapement levels greater than 40,700 (S_{MSY}).

- NMFS consultation standards and annual guidance for ESA listed stocks as provided in Section 5.0 above. Relevant stocks for the area south of Cape Falcon include SRWC, California coastal Chinook, SRW fall Chinook, and LCR natural tule Chinook.

In 2018, invoking *de minimis* fishing rates that were adopted under FMP Amendment 16 will not be necessary for KRFC or SRFC.

Fishery quotas under the Alternatives are presented in Table 4. Stock-specific management criteria and their forecast values under the Alternatives are provided in Table 5. Projected fishery landings, bycatch, and bycatch mortality under the Alternatives are summarized in Table 6. Table 7 provides a breakdown of impacts by fishery and area for LCR tule Chinook. Appendix A presents tables of SRFC impacts, KRFC impacts, and the SRWC age-3 impact rate, by fishery/month/management area, under the three Alternatives. Descriptions pertaining to the achievement of key objectives for Chinook salmon management south of Cape Falcon are found below.

- *SRFC*. The control rule-defined minimum of 122,000 hatchery and natural area adult spawners is met by each of the Alternatives. Alternatives I and III meet Council guidance for achieving a minimum of 151,000 and 180,000 hatchery and natural area adult spawners, respectively. Under Alternative II, Council guidance for a minimum of 165,000 spawners was not met; projected hatchery and natural area spawners is 164,934 adults.
- *KRFC*. The control rule-defined minimum of 40,700 natural area adult spawners is met by each of the Alternatives.
- *SRWC*. The ESA consultation standard that (1) limits the forecast age-3 impact rate in 2018 fisheries south of Point Arena to a maximum of 14.4 percent and (2) specifies time/area closures and minimum size limit constraints south of Point Arena, is met by each of the Alternatives.
- *California coastal Chinook*. The ESA consultation standard that limits the forecast KRFC age-4 ocean harvest rate to a maximum of 16.0 percent is met by each of the Alternatives.
- *SRW fall Chinook*. SRW Chinook will not constrain ocean fisheries south of Cape Falcon in 2018.

Alternative III for Chinook fisheries south of Cape Falcon satisfies NMFS ESA consultation standards and guidance, FMP conservation objectives, and all other objectives for relevant Chinook stocks. Alternatives I and II do not meet the ESA consultation standard and guidance for LCR natural tule fall Chinook. Alternative II does not meet NMFS and Council guidance for SRFC (Table 5).

8.1.2 Coho Salmon

Abundance projections important to coho harvest management in Council area fisheries are:

- *OPI Hatchery coho*. The 2018 forecast for hatchery coho from the Columbia River and the coast south of Cape Falcon of 294,100 is lower than the 2017 forecast of 394,300. The Columbia River early coho forecast is 164,700 compared to the 2017 forecast of 231,700 and the Columbia River late coho forecast is 121,500, compared to the 2017 forecast of 154,600.
- *OCN coho*. The 2018 OCN forecast is 54,900 compared to the 2017 forecast of 101,900.
- *LCN coho*. The 2018 LCN forecast is 21,900 compared to the 2017 forecast of 30,100.

- *Puget Sound coho.* Among Puget Sound natural stocks, Strait of Juan de Fuca coho are in the critical category in 2018. Skagit, Stillaguamish and Snohomish coho are in the low category. Hood Canal coho are in the normal category.
- *Interior Fraser (Thompson River) coho.* This Canadian stock continues to be depressed, and will continue to constrain ocean coho fisheries north of Cape Falcon in 2018.
- *Washington coastal coho.* The Queets River coho forecast is low in 2018 and will constrain ocean fisheries. The Grays Harbor coho forecast is also low in 2018 and may constrain ocean fisheries.

Key coho salmon management objectives shaping the Alternatives are:

- NMFS consultation standards and annual guidance for ESA listed stocks as provided in Section 5.0 above. Relevant stocks include Central California Coast coho (south of the Oregon/California border), Southern Oregon/Northern California Coastal (SONCC) coho, OCN coho, and LCN coho. The maximum allowable exploitation rates for 2018 are: (1) a combined marine/freshwater exploitation rate not to exceed 15.0 percent for OCN coho, (2) a combined exploitation rate in marine-area and mainstem Columbia River fisheries not to exceed 18.0 percent for LCN coho, and (3) a marine exploitation rate not to exceed 13.0 percent for Rogue/Klamath hatchery coho, used as a surrogate for the SONCC coho ESU. Furthermore, coho retention is prohibited in all California ocean fisheries.
- Salmon FMP conservation objectives and obligations under the PST Southern Coho Management Plan for stocks originating along the Washington coast, Puget Sound, and British Columbia as provided in Section 6.2 above. The forecasts for several Puget Sound and Interior Fraser coho stocks in 2018 are low; however, the majority of the exploitation on these stocks occurs in Puget Sound and will be addressed in development of fishing seasons for inside waters during the North of Falcon co-management process by the state and tribes prior to the April Council meeting. Because of their abundance status, Interior Fraser coho are subject to an exploitation rate ceiling of 10.0 percent in southern U.S. fisheries under the PST Southern Coho Management Plan. Queets coho will likely be the key management stock constraining ocean fisheries north of Cape Falcon.

Fishery quotas under the Alternatives are presented in Table 4. Stock-specific management criteria and their forecast values under the Alternatives are provided in Table 5. Projected fishery landings, bycatch, and bycatch mortality under the Alternatives are summarized in Table 6. Table 7 provides a breakdown of impacts by fishery and area for LCN, OCN, and RK coho. Table 8 provides expected coho mark rates for west coast fisheries by month.

- *LCN coho.* All Alternatives satisfy the maximum 18.0 percent exploitation rate when 2018 projected marine impacts are combined with the 2017 preseason modeled impacts for mainstem Columbia River fisheries. Marine exploitation rates projected for 2018 Alternatives range from 11.1 percent in Alternative I to 5.9 percent in Alternative III.
- *Queets wild coho.* The FMP MSY adult spawner objective for Queets wild coho is 5,800; projected ocean escapement values for the 2018 Alternatives range from 5,900 in Alternative I to 6,300 in Alternative III.

- *Interior Fraser coho.* Southern U.S. exploitation rates in Alternatives II and III are less than the 10.0 percent maximum required by the PST Southern Coho Management Plan when 2018 projected marine impacts are combined with the 2017 preseason modeled impacts for Puget Sound fisheries. Alternative I is slightly above the maximum exploitation rate. Shaping of the State and Tribal inside fisheries will occur during the North of Falcon process, and ocean fisheries may require further shaping before final management measures are adopted in order to comply with the PST limit.
- *Puget Sound coho.* Total exploitation rates for all Puget Sound stocks are less than the maximum required by the FMP matrix in all Alternatives when 2018 projected marine impacts are combined with the 2017 preseason modeled impacts for Puget Sound fisheries. Shaping of the State and Tribal inside fisheries will occur during the North of Falcon process, and ocean fisheries may require further shaping before final management measures are adopted in order to comply with the FMP limits.

All of the Alternatives for coho fisheries satisfy NMFS ESA consultation standards and guidance, FMP conservation objectives, and all other objectives for relevant coho stocks other than those listed above (Table 5).

8.1.3 Pink Salmon

Pink salmon runs occur in odd-numbered years and will not be an important management consideration in 2018.

8.1.4 Summary of Environmental Impacts on Target Stocks

Stock forecasts for some Canadian stocks and the actual PST limits on AABM fisheries are not known at this time, and preliminary values have been used in the analyses presented in this report. These forecasts and limits will be available prior to the April Council meeting. Negotiations in the North of Falcon process will not be completed until the April Council meeting. These negotiations affect allocation of stock impacts primarily among inside fisheries (State, Tribal, recreational, various commercial sectors, etc.) but also between inside and ocean fisheries.

Environmental impacts on salmon stocks are assessed based on compliance with conservation objectives, ACLs, rebuilding plans, and ESA consultation standards. As noted in the description of the Alternatives (Tables 1, 2, and 3), if analyses using the updated values and the results of these negotiations do not result in compliance with FMP conservation objectives or ESA consultation standards, some Alternatives will not be viable and impacts in Council-area fisheries will need to be modified to comply with all applicable objectives and standards. If updated values and negotiations result in compliance with applicable objectives and standards, Council area fishery impacts would not increase; therefore, the analysis of effects would include the upper bound of a reasonable range of effects under the Alternatives considered for 2018 Council area ocean salmon fisheries.

8.1.4.1 Targeted Salmon Stocks

Based on current assumptions regarding Canadian, Alaskan, and inside fishery impacts, all target salmon stocks (non-ESA listed) meet their FMP conservation objectives under Alternatives I, II, and III. While ocean escapement levels in all Alternatives exceed the FMP MSY adult spawner objective for Queets wild coho of 5,800, when combined with 2017 in-river fisheries, spawning escapement objectives are not projected to be met under all Alternatives. However, provisions of the PST Southern Coho Management Plan allow Tribal and WDFW comanagers to agree to escapement objectives below the FMP MSY objective. These negotiations will be ongoing through the North of Falcon process.

8.1.4.2 ESA Listed Salmon Stocks

Based on current assumptions regarding Canadian, Alaskan, and inside fishery impacts, all ESA listed salmon stocks meet their ESA consultation standards under Alternative III (Table 5). Under Alternatives I and II, ESA consultation standards are met except that the total exploitation rate for LCN tule Chinook exceeds the allowable rate (Table 5). Changes in the impacts in northern fisheries from current assumptions and further shaping of ocean and inside fisheries may result in compliance with the ESA consultation standards; however, additional restrictions to Council area fisheries may be necessary to meet both consultation standards and inside fishery needs.

Council-area fisheries have a minor impact on ESA-listed Puget Sound Chinook and on most Chinook stocks subject to the 2009 PST Agreement. At this point there appears to be sufficient flexibility within Council and inside area fisheries as a whole to achieve protection for the Puget Sound Chinook ESU.

8.2 Socioeconomics

In general, Council-area ocean salmon fisheries are managed to meet conservation objectives for stocks that are expected to achieve optimum yields while minimizing impacts on depressed stocks. While analysis of biological impacts is organized around salmon stocks that spawn in particular rivers, socioeconomic impacts under the regulatory alternatives are analyzed by ocean fishery management areas as described in the Salmon FMP. Although most stocks range across several areas, the abundance of individual stocks varies between each ocean area, thus the use of management areas facilitates more optimal management of each stock than would coastwide regulations. Compared with *2017 Preseason Report II*, the fishery management areas shown in this section have been disaggregated. From north to south, the fishery management areas are (1) from the U.S./Canada border to Cape Falcon (45°46' N. lat.), which is on the Oregon coast south of the Columbia River mouth; (2) between Cape Falcon and Humbug Mountain (42°40'30" N. lat.) on Oregon's southern coast; (3) the Oregon Klamath Management Zone (KMZ), which covers ocean waters from Humbug Mountain in southern Oregon to the Oregon/California Border; (4) the California Klamath Management Zone (California KMZ), which includes the area from the Oregon-California border to Horse Mountain (40°05' N. lat.) in northern California; (5) from Horse Mountain to Point Arena (38°57'30" N. lat.) in Mendocino County; (6) from Point Arena to Pigeon Point (37°11'00" N. lat.) north of Santa Cruz; and (7) from Pigeon Point to the U.S./Mexico border. There are also numerous subdivisions within these areas that are used to further balance stock conservation and harvest allocation needs. A map of the boundaries of these areas, also showing the main salmon ports, appears on the inside back cover of this report. Tribal ocean fisheries (including Washington State statistical area 4B) occur only in the area north of Cape Falcon. The S'Kallam, Makah, Quillayute, Hoh, and Quinault Tribes all have fishery areas in the northern part of the area north of Cape Falcon (Table 3). Other federally-recognized tribes participate in in-river fisheries. The following analysis of impacts on the user of the resource and fishing communities is organized around the seven broad management areas.

The Review of 2017 Ocean Salmon Fisheries (PFMC 2018a) provides an historical description of the salmon fishery affected environment. In addition to stock status assessments, the document reports socioeconomic impacts of historical fisheries and analyzes the current socioeconomic status of West Coast salmon fisheries. For the purpose of characterizing the economic impact of non-tribal Council-area ocean salmon fisheries, commercial exvessel value, recreational fishing trips, and community level personal income impacts resulting from both commercial and recreational fishing activities are used.

The short-term economic effects of the regulatory Alternatives for non-Indian fisheries are shown in Tables 9 and 10. Table 9 shows projected commercial troll impacts expressed in terms of estimated potential exvessel value. Table 10 shows projected recreational fisheries impacts in terms of the number of projected angler-trips and community personal income impacts associated with those activities. Note that exvessel values shown under the Alternatives for the commercial troll fishery in Table 9 and income impact values

shown for the recreational fishery in Table 10 are not directly comparable. More directly comparable measures of short-term economic impacts from commercial and recreational salmon fisheries appear in Figures 1 and 2, which show estimated community income impacts under the commercial troll and recreational fishery Alternatives, respectively, compared to historical impacts in real (inflation-adjusted) dollars. In general, income impacts are estimates of the amount of income generated by the economic linkages associated with a particular activity (see Chapter IV of the Review of 2017 Ocean Salmon Fisheries for additional description of income impact estimates). Income impacts are a measure of relative economic activity. Differences in income impacts between an Alternative and the value for the 2017 fishery indicate the expected impact of the Alternative compared with not taking action, (i.e., if 2017 regulations were to remain in place). While reductions in income impacts associated with an activity may not necessarily reflect net losses, they are likely to indicate losses to businesses and individuals in a community that depends on that activity for livelihood.

Total economic effects for non-Indian fisheries under the Alternatives may vary more or less than is indicated by the short-term impacts on ocean fisheries reported below. Salmon that are not harvested in the ocean do not necessarily result in an economic loss, as they may become available for additional inside harvest in non-Indian commercial, tribal, and recreational fisheries or may provide additional spawning escapement. Alternatives that restrict ocean harvests may increase opportunities for inside harvesters (e.g., higher commercial revenue or more angler trips) or contribute to higher inside catch per unit effort (CPUE) (i.e., lower costs for commercial harvesters and/or higher success rates for recreational fishers). Harvest forgone by both ocean fisheries and inside fisheries may impact future production, although the magnitude of that effect is uncertain depending on the resulting escapement level compared to MSY escapement and the nature of the spawner-recruit relationship, both of which are influenced by habitat conditions in the ocean and in the spawning grounds.

Fishing effort estimates for the recreational fishery south of Cape Falcon are based on measures developed by the STT for modeling biological impacts. STT estimates for south of Cape Falcon use multi-year averages to predict effort for the coming year. Consequently, if the multi-year average for a particular time period and area happens to be higher than last year's effort level, then the model may forecast an increase in effort for the coming year even though management measures may actually be relatively more constraining, or *vice-versa*. Estimated recreational effort includes relatively small amounts occurring in state waters only (SWO) fisheries off central and southern Oregon. Recreational fishery effort north of Cape Falcon was estimated using historical CPUE estimates ("success rates") applied to salmon quotas and expected harvest levels under the Alternatives. Projections of recreational catch north of Cape Falcon were made by applying the historic ratios of actual catch to the actual quotas times the proposed quotas for the two species under each alternative. Effort and economic impacts were then estimated by summing recent year weighted average coho and Chinook angler success rates multiplied by the projected coho and Chinook catch under the Alternatives.

Exvessel revenues in Table 9 are based on estimated harvest by catch area while commercial income impacts in Figure 1 are based on projected deliveries by landing area. Historically, there has been a divergence between these two measures. The difference is due to salmon caught in certain catch areas being delivered to ports in neighboring catch areas. This pattern is particularly true for areas between Humbug Mountain in Oregon and Point Arena in California. In an attempt to account for this effect and assign income impacts to the "correct" landing area, adjustments are made based on historical patterns. The patterns are typically inferred from the most recent year's catch and landings data. For example, in 2017 there were deliveries of salmon caught between Cape Falcon and Humbug Mountain to landing ports in the Oregon KMZ region; and deliveries of salmon caught south of Horse Mountain to landing ports in the California KMZ region. There were also transfers of harvest between other catch areas and landing ports, but these were relatively smaller by comparison.

The expected harvest levels used to model commercial fishery impacts are taken from Table 6. Estimated harvests include relatively small amounts occurring in state waters only (SWO) fisheries off central and southern Oregon. These total harvest estimates combined with the prior year's average Chinook weights per fish and exvessel prices per pound were assumed to be the best indicators of expected revenues in the coming season. Coastwide average Chinook weight per fish in 2017 was slightly lower than the prior year, and the second lowest in the past 10 years; while coastwide average Chinook exvessel prices in 2017 were the highest in inflation-adjusted terms since at least 1976. If this year's actual average weight per fish or exvessel prices diverge significantly from what was observed in 2017, then salmon exvessel revenues and resulting commercial fisheries income impacts projected in this document may prove to be correspondingly biased. Unless otherwise noted, the economic effects of the commercial and recreational fisheries Alternatives summarized below are compared in terms of estimated community income impacts.

8.2.1 Alternative I

Under Alternative I, overall coastwide community personal income impacts from commercial salmon fisheries are projected to be above last year's (2017) level by 39 percent, but below the recent (2013-2017) inflation-adjusted average by 37 percent. Coastwide income impacts from recreational fishing are projected to be 28 percent above last year's level, but to fall below the recent (2013-2017) inflation-adjusted average by 24 percent.

South of Cape Falcon, overall commercial fishery income impacts are projected to exceed last year's level by 62 percent, but fall below the recent (2013-2017) inflation-adjusted average by 41 percent.

Commercial fishery income impacts north of Cape Falcon are projected to be 8 percent below last year and 13 percent below the recent (2013-2017) inflation-adjusted average.

Areas south of Cape Falcon, except the two areas south of Point Arena, would see commercial fishery income impacts considerably above last year's levels. Areas between Cape Falcon and Humbug Mountain, between Humbug Mountain and the Oregon/California border, between the Oregon/California border and Horse Mountain, and between Horse Mountain and Point Arena would see projected increases of more than 100 percent compared with last year's levels. Areas between Point Arena and Pigeon Point and south of Pigeon Point would see projected decreases of 6 percent and 49 percent, respectively, compared with last year. All areas south of Cape Falcon, except between the Oregon/California border and Horse Mountain, would see projected decreases in commercial fishery income impacts compared to the recent (2013-2017) inflation-adjusted average.

Projected income impacts from recreational fisheries north of Cape Falcon are 8 percent above last year, but 38 percent below the recent (2013-2017) inflation-adjusted average.

Overall recreational fishery income impacts south of Cape Falcon are projected to be 38 percent above last year's, but 17 percent below the recent (2013-2017) inflation-adjusted average. Recreational income impacts are projected to be above last year's levels in all areas south of Cape Falcon, except between Point Arena and Pigeon Point where they are projected to fall 16 percent below last year's level. Recreational fishery income impacts are projected to be below the recent (2013-2017) inflation-adjusted average in all areas south of Cape Falcon, except between Humbug Mountain and the Oregon/California border and South of Pigeon Point.

Tribal ocean fisheries north of Cape Falcon would be allocated 50,000 Chinook and 40,000 coho for ocean area harvest (same as proposed in 2017), compared to the 2017 actual allocation of 40,000 Chinook and 12,500 coho.

Income impacts for combined non-Indian commercial and recreational fisheries under Alternative I are projected to be above last year's levels overall and in all areas except between Point Arena and Pigeon Point. Compared with the 2013-2017 inflation-adjusted average, income impacts for combined non-Indian commercial and recreational fisheries under Alternative I are projected to be lower overall, and lower in five of the seven areas: North of Cape Falcon, Cape Falcon to Humbug Mountain, Oregon/California border to Horse Mountain, Horse Mountain to Point Arena, and Point Arena to Pigeon Point.

8.2.2 Alternative II

Under Alternative II, coastwide community personal income impacts from commercial salmon fisheries are projected to exceed last year's (2017) level by 16 percent, but to be below the recent (2013-2017) inflation-adjusted average by 47 percent. Coastwide income impacts from recreational fishing are projected to be 8 percent above last year's level, but to be below the recent (2013-2017) inflation-adjusted average by 36 percent.

South of Cape Falcon, overall commercial fishery income impacts are projected to exceed last year's level by 35 percent, but to be below the recent (2013-2017) inflation-adjusted average by 51 percent.

Commercial fishery income impacts north of Cape Falcon are projected to be 22 percent below last year's level, and 26 percent below the recent (2013-2017) inflation-adjusted average.

Areas south of Cape Falcon, except the two areas south of Point Arena, would see commercial fishery income impacts considerably above last year's levels. Areas between Cape Falcon and Humbug Mountain, between Humbug Mountain and the Oregon/California border, between the Oregon/California border and Horse Mountain, and between Horse Mountain and Point Arena would see projected increases of more than 100 percent compared with last year's levels. Areas between Point Arena and Pigeon Point and South of Pigeon Point would see projected decreases of 31 percent and 52 percent, respectively, compared with last year. All areas south of Cape Falcon, except between the Oregon/California border and Horse Mountain, would see projected decreases in commercial fishery income impacts compared with the recent (2013-2017) inflation-adjusted average.

Projected income impacts from recreational fisheries north of Cape Falcon are 20 percent below last year, and 54 percent below the recent (2013-2017) inflation-adjusted average.

Overall recreational fishery income impacts south of Cape Falcon are projected to be 22 percent above last year's level, but 27 percent below the recent (2013-2017) inflation-adjusted average. Recreational fishery income impacts are projected to be above last year's levels in all areas south of Cape Falcon, except are projected to fall 28 percent below last year's level between Point Arena and Pigeon Point. Recreational fishery income impacts are projected to be below the recent (2013-2017) inflation-adjusted average in all areas south of Cape Falcon, except South of Pigeon Point.

Tribal ocean fisheries north of Cape Falcon would be allocated 40,000 Chinook for ocean area harvests and 22,000 coho (same as proposed in 2017), compared to the 2017 actual allocation of 40,000 Chinook and 12,500 coho.

Income impacts for combined non-Indian commercial and recreational fisheries under Alternative II are projected to be above last year's levels overall, and above last year's levels in all areas except North of Cape Falcon and between Point Arena and Pigeon Point. Compared with the recent (2013-2017) inflation-adjusted average, income impacts for combined non-Indian commercial and recreational fisheries under Alternative II are projected to be lower overall, and lower in six of the seven areas: North of Cape Falcon,

Cape Falcon to Humbug Mountain, Humbug Mountain to the Oregon/California border, Oregon/California border to Horse Mountain, Horse Mountain to Point Arena, and Point Arena to Pigeon Point.

8.2.3 Alternative III

Under Alternative III, overall coastwide community personal income impacts from commercial salmon fisheries are projected to fall below last year's (2017) level by 3 percent, and to be below the recent (2013-2017) inflation-adjusted average by 56 percent. Coastwide income impacts from recreational fisheries are projected to be 25 percent below last year's level, and to fall below the recent (2013-2017) inflation-adjusted average by 56 percent.

South of Cape Falcon, overall commercial fishery income impacts are projected to exceed last year's level by 14 percent, but fall below the recent (2013-2017) inflation-adjusted average by 59 percent.

Commercial fishery income impacts north of Cape Falcon are projected to be 37 percent below last year's level, and 40 percent below the recent (2013-2017) inflation-adjusted average.

Areas south of Cape Falcon, except the two areas south of Point Arena, would see commercial fisheries income impacts considerably above last year's levels. Areas between Cape Falcon and Humbug Mountain, between Humbug Mountain and the Oregon/California border, between the Oregon/California border and Horse Mountain, and between Horse Mountain and Point Arena, would see projected increases of at least 43 percent compared with last year's levels. Areas between Point Arena and Pigeon Point and South of Pigeon Point would see projected decreases of 63 percent and 68 percent, respectively, compared with last year. All areas south of Cape Falcon, except between the Oregon/California border and Horse Mountain, would see projected decreases in commercial fishery income impacts compared with their recent (2013-2017) inflation-adjusted averages.

Projected income impacts from recreational fisheries north of Cape Falcon are 48 percent below last year, and 70 percent below the recent (2013-2017) inflation-adjusted average.

Overall recreational fishery income impacts south of Cape Falcon are projected to be 13 percent below last year's level, and 48 percent below the recent (2013-2017) inflation-adjusted average. Recreational fishery income impacts are projected to be above last year's levels in all areas south of Cape Falcon, except between Point Arena and Pigeon Point where they are projected to fall 48 percent below last year's level. Recreational fishery income impacts are projected to be below the recent (2013-2017) inflation-adjusted average in all areas south of Cape Falcon except South of Pigeon Point.

Tribal ocean fisheries north of Cape Falcon would be allocated 30,000 Chinook for ocean area harvests and 12,500 coho (same as proposed in 2017), compared to the 2017 actual allocation of 40,000 Chinook and 12,500 coho.

Income impacts from combined non-Indian commercial and recreational fisheries under Alternative III are projected to be below last year's levels overall, but above last year's levels in all areas except North of Cape Falcon and between Point Arena and Pigeon Point. Compared with the recent (2013-2017) inflation-adjusted average, income impacts for combined non-Indian commercial and recreational fisheries under Alternative III are projected to be lower overall, and lower in five of the seven areas: North of Cape Falcon, Cape Falcon to Humbug Mountain, Humbug Mountain to the Oregon/California border, Horse Mountain to Point Arena, and Point Arena to Pigeon Point.

8.2.4 Summary of Impacts on the Socioeconomic Environment

The commercial fishery alternatives are projected to generate coastwide income impacts ranging from 39 percent above (Alternative I) to 3 percent below (Alternative III) last year's levels. These corresponding levels range from 37 percent below to 56 percent below the recent (2013-2017) inflation-adjusted averages. Commercial fishery income impacts are projected to be above last year in four of the seven management areas under Alternatives I, II and III; all four areas between Cape Falcon and Point Arena (Cape Falcon to Humbug Mountain, Humbug Mountain to Oregon/California border, Oregon/California border to Horse Mountain, and Horse Mountain to Point Arena) would see increases in commercial fisheries income impacts compared with last year under Alternatives I, II and III.

Commercial fisheries income impacts north of Cape Falcon are projected to be below last year and the 2013-2017 inflation-adjusted average under Alternatives I, II and III. Among the alternatives, Alternative III shows the lowest projected commercial salmon landings and relative income impacts overall and for five of the seven areas; i.e., except between the Oregon/California border and Horse Mountain, and between Horse Mountain and Point Arena, where commercial fishery income impacts are projected to be the highest among the alternatives under Alternative III. The area north of Cape Falcon and the two areas South of Point Arena (i.e., Point Arena to Pigeon Point, and South of Pigeon Point) are projected to see decreases in commercial fisheries income impacts compared with last year and the 2013-2017 inflation-adjusted average under Alternatives I, II and III.

Total coastwide income impacts from recreational fisheries are projected to be higher than last year under Alternatives I and II, with increases ranging from 28 percent under Alternative I to 8 percent under Alternative II; but falling by 25 percent under Alternative III. Compared with the recent (2013-2017) inflation-adjusted coastwide average, decreases in coastwide recreational fishery income impacts are projected under Alternatives I, II and III. Compared with last year, the area north of Cape Falcon would see a projected increase in recreational fishery income impacts under Alternative I but decreases under Alternatives II and III. Compared with last year the area south of Cape Falcon in aggregate would see projected increases in recreational fisheries income impacts under Alternatives I and II, but a decrease under Alternative III. Compared with the recent (2013-2017) inflation-adjusted average, decreases in recreational fishery income impacts are projected for the area south of Cape Falcon in aggregate under Alternatives I, II and III.

Five areas [the four areas between Cape Falcon and Point Arena (Cape Falcon to Humbug Mountain, Humbug Mountain to Oregon/California border, Oregon/California border to Horse Mountain, and Horse Mountain to Point Arena) and the area South of Pigeon Point] are projected to see increases in recreational fishery income impacts compared with last year under Alternatives I, II and III. The area between Point Arena and Pigeon Point is the only area projected to see decreases in recreational fishery income impacts compared with last year under Alternatives I, II and III; the smallest decrease under Alternative I and the greatest decrease under Alternative III.

Ocean tribal fisheries occurring only north of Cape Falcon would be allocated a maximum of 50,000 Chinook under Alternative I and a minimum of 30,000 Chinook under Alternative III (same range as proposed in 2017). Ocean tribal fisheries would be allocated a maximum of 40,000 coho under Alternative I and a minimum of 12,500 coho under Alternative III (same range as proposed in 2017).

8.3 Non-target Fish Species

Prior NEPA analyses have considered the effects of the ocean salmon fisheries on non-target fish species. Since then, ocean salmon fisheries have not changed substantially in terms of season length, areas, depth, bag limits, etc. Nor is there any new information to suggest that the incidental nature of encounters of non-target species in ocean salmon fisheries has changed. Therefore, conclusions from previous environmental

analyses indicating that effects on non-target fish species are low and not significant are still applicable, as discussed below. The differences between the Alternatives for the 2018 salmon fishery are not discernible with respect to their effect on non-target fish species.

Impacts to groundfish stocks from salmon troll fisheries continue to be managed as part of the open access groundfish fishery sector, and are at similar levels compared to recent years. Previous environmental analysis concluded that the amount of groundfish taken incidentally in the salmon fishery is very low and is not substantially altered by changes in the salmon fishery. (NMFS 2003; Appendix B). The 2018 ocean salmon regulation Alternatives are not expected to differ substantially from fisheries analyzed previously with respect to groundfish impacts; therefore, effects from the Alternatives to groundfish stocks are not significant.

Impacts to Pacific halibut from salmon troll fisheries continue to be managed under limits established through the International Pacific Halibut Commission (IPHC) process and under the Area 2A (Council area) catch sharing plan. Previous environmental analysis stated that data on the commercial segment of salmon fisheries show the co-occurrence rates for salmon and halibut, coastal pelagic species, highly migratory species, and non-Council managed fish species are low (NMFS 2003; Appendix B). The 2018 ocean salmon regulation Alternatives include Pacific halibut landing restrictions within the range enacted in the past, and are not expected to differ substantially from earlier analyses with respect to Pacific halibut impacts; therefore, effects from the Alternatives to Pacific halibut are not significant. Likewise, there are no changes to the salmon fishery for 2018 that would change impacts to other non-salmon fish species compared to previous analyses, therefore, effects from the Alternatives to these species are not expected to be significant.

8.4 Marine Mammals

The commercial salmon troll fisheries off the coasts of Washington, Oregon, and California are classified as Category III fisheries, indicating a remote or no likelihood of causing incidental mortality or serious injury to marine mammals (83 FR 5349). Recreational salmon fisheries use similar gear and techniques as the commercial fisheries and are assumed to have similar encounter rates and impacts. The non-ESA listed marine mammal species that are known to interact with ocean salmon fisheries are California sea lion and harbor seals. Populations of both these species are at stable and historically high levels. There is no new information to suggest that the nature of interactions between California sea lions or harbor seals in ocean salmon fisheries has changed since the Category III determination. Therefore, the impacts from the 2018 salmon regulation Alternatives 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.

8.5 ESA Listed Species

Available information indicates that Pacific Coast salmon fisheries are not likely to jeopardize the existence of the Guadalupe fur seal (NMFS 2003; Appendix B). No sea turtles have been reported taken by the ocean salmon fisheries off Washington, Oregon, or California, and NMFS has determined that commercial fishing by Pacific Coast salmon fisheries would pose a negligible threat to Pacific turtle species (NMFS 2003; Appendix B). There is no discernible difference between the effects of the alternatives on these resources.

The NMFS BO on Southern Resident killer whale distinct population segment (NMFS 2009; Appendix B) concluded that ocean salmon fisheries were not likely to jeopardize the continued existence of the Southern Resident killer whales or adversely modify their critical habitat. NMFS has completed a five year review of the Southern Resident killer whale ESA listing in September 2016. There is new information that indicates Chinook salmon abundance may correlate with killer whale population growth rate, and while this information is under review, it is possible that future consultation standards for Puget Sound and possibly Council area fisheries will change as a result of this new information. However, the 2018 ocean salmon

regulations are covered by the NMFS 2009 BO, and on that basis it is expected that the 2018 regulations would not have significant impacts to Southern Resident killer whales. There is no discernible difference between the effects of the alternatives on killer whales.

Other ESA listed salmonid species present in Council area waters include sockeye and chum salmon, and steelhead trout. These species are rarely encountered in ocean salmon fisheries, and Alternatives for 2018 Council area ocean salmon fisheries are in compliance with applicable BOs for listed ESUs of these species as listed in Chapter 5 of this document. Because anticipated impacts are negligible, there are no significant impacts expected on listed sockeye or chum salmon or steelhead trout from the Alternatives analyzed in this EA, and there is no discernible difference between the effects of the Alternatives on these resources.

8.6 *Seabirds*

The types of vessels used in ocean salmon fisheries and the conduct of the vessels are not conducive to collisions or the introduction of rats or other non-indigenous species to seabird breeding colonies. Other types of accidental bird encounters are a rare event for commercial and recreational ocean salmon fisheries (NMFS 2003; Appendix B). Therefore, there are no significant impacts expected on seabirds from the Alternatives analyzed in this EA, and there is no discernible difference between the effects of the Alternatives on seabirds.

8.7 *Biodiversity and Ecosystem Function*

The removal of adult salmon by the ocean fisheries is not considered to significantly affect the lower trophic levels or the overall marine ecosystem because salmon are not the only or primary predator in the marine environment (NMFS 2003; Appendix B). Therefore, no significant impacts are expected on biodiversity or ecosystem function from the Alternatives analyzed in this EA, and there is no discernible difference between the effects of the Alternatives on these resources.

8.8 *Ocean and Coastal Habitats*

Council Area salmon fisheries do not employ bottom contact gear, and there is no evidence of direct gear effects on fish habitat from Council-managed salmon fisheries on essential fish habitat (EFH) for salmon or other managed species (PFMC 2006; Appendix B). Critical habitat for ESA listed salmon does not include Council area ocean water. Because Council area salmon fisheries are conducted at sea and without bottom contact gear, there is no interaction with unique geographic characteristics or other cultural, scientific, or historical resources such as those that might be listed on the National Register of Historical Places.

8.9 *Public Health and Safety*

Fisheries management can affect safety if, for example, season openings make it more likely that fishermen will have to go out in bad weather because fishing opportunities are limited. The Salmon FMP, however, has provisions to adjust management measures if unsafe weather affected fishery access. The Alternatives for 2018 ocean salmon regulations have season structures similar to those employed in previous salmon seasons and are not expected to result in any significant increase in the risk to human health or safety at sea (PFMC 2006; Appendix B). There are also no discernible differences between the effects of the Alternatives on the risk to human health or safety at sea.

8.10 *Cumulative Impacts*

A cumulative effects analysis is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The purpose of a cumulative effects analysis is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every

conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required as part of an EA under NEPA as long as the significance of cumulative impacts has been considered (U.S. EPA 1999). The following addresses the significance of the expected cumulative impacts as they relate to the Pacific Coast salmon fishery.

8.10.1 Consideration of the Effected Resource

The affected resources that relate to the Pacific Coast salmon fishery are described in the Affected Environment sections of Preseason I and in Section 8.0 of this report. The significance of the cumulative effects will be discussed in relation to these affected resources listed below.

- Fishery and Fish Resources,
- Protected Resources,
- Biodiversity/Ecosystem Function and Habitats,
- Socioeconomics.

8.10.2 Geographic Boundaries

The analysis focuses on actions related to Council-managed ocean salmon commercial and recreational fisheries. Council-managed ocean fisheries occur in the exclusive economic zone (EEZ), from three to 200 miles offshore, off the coasts of the states of Washington, Oregon, and California as well as the ports in these states that receive landings from the ocean salmon fisheries. Since salmon are anadromous and spend part of their lifecycle in fresh water, the geographic scope also includes internal waters (e.g., Puget Sound) and rivers that salmon use to migrate towards their spawning grounds.

8.10.3 Temporal Boundaries

The temporal scope of past and present actions for the affected resources is primarily focused on actions that have occurred after framework FMP implementation (1984). The temporal scope of future actions for all affected resources extends about five years into the future. This period was chosen because the dynamic nature of resource management and lack of information on future projects make it very difficult to predict impacts beyond this timeframe with any certainty.

8.10.4 Past, Present, and Reasonably Foreseeable Future Actions

Fishery Actions

The Council sets management measures for ocean salmon fisheries annually based on stock forecasts and in accordance with conservation objectives set in the FMP and guidance provided by NMFS for managing impacts to ESA listed stocks. The Council manages ocean salmon fisheries through an intensive preseason analysis process to shape salmon fisheries impacts on salmon stocks within the parameters of the FMP conservation measures and ESA requirements.

Fisheries outside of the Council's jurisdiction also impact the Council-area salmon fishery. The Council considers fisheries managed by the states and treaty Indian tribes in the North of Falcon management process and Columbia River fisheries managed under *U.S. v. Oregon* Management Plan, as well as obligations for fisheries off Alaska and Canada under the Pacific Salmon Treaty (PFMC and NMFS 2014). Additionally, the Council and NMFS manage ocean salmon fisheries inseason to keep fisheries impacts within the constraints set preseason. The Council also conducts annual methodology reviews to improve models and other tools for assessing salmon stocks.

Non-Fishing Related Actions

Because salmon spend part of their lifecycle in fresh water, they are more vulnerable to a broad range of human activities (since humans spend most of their time on land) that affect the quantity and quality of these freshwater environments. These effects are generally well known and diverse. They include physical

barriers to migration (dams), changes in water flow and temperature (often a secondary effect of dams or water diversion projects), and degradation of spawning environments (such as increased silt in the water from adjacent land use). Non-fishing activities in the marine environment can introduce chemical pollutants and sewage; and result in changes in water temperature, salinity, dissolved oxygen, and suspended sediment which poses a risk to the affected resources. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas. When these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability tends to reduce the tolerance of affected species to the impacts of fishing effort. Mitigation through regulations that would reduce fishing effort could negatively impact human communities. The overall impact to the affected species and their habitats on a population level is unknown, but likely neutral to low negative, since a large portion of these species have a limited or minor exposure to the localized non-fishing perturbations.

For many of the proposed non-fishing activities to be permitted by other Federal agencies, those agencies would examine the potential impacts on the affected resources. The Magnuson-Stevens Act (50 CFR 600.930) imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. The eight fishery management councils engage in the review process by making comments and recommendations on any Federal or state action that may affect habitat, including EFH, for their managed species and by commenting on actions likely to substantially affect habitat, including EFH. In addition, under the Fish and Wildlife Coordination Act (Section 662), “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the U.S., or by any public or private agency under Federal permit or license, such department or agency first shall consult with the U.S. Fish and Wildlife Service (USFWS), Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular state wherein the” activity is taking place. This act provides another avenue for review of actions by other Federal and state agencies that may impact resources that NMFS manages in the reasonably foreseeable future. In addition, NMFS and the USFWS share responsibility for implementing the ESA. ESA requires NMFS to designate “critical habitat” for any species it lists under the ESA (i.e., areas that contain physical or biological features essential to conservation, which may require special management considerations or protection) and to develop and implement recovery plans for threatened and endangered species. The ESA provides another avenue for NMFS to review actions by other entities that may impact endangered and protected resources whose management units are under NMFS’ jurisdiction.

The effects of climate on the biota of the California Current ecosystem have been recognized for some time. The El Niño-Southern Oscillation (ENSO) is widely recognized to be the dominant mode of inter-annual variability in the equatorial Pacific, with impacts throughout the rest of the Pacific basin and the globe. During the negative (El Niño) phase of the ENSO cycle, jet stream winds are typically diverted northward, often resulting in increased exposure of the Pacific Coast of the U.S. to subtropical weather systems. The impacts of these events to the coastal ocean generally include reduced upwelling winds, deepening of the thermocline, intrusion of offshore (subtropical) waters, dramatic declines in primary and secondary production, poor recruitment, reduced growth and survival of many resident species (such as salmon and groundfish), and northward extensions in the range of many tropical species. Concurrently, top predators such as seabirds and pinnipeds often exhibit reproductive failure. In addition to inter-annual variability in ocean conditions, the North Pacific seems to exhibit substantial inter-decadal variability, which is referred to as the Pacific (inter) Decadal Oscillation (PDO).

Anomalously warm sea surface temperatures in the northeast Pacific Ocean developed in 2013 and continued to persist through much of 2015; this phenomenon was termed “the Blob.” During the persistence of the Blob, distribution of marine species was affected (e.g., tropical and subtropical species were

documented far north of their usual ranges), marine mammals and seabirds starved, and a coastwide algal bloom that developed in the summer of 2015 resulted in demoic acid poisoning of animals at various trophic levels, from crustaceans to marine mammals. In 2015-2016, a very strong El Niño event disrupted the Blob, which was declared “dead” by climatologists in December 2015. The extent of the impact of The Blob on salmon and salmon fisheries has not yet been fully determined. It is also uncertain if or when environmental conditions would cause a repeat of this event. However, NMFS’ Northwest and Southwest Fisheries Science Centers presented information to the Council indicating that the broods that will contribute to 2018 harvest and escapement encountered poor ocean conditions in the California Current Ecosystem.

Within the California Current itself, Mendelssohn et al, (2003) described long-term warming trends in the upper 50 to 75 meters of the water column. Recent paleoecological studies from marine sediments have indicated that 20th century warming trends in the California Current have exceeded natural variability in ocean temperatures over the last 1,400 years. Statistical analyses of past climate data have improved our understanding of how climate has affected North Pacific ecosystems and associated marine species productivities.

In addition, changes in river flows and flow variability may affect population growth of anadromous fishes. Ward et al. (2015) found that increases in variability in freshwater flows may have a more negative effect than any other climate signal included in their model. Some climate change models predict that in the Pacific Northwest, there will be warmer winters and more variable river flows, which may affect the ability of anadromous fishes to recover in the future (Ward et al. 2015). However, our ability to predict future impacts on a large scale ecosystem stemming from climate forcing events remains uncertain.

8.10.5 Magnitude and Significance of Proposed Action

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section presents the effects of past, present, and reasonably foreseeable future actions on each of the managed resources. This is followed by a discussion on the synergistic effects of the proposed action, as well as past, present, and reasonably foreseeable future actions.

8.10.5.1 Fishery and Fish Resources

Past, present, and reasonably foreseeable future actions that affect the salmon fishery and fish resources are considered annually when the Council sets management measures for ocean salmon fisheries based on stock forecasts and in accordance with conservation objectives set in the FMP and guidance provided by NMFS for managing impacts to ESA-listed stocks. The Council also considers fisheries managed by the states and treaty Indian tribes in the North of Falcon management process and Columbia River fisheries managed under *U.S. v. Oregon* Management Plan, as well as obligations under the Pacific Salmon Treaty (PFMC and NMFS 2014). Additionally, the Council and NMFS manage ocean salmon fisheries inseason to keep fisheries impacts within the constraints set preseason. The Council also conducts annual methodology reviews to improve models and other tools for assessing salmon stocks. Therefore, the magnitude and significance of cumulative effects, including the proposed action, on the salmon fishery and fish resources are expected to be low positive and not significant.

8.10.5.2 Protected Resources

Past, present, and foreseeable future actions that affect ESA-listed salmon are considered annually when the Council sets management measures for ocean salmon fisheries; NMFS provides guidance for managing impacts to ESA-listed stocks based on biological opinions and stock productivity information provided by the states and analyzed by the STT. Fishery management actions have been taken to manage impacts on ESA-listed salmon, and the states have developed information to better inform fishery management

decisions. Therefore, the magnitude and significance of cumulative effects, including the proposed action on ESA-listed salmon are expected to be low positive and not significant.

8.10.5.3 Biodiversity/Ecosystem Function and Habitats

Past, present, and foreseeable future actions that affect biodiversity/ecosystem function and habitats are considered to the extent practicable annually. When considering the proposed action's removal of adult salmon by the ocean fisheries in addition to past, present, and reasonably foreseeable future actions, such removal of these salmon is not considered to significantly affect the lower trophic levels or the overall marine ecosystem because salmon are not the only primary predator. In addition, Council-area salmon fisheries are conducted at sea with hook-and-line gear and thus, there is no to negligible interactions expected with EFH for salmon or other managed species.

Salmon escapement to fresh water provides for spawning and for carrying marine derived nutrients to freshwater habitats. The importance of salmon carcasses in the transport of marine derived nutrients to freshwater habitats is described in Appendix A of the FMP and the related EA (see Final Environmental Assessment and Regulatory Impact Review; Pacific Coast Salmon Plan Amendment 18: Incorporating Revisions to Pacific Salmon Essential Fish Habitat, available on the Council's website: www.pcouncil.org) and also in the Environmental Impact Statement (EIS) for Puget Sound Chinook Harvest Resource Management Plan (Puget Sound Chinook Harvest Resource Management Plan FEIS. NMFS Northwest Region with Assistance from the Puget Sound Treaty Tribes and Washington Department of Fish and Wildlife. December 2004. 2 volumes, available on the NMFS West Coast Region website: <http://www.westcoast.fisheries.noaa.gov/>); these documents are incorporated herein by reference. Council fisheries are designed to provide escapement of salmon to provide for natural spawning and transport of marine derived nutrients.

8.10.5.4 Socioeconomic Environment

Each year the Council evaluates the socioeconomic impact of past salmon fisheries in the stock assessment and fishery evaluation document (e.g., PFMC 2018a) and also evaluates foreseeable future impacts in the annual preseason reports; these documents are also used as the basis for the NEPA analysis for the annual management measures. The magnitude and significance of cumulative effects, including the proposed action on the socioeconomic environment, is expected to be low positive, and not significant.

9.0 CONCLUSION

This analysis has identified no significant environmental impacts that would result from the 2018 ocean salmon regulation Alternatives, from final regulations selected from within the range presented in these Alternatives.

10.0 LIST OF AGENCIES AND PERSONS CONSULTED

The following public meetings were held as part of the salmon management process (Council-sponsored meetings in bold):

October 17, 2017:	Salmon Technical Team/Scientific and Statistical Committee Salmon Subcommittee joint meeting , Portland, Oregon.
November 15-20, 2017:	Pacific Fishery Management Council meeting , Costa Mesa, California.
January 16-19:	Salmon Technical Team (Review preparation) , Portland, Oregon.
February 7-8:	California Fish and Game Commission meeting, Sacramento, California.
February 20-23:	Salmon Technical Team (Preseason Report I preparation) , Portland, Oregon.
February 27:	Oregon Salmon Industry Group meeting, Newport, Oregon.
February 27:	Washington Department of Fish and Wildlife public meeting, Olympia, Washington.
March 1:	California Department of Fish and Wildlife public meeting, Santa Rosa, California.
March 9-14:	Pacific Fishery Management Council meeting , Rohnert Park, California.
March 16:	Oregon Fish and Wildlife Commission meeting, Salem, Oregon.
March 20:	North of Falcon, Ocean fisheries, Puget Sound, and <i>U.S. v. Oregon</i> Forums, Olympia, Washington.
March 26-27:	Public hearings on management options in Westport, Washington; Coos Bay, Oregon; and Salinas, California.
April 2:	North of Falcon, Ocean fisheries and Columbia River fisheries, Ridgefield, Washington.
April 3:	North of Falcon, Puget Sound forum, Lynnwood, Washington.
April 6-11:	Pacific Fishery Management Council meeting , Portland, Oregon.
April 12:	California Fish and Game Commission meeting, Teleconference.
April 20:	Oregon Fish and Wildlife Commission meeting, Astoria, Oregon.
May 4:	Washington Fish and Wildlife Commission meeting, Teleconference.

The following organizations were consulted and/or participated in preparation of supporting documents:

California Department of Fish and Wildlife
Oregon Department of Fish and Wildlife
Washington Department of Fish and Wildlife

National Marine Fisheries Service, West Coast Region, Sustainable Fisheries Division
National Marine Fisheries Service, Northwest Fisheries Science Center
National Marine Fisheries Service, Southwest Fisheries Science Center
U.S. Fish and Wildlife Service, Columbia River Fisheries Program Office
United States Coast Guard

Northwest Indian Fisheries Commission
Columbia River Intertribal Fish Commission
West Coast Indian Tribes

11.0 REFERENCES

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- PFMC and NMFS. 2014. Harvest Specifications and Management Measures for 2015-2016 and Biennial Periods Thereafter; Includes the Reorganization of Groundfish Stock Complexes, Designation of Ecosystem Component Species and Amendment 24 to the Pacific Coast Groundfish Fishery Management Plan to Establish a Process for Determining Default Harvest Specifications. Draft Environmental Impact Statement dated October 2014.
- PFMC. 2018a. Review of 2017 ocean salmon fisheries. Pacific Fishery Management Council, Portland, Oregon.
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A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
North of Cape Falcon	North of Cape Falcon	North of Cape Falcon
Supplemental Management Information	Supplemental Management Information	Supplemental Management Information
Model #: Coho-1811, Chinook X	Model #: Coho-1812, Chinook X	Model #: Coho-1813, Chinook X
<ol style="list-style-type: none"> Overall non-Indian TAC: 65,000 Chinook and 47,600 coho marked with a healed adipose fin clip (marked). Non-Indian commercial troll TAC: 32,500 Chinook and 5,600 marked coho. Trade: May be considered at the April Council meeting. Overall Chinook and/or coho TACs may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries. 	<ol style="list-style-type: none"> Overall non-Indian TAC: 55,000 Chinook and 35,000 coho marked with a healed adipose fin clip (marked). Non-Indian commercial troll TAC: 27,500 Chinook and 5,600 marked coho. Trade: Overall Chinook and/or coho TACs may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries. 	<ol style="list-style-type: none"> Overall non-Indian TAC: 45,000 Chinook and 20,000 coho marked with a healed adipose fin clip (marked). Non-Indian commercial troll TAC: 22,500 Chinook and 3,200 coho. Trade: Overall Chinook and/or coho TACs may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries.
<p>U.S./Canada Border to Cape Falcon</p> <ul style="list-style-type: none"> May 1 through the earlier of June 30 or 24,400 Chinook, no more than 7,600 of which may be caught in the area between the U.S./Canada border and the Queets River, and no more than 6,800 of which may be caught in the area between Leadbetter Pt. and Cape Falcon (C.8). Open seven days per week (C.1). <p>All salmon, except coho (C.4, C.7). Chinook minimum size limit of 28 inches total length (B). See compliance requirements (C.1) and gear restrictions and definitions (C.2, C.3).</p> <p>When it is projected that approximately 75% of the overall Chinook guideline has been landed, or approximately 75% of the Chinook subarea guideline has been landed in the area between the U.S./Canada border and the Queets River, or approximately 75% of the Chinook subarea guideline has been landed in the area between Leadbetter Pt. and Cape Falcon, inseason action will be considered to ensure the guideline is not exceeded.</p>	<p>U.S./Canada Border to Cape Falcon</p> <ul style="list-style-type: none"> May 1 through the earlier of June 30 or 16,500 Chinook, no more than 5,100 of which may be caught in the area between the U.S./Canada border and the Queets River and no more than 4,600 of which may be caught in the area between Leadbetter Pt. and Cape Falcon (C.8). Open seven days per week (C.1). May 10-June 30: in the area between the U.S./Canada border and the Queets River, landing and possession limit of 50 Chinook per vessel per landing week (Thursday through Wednesday) (C.1, C.6). <p>Same as Alternative 1</p> <p>Same as Alternative 1</p>	<p>U.S./Canada Border to Cape Falcon</p> <ul style="list-style-type: none"> May 1 through the earlier of June 15 or 11,300 Chinook, no more than 4,000 of which may be caught in the area between the U.S./Canada border and the Queets River, and no more than 3,300 of which may be caught in the area between Leadbetter Pt. and Cape Falcon (C.8). Landing and possession limit of 40 Chinook per vessel per open period will be in place (C.6). May 1-8; open seven days per week (C.1). May 11-June 15; open five days per week (Friday through Tuesday) (C.1). <p>Same as Alternative 1</p> <p>When it is projected that approximately 50% of the overall Chinook guideline has been landed, or approximately 50% of the Chinook subarea guideline has been landed in the area between the U.S./Canada border and the Queets River, or approximately 50% of the Chinook subarea guideline has been landed in the area between Leadbetter Pt. and Cape Falcon, inseason action will be considered to ensure the guideline is not exceeded.</p>

TABLE 1. 2018 Commercial troll management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 2 of 10)		
A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
<p>U.S./Canada Border to Cape Falcon</p> <ul style="list-style-type: none"> July 1-September 19 or 8,100 Chinook or 5,600 coho, whichever comes first; no more than 3,400 Chinook may be caught in the area between the U.S./Canada border and the Queets River (C.8). <p>In the area between the U.S./Canada border and the Queets River, a landing and possession limit of 60 Chinook per vessel per landing week (Thursday through Wednesday) will be in place (C.1, C.6).</p> <p>Landing and possession limit of 10 coho per vessel per landing week (C.1).</p> <p>Open seven days per week. All salmon. Chinook minimum size limit of 28 inches total length. Coho minimum size limit of 16 inches total length (B, C.1). All coho must be marked with a healed adipose fin clip (C.8.d). No chum retention north of Cape Alava, Washington in August and September (C.4, C.7). See compliance requirements (C.1) and gear restrictions and definitions (C.2, C.3).</p> <p>When it is projected that approximately 75% of the overall Chinook guideline has been landed, or approximately 75% of the Chinook subarea guideline has been landed in the area between the U.S./Canada border to the Queets River, inseason action will be considered to ensure the guideline is not exceeded.</p>	<p>U.S./Canada Border to Cape Falcon</p> <ul style="list-style-type: none"> July 1-September 19 or 11,000 Chinook or 5,600 coho, whichever comes first; no more than 4,600 Chinook may be caught in the area between the U.S./Canada border and the Queets River (C.8). <p>Landing and possession limit of 50 Chinook and 10 coho per vessel per landing week (Thurs.-Wed.) (C.1).</p> <p>Same as Alternative 1</p> <p>Same as Alternate 1</p>	<p>U.S./Canada Border to Cape Falcon</p> <ul style="list-style-type: none"> July 1-September 4 or 11,200 Chinook or 3,200 coho, whichever comes first; no more than 4,700 Chinook may be caught in the area between the U.S./Canada border and the Queets River, and no more than 1,300 Chinook may be caught in the area between Leadbetter Point and Cape Falcon (C.8). Open July 1-3 then; July 6-September 4; open five days per week (Friday through Tuesday). <p>Landing and possession limit of 40 Chinook and 10 coho per vessel per open period (C.1).</p> <p>Same as Alternative 1</p> <p>When it is projected that approximately 50% of the overall Chinook guideline has been landed, or approximately 50% of the Chinook subarea guideline has been landed in the area between the U.S./Canada border to the Queets River, inseason action will be considered to ensure the guideline is not exceeded.</p>
<p>For all commercial troll fisheries north of Cape Falcon: Mandatory closed areas include: Salmon troll Yelloweye Rockfish Conservation Area, Cape Flattery and Columbia Control Zones, and beginning August 13, Grays Harbor Control Zone (C.5). Vessels must land and deliver their salmon within 24 hours of any closure of this fishery. Vessels fishing, or in possession of salmon while fishing, north of Leadbetter Point must land and deliver all species of fish within the area and north of Leadbetter Point. Vessels fishing or in possession of salmon while fishing south of Leadbetter Point must land and deliver all species of fish within the area and south of Leadbetter Point, except that Oregon permitted vessels may also land all species of fish in Garibaldi, Oregon. Under state law, vessels must report their catch on a state fish receiving ticket. Oregon State regulations require all fishers landing salmon into Oregon from any fishery between Leadbetter Point, Washington and Cape Falcon, Oregon must notify ODFW within one hour of delivery or prior to transport away from the port of landing by either calling 541-867-0300 ext. 271 or sending notification via e-mail to nfalcon.trollreport@state.or.us. Notification shall include vessel name and number, number of salmon by species, port of landing and location of delivery, and estimated time of delivery. Inseason actions may modify harvest guidelines in later fisheries to achieve or prevent exceeding the overall allowable troll harvest impacts (C.8).</p> <p>Vessels in possession of salmon north of the Queets River may not cross the Queets River line without first notifying WDFW at 360-249-1215 with area fished, total Chinook, coho and halibut catch aboard, and destination.</p> <p>Vessels in possession of salmon south of the Queets River may not cross the Queets River line without first notifying WDFW at 360-249-1215 with area fished, total Chinook, coho and halibut catch aboard, and destination.</p>		

TABLE 1. 2018 Commercial troll management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 3 of 10)		
A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
South of Cape Falcon	South of Cape Falcon	South of Cape Falcon
Supplemental Management Information	Supplemental Management Information	Supplemental Management Information
<ol style="list-style-type: none"> 1. Sacramento River fall Chinook spawning escapement of 151,111 hatchery and natural area adults. 2. Sacramento Index exploitation rate of 34.1%. 3. Klamath River recreational fishery allocation: 5,762 adult Klamath River fall Chinook. 4. Klamath tribal allocation: 17,568 adult Klamath River fall Chinook. 5. CA/OR share of Klamath River fall Chinook commercial ocean harvest: 69% / 31%. 6. Fisheries may need to be adjusted to meet NMFS ESA consultation standards, FMP requirements, other management objectives, or upon receipt of new allocation recommendations from the California Fish and Game Commission. 	<ol style="list-style-type: none"> 1. Sacramento River fall Chinook spawning escapement of 164,934 hatchery and natural area adults. 2. Sacramento Index exploitation rate of 28.1%. 3. Klamath River recreational fishery allocation: 1,785 adult Klamath River fall Chinook. 4. Klamath tribal allocation: 17,568 adult Klamath River fall Chinook. 5. CA/OR share of Klamath River fall Chinook commercial ocean harvest: 66% / 34%. 6. Fisheries may need to be adjusted to meet NMFS ESA consultation standards, FMP requirements, other management objectives, or upon receipt of new allocation recommendations from the California Fish and Game Commission. 	<ol style="list-style-type: none"> 1. Sacramento River fall Chinook spawning escapement of 180,093 hatchery and natural area adults. 2. Sacramento Index exploitation rate of 21.5%. 3. Klamath River recreational fishery allocation: 1,812 adult Klamath River fall Chinook. 4. Klamath tribal allocation: 12,083 adult Klamath River fall Chinook. 5. CA/OR share of Klamath River fall Chinook commercial ocean harvest: 76% / 24%. 6. Fisheries may need to be adjusted to meet NMFS ESA consultation standards, FMP requirements, other management objectives, or upon receipt of new allocation recommendations from the California Fish and Game Commission.
<p>Cape Falcon to Humbug Mt.</p> <ul style="list-style-type: none"> • May 7-31; • June 7-30; • July 8-31; • August 1-15; • September 1-October 31 (C.9.a). <p>Open seven days per week. All salmon except coho (C.4, C.7). Chinook minimum size limit of 28 inches total length (B, C.1). All vessels fishing in the area must land their salmon in the State of Oregon. See gear restrictions and definitions (C.2, C.3) and Oregon State regulations for a description of special regulations at the mouth of Tillamook Bay.</p> <p>Beginning September 1 no more than 50 Chinook allowed per vessel per landing week (Thurs-Wed); and only open shoreward of the 40 fathom management line beginning October 1.</p> <p>In 2019, the season will open March 15 for all salmon except coho. Chinook minimum size limit of 28 inches total length. Gear restrictions same as in 2018. This opening could be modified following Council review at its March 2019 meeting.</p>	<p>Cape Falcon to Humbug Mt.</p> <ul style="list-style-type: none"> • May 15-31; • June 12-30; • July 13-31; • August 1-15; • September 1-October 31 (C.9.a). <p>Same as Alternative 1</p> <p>In 2019, same as Alternative I</p>	<p>Cape Falcon to Humbug Mt.</p> <ul style="list-style-type: none"> • May 1-5, May 9-13, May 17-20; • June 1-5, June 9-13, June 17-21, June 25-28; • July 1-5, July 9-13, July 17-21, July 25-28; • August 1-4, August 9-12, August 15-18, August 28-30; • September 1-October 31 (C.9.a). <p>Same as Alternative 1</p> <p>Beginning September 1 only open shoreward of the 40 fathom management line and no more than 50 Chinook per vessel per landing week (Thurs-Wed).</p> <p>In 2019, same as Alternative I</p>

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A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
<p>Humbug Mt. to OR/CA Border (Oregon KMZ)</p> <ul style="list-style-type: none"> • May 9-31; • June 7 through earlier of June 30, or a 1,500 Chinook quota; • July 8 through earlier of July 31, or a 2,000 Chinook quota (C.8.b); • August 1 through earlier of August 15, or a 500 Chinook quota; (C.9.a). <p>Open seven days per week. All salmon except coho (C.4, C.7). Chinook minimum size limit of 28 inches total length (B, C.1). See compliance requirements (C.1) and gear restrictions and definitions (C.2, C.3). Prior to June 1, all salmon caught in this area must be landed and delivered in the State of Oregon.</p> <p>June 7 – August 22 weekly landing and possession limit of 50 Chinook per vessel per landing week (Thurs.-Wed.). Any remaining portion of the June Chinook quota may be transferred inseason on an impact neutral basis to the next open quota period (C.8).</p> <p>All vessels fishing in this area during June and August must land and deliver all salmon within this area or into Port Orford, within 24 hours of any closure of this fishery, and prior to fishing outside of this area.</p> <p>For all quota managed seasons (June and August), Oregon state regulations require fishers to notify ODFW within one hour of landing and prior to transport away from the port of landing by calling 541-867-0300 Ext. 252 or sending notification via e-mail to kmzor.trollreport@state.or.us, with vessel name and number, number of salmon by species, location of delivery, and estimated time of delivery.</p> <p>In 2019, the season will open March 15 for all salmon except coho. Chinook minimum size limit of 28 inches total length. Gear restrictions same as in 2018. This opening could be modified following Council review at its March 2019 meeting.</p>	<p>Humbug Mt. to OR/CA Border (Oregon KMZ)</p> <ul style="list-style-type: none"> • June 12 through earlier of June 30, or a 1,500 Chinook quota (C.8.b); • July 13 through earlier of July 31, or a 2,000 Chinook quota (C.8.b); • August 1 through earlier of August 15, or a 500 Chinook quota; (C.9.a). <p>Same as Alternative 1</p> <p>June 12-August 15 daily landing and possession limit of 20 Chinook. Any remaining portion of the June and/or July Chinook quotas may be transferred inseason on an impact neutral basis to the next open quota period (C.8).</p> <p>All vessels fishing in this area from June through August must land and deliver all salmon into Port Orford, Gold Beach, or Brookings, within 24 hours of any closure of this fishery, and prior to fishing outside of this area.</p> <p>For all quota managed seasons (June, July, and August), Oregon state regulations require fishers to notify ODFW within one hour of landing and prior to transport away from the port of landing by calling 541-867-0300 Ext. 252 or sending notification via e-mail to kmzor.trollreport@state.or.us, with vessel name and number, number of salmon by species, location of delivery, and estimated time of delivery.</p> <p>In 2019, same as Alternative 1</p>	<p>Humbug Mt. to OR/CA Border (Oregon KMZ)</p> <ul style="list-style-type: none"> • Closed (C.9.a). <p>In 2019, same as Alternative 1</p>

TABLE 1. 2018 Commercial troll management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 5 of 10)		
A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
<p>OR/CA Border to Humboldt South Jetty (California KMZ)</p> <ul style="list-style-type: none"> • June 1-30, or 4,000 Chinook quota whichever comes first; • July 1-31 or 4,000 Chinook quota whichever comes first; • August 3-31 or 4,000 Chinook quota whichever comes first (C.9.b). <p>Open five days per week (Fri.-Tue.) All salmon except coho (C.4, C.7). Chinook minimum size limit of 26 inches total length (B, C.1).</p> <p>Landing and possession limit of 20 Chinook per vessel per day (C.8.f). Any remaining portion of the June and/or July Chinook quotas may be transferred inseason on an impact neutral basis to the next open quota period (C.8.g).</p> <p>All fish caught in this area must be landed within the area and within 24 hours of any closure of the fishery and prior to fishing outside the area (C.10). See compliance requirements (C.1) and gear restrictions and definitions (C.2, C.3). Klamath Control Zone closed (C.5.e). See California State regulations for additional closures adjacent to the Smith and Klamath rivers.</p>	<p>OR/CA Border to Humboldt South Jetty (California KMZ)</p> <ul style="list-style-type: none"> • May 1-31 or 2,000 Chinook quota whichever comes first; • June 1-30, or 4,000 Chinook quota whichever comes first; • July 1-31 or 2,000 Chinook quota whichever comes first; • August 3-31 or 2,000 Chinook quota whichever comes first (C.9.b). <p>Same as Alternative 1</p> <p>Landing and possession limit of 20 Chinook per vessel per day (C.8.f). Any remaining portion of the May, June, and/or July Chinook quotas may be transferred inseason on an impact neutral basis to the next open quota period (C.8.g).</p> <p>Same as Alternative 1</p>	<p>OR/CA Border to Humboldt South Jetty (California KMZ)</p> <ul style="list-style-type: none"> • May 1-31 or 5,000 Chinook quota whichever comes first; • June 1-30, or 5,000 Chinook quota whichever comes first; • July 1-31 or 2,000 Chinook quota whichever comes first; • August 3-28 or 2,000 Chinook quota whichever comes first; • September 1-30 or 3,000 Chinook quota whichever comes first (C.9.b). <p>Same as Alternative 1</p> <p>Landing and possession limit of 20 Chinook per vessel per day (C.8.f). Any remaining portion of the May, June, and/or July Chinook quotas may be transferred inseason on an impact neutral basis to the next open quota period (C.8.g).</p> <p>Same as Alternative 1</p>
<p>Humboldt South Jetty to Horse Mt. Closed.</p>	<p>Humboldt South Jetty to Horse Mt. Closed.</p>	<p>Humboldt South Jetty to Horse Mt. Closed.</p>
<p>Horse Mt. to Point Arena (Fort Bragg)</p> <ul style="list-style-type: none"> • August 1-29; • September 1-30 (C.9.b). <p>Open seven days per week. All salmon except coho (C.4, C.7). Chinook minimum size limit of 26 inches total length (B, C.1). See compliance requirements (C.1) and gear restrictions and definitions (C.2, C.3). All salmon must be landed in California.</p> <p>All salmon caught in California prior to September 1 must be landed and offloaded no later than 11:59 p.m., August 30 (C.6). When the CA KMZ fishery is open, all fish caught in the area must be landed south of Horse Mountain until the CA KMZ fishery has been closed for at least 24 hours (C.6). During September, all fish must be landed north of Point Arena (C.6).</p> <p>In 2019, the season will open April 16-30 for all salmon except coho, with a 27 inch Chinook minimum size limit and the same gear restrictions as in 2018. All salmon caught in the area must be landed in the area. This opening could be modified following Council review at its March 2019 meeting.</p>	<p>Horse Mt. to Point Arena (Fort Bragg)</p> <ul style="list-style-type: none"> • August 1-29; • September 1-30 (C.9.b). <p>Same as Alternative I</p> <p>In 2019, same as Alternative I</p>	<p>Horse Mt. to Point Arena (Fort Bragg)</p> <ul style="list-style-type: none"> • August 5-29; • September 1-30 (C.9.b). <p>Same as Alternative I</p> <p>In 2019, same as Alternative I</p>
<p>When the fishery is closed between the OR/CA border and Humboldt Mountain and open to the south, vessels with fish on board caught in the open area off California may seek temporary mooring in Brookings, Oregon prior to landing in California only if such vessels first notify the Chetco River Coast Guard Station via VHF channel 22A between the hours of 0500 and 2200 and provide the vessel name, number of fish on board, and estimated time of arrival (C.6).</p>		

TABLE 1. 2018 Commercial troll management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 6 of 10)		
A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
<p>Pt. Arena to Pigeon Pt. (San Francisco)</p> <ul style="list-style-type: none"> • June 11-17; • August 1-29; • September 1-30 (C.9.b). <p>Open seven days per week. All salmon except coho (C.4, C.7). Chinook minimum size limit of 26 inches total length (B, C.1). See compliance requirements (C.1) and gear restrictions and definitions (C.2, C.3). All salmon must be landed in California.</p> <p>All salmon caught in the area during June must be landed and offloaded no later than 11:59 p.m., July 1 (C.6), and all salmon caught in the area during August must be landed and offloaded no later than 11:59 p.m., August 30 (C.6). During September, all salmon must be landed south of Point Arena (C.6).</p> <p>When the CA KMZ fishery is open, all fish caught in the area must be landed south of Horse Mountain until the CA KMZ fishery has been closed for at least 24 hours (C.6).</p> <p>Point Reyes to Point San Pedro (Fall Area Target Zone)</p> <ul style="list-style-type: none"> • October 1-5 and 8-12. <p>Open five days per week, Monday through Friday. All salmon except coho (C.4, C.7). Chinook minimum size limit of 26 inches total length (B, C.1). All salmon caught in this area must be landed between Point Arena and Pigeon Point (C.6). See compliance requirements (C.1) and gear restrictions and definitions (C.2, C.3).</p>	<p>Pt. Arena to Pigeon Pt. (San Francisco)</p> <ul style="list-style-type: none"> • August 1-29; • September 1-30 (C.9.b). <p>Same as Alternative 1</p> <p>All salmon caught in the area during August must be landed and offloaded no later than 11:59 p.m., August 30 (C.6). During September, all salmon must be landed south of Point Arena (C.6).</p> <p>Same as Alternative 1</p> <p>Point Reyes to Point San Pedro (Fall Area Target Zone)</p> <ul style="list-style-type: none"> • Same as Alternative 1 	<p>Pt. Arena to Pigeon Pt. (San Francisco)</p> <ul style="list-style-type: none"> • September 1-30 (C.9.b). <p>Same as Alternative 1</p> <p>During September, all salmon must be landed south of Point Arena (C.6).</p> <p>Point Reyes to Point San Pedro (Fall Area Target Zone)</p> <ul style="list-style-type: none"> • Same as Alternative 1
<p>Pigeon Point to U.S./Mexico Border (Monterey)</p> <ul style="list-style-type: none"> • May 1-16 (C.9.b). <p>Open seven days per week. All salmon except coho (C.4, C.7). Chinook minimum size limit of 26 inches total length (B, C.1). All salmon must be landed in California. See compliance requirements (C.1) and gear restrictions and definitions (C.2, C.3).</p> <p>All salmon caught in the area must be landed and offloaded no later than 11:59 p.m., May 31 (C.6).</p>	<p>Pigeon Point to U.S./Mexico Border (Monterey)</p> <ul style="list-style-type: none"> • May 1-15 (C.9.b). <p>Same as Alternative 1</p> <p>When the CA KMZ fishery is open, all fish caught in the area must be landed south of Horse Mountain until the CA KMZ fishery has been closed for at least 24 hours. All salmon caught in the area must be landed and offloaded no later than 11:59 p.m., May 31 (C.6).</p>	<p>Pigeon Point to U.S./Mexico Border (Monterey)</p> <ul style="list-style-type: none"> • May 1-10 (C.9.b). <p>Same as Alternative 1</p> <p>When the CA KMZ fishery is open, all fish caught in the area must be landed south of Horse Mountain until the CA KMZ fishery has been closed for at least 24 hours. All salmon caught in the area must be landed and offloaded no later than 11:59 p.m., May 31 (C.6).</p>
California State regulations require all salmon be made available to a CDFW representative for sampling immediately at port of landing. Any person in possession of a salmon with a missing adipose fin, upon request by an authorized agent or employee of the CDFW, shall immediately relinquish the head of the salmon to the State (California Fish and Game Code §8226).		

TABLE 1. 2017 Commercial troll management Alternatives for non-Indian ocean salmon fisheries - Council Adopted. (Page 7 of 10)

B. MINIMUM SIZE (Inches) (See C.1)					
Area (when open)	Chinook		Coho		Pink
	Total Length	Head-off	Total Length	Head-off	
North of Cape Falcon	28	21.5	16	12	None
Cape Falcon to Humbug Mt.	28	21.5	-	-	None
Humbug Mt. to OR/CA Border	28	21.5	-	-	None
OR/CA Border to Humboldt South Jetty	26	19.5	-	-	26
Horse Mt. to Pt. Arena	26	19.5	-	-	26
Pt. Arena to Pigeon Pt.	26	19.5	-	-	26
Pigeon Pt. to U.S./Mexico Border	26	19.5	-	-	26

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS

C.1. Compliance with Minimum Size or Other Special Restrictions: All salmon on board a vessel must meet the minimum size, landing/possession limit, or other special requirements for the area being fished and the area in which they are landed if the area is open or has been closed less than 48 hours for that species of salmon. Salmon may be landed in an area that has been closed for a species of salmon more than 48 hours only if they meet the minimum size, landing/possession limit, or other special requirements for the area in which they were caught. Salmon may not be filleted prior to landing.

Any person who is required to report a salmon landing by applicable state law must include on the state landing receipt for that landing both the number and weight of salmon landed by species. States may require fish landing/receiving tickets be kept on board the vessel for 90 days or more after landing to account for all previous salmon landings.

C.2. Gear Restrictions:

- Salmon may be taken only by hook and line using single point, single shank, barbless hooks.
- Cape Falcon, Oregon, to the OR/CA border: No more than 4 spreads are allowed per line.
- OR/CA border to U.S./Mexico border: No more than 6 lines are allowed per vessel, and barbless circle hooks are required when fishing with bait by any means other than trolling.

C.3. Gear Definitions:

Trolling defined: Fishing from a boat or floating device that is making way by means of a source of power, other than drifting by means of the prevailing water current or weather conditions.

Troll fishing gear defined: One or more lines that drag hooks behind a moving fishing vessel engaged in trolling. In that portion of the fishery management area off Oregon and Washington, the line or lines must be affixed to the vessel and must not be intentionally disengaged from the vessel at any time during the fishing operation.

Spread defined: A single leader connected to an individual lure and/or bait.

Circle hook defined: A hook with a generally circular shape and a point which turns inward, pointing directly to the shank at a 90° angle.

C.4. Vessel Operation in Closed Areas with Salmon on Board:

- Except as provided under C.4.b below, it is unlawful for a vessel to have troll or recreational gear in the water while in any area closed to fishing for a certain species of salmon, while possessing that species of salmon; however, fishing for species other than salmon is not prohibited if the area is open for such species, and no salmon are in possession.
- When Genetic Stock Identification (GSI) samples will be collected in an area closed to commercial salmon fishing, the scientific research permit holder shall notify NOAA OLE, USCG, CDFW, WDFW, ODFW and OSP at least 24 hours prior to sampling and provide the following information: the vessel name, date, location and time collection activities will be done. Any vessel collecting GSI samples in a closed area shall not possess any salmon other than those from which GSI samples are being collected. Salmon caught for collection of GSI samples must be immediately released in good condition after collection of samples.

TABLE 1. 2018 Commercial troll management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 8 of 10)

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS (Continued)**C.5. Control Zone Definitions:**

- a. *Cape Flattery Control Zone* - The area from Cape Flattery (48°23'00" N. lat.) to the northern boundary of the U.S. EEZ; and the area from Cape Flattery south to Cape Alava (48°10'00" N. lat.) and east of 125°05'00" W. long.
- b. *Mandatory Yelloweye Rockfish Conservation Area* - The area in Washington Marine Catch Area 3 from 48°00.00' N. lat.; 125°14.00' W. long. to 48°02.00' N. lat.; 125°14.00' W. long. to 48°02.00' N. lat.; 125°16.50' W. long. to 48°00.00' N. lat.; 125°16.50' W. long. and connecting back to 48°00.00' N. lat.; 125°14.00' W. long.
- c. *Grays Harbor Control Zone* - The area defined by a line drawn from the Westport Lighthouse (46° 53'18" N. lat., 124° 07'01" W. long.) to Buoy #2 (46° 52'42" N. lat., 124°12'42" W. long.) to Buoy #3 (46° 55'00" N. lat., 124°14'48" W. long.) to the Grays Harbor north jetty (46° 55'36" N. lat., 124°10'51" W. long.).
- d. *Columbia Control Zone* - An area at the Columbia River mouth, bounded on the west by a line running northeast/southwest between the red lighted Buoy #4 (46°13'35" N. lat., 124°06'50" W. long.) and the green lighted Buoy #7 (46°15'09" N. lat., 124°06'16" W. long.); on the east, by the Buoy #10 line which bears north/south at 357° true from the south jetty at 46°14'00" N. lat., 124°03'07" W. long. to its intersection with the north jetty; on the north, by a line running northeast/southwest between the green lighted Buoy #7 to the tip of the north jetty (46°15'48" N. lat., 124°05'20" W. long.), and then along the north jetty to the point of intersection with the Buoy #10 line; and, on the south, by a line running northeast/southwest between the red lighted Buoy #4 and tip of the south jetty (46°14'03" N. lat., 124°04'05" W. long.), and then along the south jetty to the point of intersection with the Buoy #10 line.
- e. *Klamath Control Zone* - The ocean area at the Klamath River mouth bounded on the north by 41°38'48" N. lat. (approximately 6 nautical miles north of the Klamath River mouth); on the west by 124°23'00" W. long. (approximately 12 nautical miles off shore); and on the south by 41°26'48" N. lat. (approximately 6 nautical miles south of the Klamath River mouth).
- f. Waypoints for the 40 fathom regulatory line from Cape Falcon to Humbug Mt. (50 CFR 660.71 (k) (12)-(70).

45°46.00' N. lat., 124°04.49' W. long.;	44°51.28' N. lat., 124°10.21' W. long.;	44°08.30' N. lat., 124°16.75' W. long.;	43°10.96' N. lat., 124°32.33' W. long.;
45°44.34' N. lat., 124°05.09' W. long.;	44°49.49' N. lat., 124°10.90' W. long.;	44°01.18' N. lat., 124°15.42' W. long.;	43°05.65' N. lat., 124°31.52' W. long.;
45°40.64' N. lat., 124°04.90' W. long.;	44°44.96' N. lat., 124°14.39' W. long.;	43°51.61' N. lat., 124°14.68' W. long.;	42°59.66' N. lat., 124°32.58' W. long.;
45°33.00' N. lat., 124°04.46' W. long.;	44°43.44' N. lat., 124°14.78' W. long.;	43°42.66' N. lat., 124°15.46' W. long.;	42°54.97' N. lat., 124°36.99' W. long.;
45°32.27' N. lat., 124°04.74' W. long.;	44°42.26' N. lat., 124°13.81' W. long.;	43°40.49' N. lat., 124°15.74' W. long.;	42°53.81' N. lat., 124°38.57' W. long.;
45°29.26' N. lat., 124°04.22' W. long.;	44°41.68' N. lat., 124°15.38' W. long.;	43°38.77' N. lat., 124°15.64' W. long.;	42°50.00' N. lat., 124°39.68' W. long.;
45°20.25' N. lat., 124°04.67' W. long.;	44°34.87' N. lat., 124°15.80' W. long.;	43°34.52' N. lat., 124°16.73' W. long.;	42°49.13' N. lat., 124°39.70' W. long.;
45°19.99' N. lat., 124°04.62' W. long.;	44°33.74' N. lat., 124°14.44' W. long.;	43°28.82' N. lat., 124°19.52' W. long.;	42°46.47' N. lat., 124°38.89' W. long.;
45°17.50' N. lat., 124°04.91' W. long.;	44°27.66' N. lat., 124°16.99' W. long.;	43°23.91' N. lat., 124°24.28' W. long.;	42°45.74' N. lat., 124°38.86' W. long.;
45°11.29' N. lat., 124°05.20' W. long.;	44°19.13' N. lat., 124°19.22' W. long.;	43°20.83' N. lat., 124°26.63' W. long.;	42°44.79' N. lat., 124°37.96' W. long.;
45°05.80' N. lat., 124°05.40' W. long.;	44°15.35' N. lat., 124°17.38' W. long.;	43°17.96' N. lat., 124°28.81' W. long.;	42°45.01' N. lat., 124°36.39' W. long.;
45°05.08' N. lat., 124°05.93' W. long.;	44°14.38' N. lat., 124°17.78' W. long.;	43°16.75' N. lat., 124°28.42' W. long.;	42°44.14' N. lat., 124°35.17' W. long.;
45°03.83' N. lat., 124°06.47' W. long.;	44°12.80' N. lat., 124°17.18' W. long.;	43°13.97' N. lat., 124°31.99' W. long.;	42°42.14' N. lat., 124°32.82' W. long.;
45°01.70' N. lat., 124°06.53' W. long.;	44°09.23' N. lat., 124°15.96' W. long.;	43°13.72' N. lat., 124°33.25' W. long.;	42°40.50' N. lat., 124°31.98' W. long.;
44°58.75' N. lat., 124°07.14' W. long.;	44°08.38' N. lat., 124°16.79' W. long.;	43°12.26' N. lat., 124°34.16' W. long.;	

TABLE 1. 2018 Commercial troll management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 9 of 10)

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS (continued)

- C.6. Notification When Unsafe Conditions Prevent Compliance with Regulations: If prevented by unsafe weather conditions or mechanical problems from meeting special management area landing restrictions, vessels must notify the U.S. Coast Guard and receive acknowledgment of such notification prior to leaving the area. This notification shall include the name of the vessel, port where delivery will be made, approximate number of salmon (by species) on board, the estimated time of arrival, and the specific reason the vessel is not able to meet special management area landing restrictions.

In addition to contacting the U.S. Coast Guard, vessels fishing south of the Oregon/California border must notify CDFW within one hour of leaving the management area by calling 800-889-8346 and providing the same information as reported to the U.S. Coast Guard. All salmon must be offloaded within 24 hours of reaching port.

- C.7. Incidental Halibut Harvest: During authorized periods, the operator of a vessel that has been issued an incidental halibut harvest license may retain Pacific halibut caught incidentally in Area 2A while trolling for salmon. Halibut retained must be no less than 32 inches in total length, measured from the tip of the lower jaw with the mouth closed to the extreme end of the middle of the tail, and must be landed with the head on. When halibut are caught and landed incidental to commercial salmon fishing by an IPHC license holder, any person who is required to report the salmon landing by applicable state law must include on the state landing receipt for that landing both the number of halibut landed, and the total dressed, head-on weight of halibut landed, in pounds, as well as the number and species of salmon landed.

License applications for incidental harvest must be obtained from the International Pacific Halibut Commission (phone: 206-634-1838). Applicants must apply prior to mid-March 2018 for 2018 permits (*exact date to be set by the IPHC in early 2018*). Incidental harvest is authorized only during April, May, and June of the 2018 troll seasons, and after June 30 in 2018 if quota remains and if announced on the NMFS hotline (phone: 800-662-9825 or 206-526-6667). WDFW, ODFW, and CDFW will monitor landings. If the landings are projected to exceed the IPHC's _____ pound preseason allocation or the total Area 2A non-Indian commercial halibut allocation, NMFS will take inseason action to prohibit retention of halibut in the non-Indian salmon troll fishery.

Alternative I - May 1, 2018 until the end of the 2018 salmon troll season, and April 1-30, 2019, license holders may land or possess no more than one Pacific halibut per three Chinook, except one Pacific halibut may be possessed or landed without meeting the ratio requirement, and no more than 20 halibut may be possessed or landed per trip. Pacific halibut retained must be no less than 32 inches in total length (with head on).

Alternative II - May 1, 2018 until the end of the 2018 salmon troll season, and April 1-30, 2019, license holders may land or possess no more than one Pacific halibut per three Chinook, except one Pacific halibut may be possessed or landed without meeting the ratio requirement, and no more than 30 halibut may be possessed or landed per trip. Pacific halibut retained must be no less than 32 inches in total length (with head on).

Alternative III - May 1, 2018 until the end of the 2018 salmon troll season, and April 1-30, 2019, license holders may land or possess no more than one Pacific halibut per two Chinook, except two Pacific halibut may be possessed or landed without meeting the ratio requirement, and no more than 35 halibut may be possessed or landed per trip. Pacific halibut retained must be no less than 32 inches in total length (with head on).

Incidental Pacific halibut catch regulations in the commercial salmon troll fishery adopted for 2018, prior to any 2018 inseason action, will be in effect when incidental Pacific halibut retention opens on April 1, 2019 unless otherwise modified by inseason action at the March 2019 Council meeting.

- a. "C-shaped" yelloweye rockfish conservation area is an area to be voluntarily avoided for salmon trolling. NMFS and the Council request salmon trollers voluntarily avoid this area in order to protect yelloweye rockfish. The area is defined in the Pacific Council Halibut Catch Sharing Plan in the North Coast subarea (Washington marine area 3), with the following coordinates in the order listed:

48°18' N. lat.; 125°18' W. long.;
 48°18' N. lat.; 124°59' W. long.;
 48°11' N. lat.; 124°59' W. long.;
 48°11' N. lat.; 125°11' W. long.;
 48°04' N. lat.; 125°11' W. long.;
 48°04' N. lat.; 124°59' W. long.;
 48°00' N. lat.; 124°59' W. long.;
 48°00' N. lat.; 125°18' W. long.;
 and connecting back to 48°18' N. lat.; 125°18' W. long.

TABLE 1.2018 Commercial troll management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 10 of 10)

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS (continued)

- C.8. Inseason Management: In addition to standard inseason actions or modifications already noted under the season description, the following inseason guidance is provided to NMFS:
- Chinook remaining from the May through June non-Indian commercial troll harvest guideline north of Cape Falcon may be transferred to the July through September harvest guideline if the transfer would not result in exceeding preseason impact expectations on any stocks.
 - Chinook remaining from the June or July non-Indian commercial troll quotas in the Oregon KMZ may be transferred to the Chinook quota for the July open period if the transfer would not result in exceeding preseason impact expectations on any stocks.
 - NMFS may transfer salmon between the recreational and commercial fisheries north of Cape Falcon if there is agreement among the areas' representatives on the Salmon Advisory Subpanel (SAS), and if the transfer would not result in exceeding preseason impact expectations on any stocks.
 - At the March 2019 meeting, the Council will consider inseason recommendations for special regulations for any experimental fisheries (proposals must meet Council protocol and be received in November 2018).
 - If retention of unmarked coho (adipose fin intact) is permitted by inseason action, the allowable coho quota will be adjusted to ensure preseason projected impacts on all stocks is not exceeded.
 - Landing limits may be modified inseason to sustain season length and keep harvest within overall quotas.
 - Chinook remaining from the remaining May, June, and /or July non-Indian commercial troll quotas in the California KMZ may be transferred to the Chinook quota for the next open period if the transfer would not result in exceeding preseason impact expectations on any stocks.
- C.9. State Waters Fisheries: Consistent with Council management objectives:
- The State of Oregon may establish additional late-season fisheries in state waters.
 - The State of California may establish limited fisheries in selected state waters.
 - Check state regulations for details.
- C.10. For the purposes of California Fish and Game Code, Section 8232.5, the definition of the Klamath Management Zone (KMZ) for the ocean salmon season shall be that area from Humburg Mountain, Oregon, to Horse Mountain, California.

TABLE 2. 2018 Recreational management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 1 of 7)

A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
North of Cape Falcon	North of Cape Falcon	North of Cape Falcon
Supplemental Management Information	Supplemental Management Information	Supplemental Management Information
1. Overall non-Indian TAC: 65,000 Chinook and 47,600 coho marked with a healed adipose fin clip (marked). 2. Recreational TAC: 32,500 Chinook and 42,000 marked coho; all retained coho must be marked. 3. A trade with commercial troll may be considered in April. 4. No Area 4B add-on fishery. 5. Buoy 10 fishery opens August 1 with an expected landed catch of 15,000 marked coho in August and September. 6. Overall Chinook and/or coho TACs may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries.	1. Overall non-Indian TAC: 55,000 Chinook and 35,000 coho marked with a healed adipose fin clip (marked). 2. Recreational TAC: 27,500 Chinook and 29,400 marked coho; all retained coho must be marked. 3. Trade: 4. No Area 4B add-on fishery. 5. Buoy 10 fishery opens August 1 with an expected landed catch of 20,000 marked coho in August and September. 6. Overall Chinook and/or coho TACs may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries.	1. Overall non-Indian TAC: 45,000 Chinook and 20,000 coho marked with a healed adipose fin clip (marked). 2. Recreational TAC: 22,500 Chinook and 16,800 marked coho; all retained coho must be marked. 3. Trade: 4. No Area 4B add-on fishery. 5. Buoy 10 fishery opens August 1 with an expected landed catch of 25,000 marked coho in August and September. 6. Overall Chinook and/or coho TACs may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries.
U.S./Canada Border to Cape Alava (Neah Bay) <ul style="list-style-type: none"> June 23 through earlier of September 3 or 4,370 marked coho subarea quota with a subarea guideline of 5,800 Chinook (C.5). <p>Open seven days per week. All salmon, except no chum beginning August 1; two salmon per day. All coho must be marked with a healed adipose fin clip (C.1).</p> <p>Beginning August 1, Chinook non-retention east of the Bonilla-Tatoosh line (C.4.a) during Council managed ocean fishery. See gear restrictions and definitions (C.2, C.3). Inseason management may be used to sustain season length and keep harvest within the overall Chinook and coho recreational TACs for north of Cape Falcon (C.5).</p>	U.S./Canada Border to Cape Alava (Neah Bay) <ul style="list-style-type: none"> June 30 through earlier of September 3 or 3,060 marked coho subarea quota with a subarea guideline of 4,900 Chinook (C.5). <p>Same as Alternative 1</p> <p>Same as Alternative 1</p>	U.S./Canada Border to Cape Alava (Neah Bay) <ul style="list-style-type: none"> July 1 through earlier of September 3 or 1,750 marked coho subarea quota with a subarea guideline of 4,000 Chinook (C.5). <p>Open seven days per week. All salmon, except no chum beginning August 1; two salmon per day, no more than one of which may be a Chinook. All coho must be marked with a healed adipose fin clip (C.1).</p> <p>Same as Alternative 1</p>

TABLE 2. 2018 Recreational management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 2 of 7)		
A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
Cape Alava to Queets River (La Push Subarea) <ul style="list-style-type: none"> June 23 through earlier of September 3 or 990 marked coho subarea quota with a subarea guideline of 1,700 Chinook (C.5) September 29 through earlier of October 14 or 100 marked coho quota or 100 Chinook quota (C.5) in the area north of 47°50'00 N. lat. and south of 48°00'00" N. lat. <p>Open seven days per week. All salmon, two salmon per day. All coho must be marked with a healed adipose fin clip (C.1). See gear restrictions and definitions (C.2, C.3).</p> <p>Inseason management may be used to sustain season length and keep harvest within the overall Chinook and coho recreational TACs for north of Cape Falcon (C.5).</p>	Cape Alava to Queets River (La Push Subarea) <ul style="list-style-type: none"> June 30 through earlier of September 3 or 660 marked coho subarea quota with a subarea guideline of 1,400 Chinook (C.5). September 29 through earlier of October 14 or 100 marked coho quota or 100 Chinook quota (C.5) in the area north of 47°50'00 N. lat. and south of 48°00'00" N. lat. <p>Same as Alternative 1</p> <p>Same as Alternative 1</p>	Cape Alava to Queets River (La Push Subarea) <ul style="list-style-type: none"> July 1 through earlier of September 3 or 440 marked coho subarea quota with a subarea guideline of 1,300 Chinook (C.5). <p>Open seven days per week. All salmon, two salmon per day, no more than one of which may be a Chinook. All coho must be marked with a healed adipose fin clip (see C.1). See gear restrictions and definitions (C.2, C.3).</p> <p>Same as Alternative 1</p>
Queets River to Leadbetter Point (Westport Subarea) <ul style="list-style-type: none"> July 1 through earlier of September 3 or 15,540 marked coho subarea quota with a subarea guideline of 15,400 Chinook (C.5). <p>Open seven days per week. All salmon; two salmon per day, no more than one of which may be a Chinook. All coho must be marked with a healed adipose fin clip (C.1).</p> <p>See gear restrictions and definitions (C.2, C.3). Grays Harbor Control Zone closed beginning August 13 (C.4.b). Inseason management may be used to sustain season length and keep harvest within the overall Chinook and coho recreational TACs for north of Cape Falcon (C.5).</p>	Queets River to Leadbetter Point (Westport Subarea) <ul style="list-style-type: none"> June 24 through earlier of September 3 or 10,880 marked coho subarea quota with a subarea guideline of 13,100 Chinook (C.5) <p>Open five days per week (Sunday through Thursday). All salmon; two salmon per day, no more than one of which may be a Chinook. All coho must be marked with a healed adipose fin clip (C.1).</p> <p>Same as Alternative 1</p>	Queets River to Leadbetter Point (Westport Subarea) <ul style="list-style-type: none"> July 1 through earlier of September 3 or 6,210 marked coho subarea quota with a subarea guideline of 10,600 Chinook <p>Open five days per week (Sunday through Thursday). All salmon; two salmon per day no more than one of which may be a Chinook. All coho must be marked with a healed adipose fin clip (C.1).</p> <p>Same as Alternative 1</p>
Leadbetter Point to Cape Falcon (Columbia River Subarea) <ul style="list-style-type: none"> June 23 through earlier of September 3 or 21,000 marked coho subarea quota with a subarea guideline of 9,500 Chinook (C.5). <p>Open seven days per week. All salmon; two salmon per day, no more than one of which may be a Chinook. All coho must be marked with a healed adipose fin clip (C.1). See gear restrictions and definitions (C.2, C.3). Columbia Control Zone closed (C.4.c). Inseason management may be used to sustain season length and keep harvest within the overall Chinook and coho recreational TACs for north of Cape Falcon (C.5).</p>	Leadbetter Point to Cape Falcon (Columbia River Subarea) <ul style="list-style-type: none"> June 30 through earlier of September 3 or 14,700 marked coho subarea quota with a subarea guideline of 8,000 Chinook (C.5). <p>Same as Alternative 1</p>	Leadbetter Point to Cape Falcon (Columbia River Subarea) <ul style="list-style-type: none"> July 1 through earlier of September 3 or 8,400 marked coho subarea quota with a subarea guideline of 6,600 Chinook (C.5). <p>Same as Alternative 1</p>

TABLE 2. 2018 Recreational management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 3 of 7)		
A. SEASON ALTERNATIVE DESCRIPTIONS		
South of Cape Falcon	South of Cape Falcon	South of Cape Falcon
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
Supplemental Management Information	Supplemental Management Information	Supplemental Management Information
<ol style="list-style-type: none"> 1. Sacramento River fall Chinook spawning escapement of 151,111 hatchery and natural area adults. 2. Sacramento Index exploitation rate of 34.1%. 3. Klamath River recreational fishery allocation: 5,762 adult Klamath River fall Chinook. 4. Klamath tribal allocation: 17,568 adult Klamath River fall Chinook. 5. Overall recreational coho TAC: 20,000 coho marked with a healed adipose fin clip (marked), and 4,500 coho in the non-mark-selective coho fishery. 6. Fisheries may need to be adjusted to meet NMFS ESA consultation standards, FMP requirements, other management objectives, or upon receipt of new allocation recommendations from the CFGC. 	<ol style="list-style-type: none"> 1. Sacramento River fall Chinook spawning escapement of 164,934 hatchery and natural area adults. 2. Sacramento Index exploitation rate of 28.1%. 3. Klamath River recreational fishery allocation: 1,785 adult Klamath River fall Chinook. 4. Klamath tribal allocation: 17,568 adult Klamath River fall Chinook. 5. Overall recreational coho TAC: 40,000 coho marked with a healed adipose fin clip (marked). 6. Fisheries may need to be adjusted to meet NMFS ESA consultation standards, FMP requirements, other management objectives, or upon receipt of new allocation recommendations from the CFGC. 	<ol style="list-style-type: none"> 1. Sacramento River fall Chinook spawning escapement of 180,093 hatchery and natural area adults. 2. Sacramento Index exploitation rate of 21.5%. 3. Klamath River recreational fishery allocation: 1,812 adult Klamath River fall Chinook. 4. Klamath tribal allocation: 12,083 adult Klamath River fall Chinook. 5. CA/OR share of Klamath River fall Chinook commercial ocean harvest: 76% / 24%. 5. Overall recreational coho TAC: 9,800 coho in the non-mark-selective coho fishery. 6. Fisheries may need to be adjusted to meet NMFS ESA consultation standards, FMP requirements, other management objectives, or upon receipt of new allocation recommendations from the CFGC.
<p>Cape Falcon to Humbug Mt.</p> <ul style="list-style-type: none"> • March 15-October 31 (C.6), except as provided below during the all-salmon mark-selective fishery and the non-mark-selective coho fishery (C.5). <p>Open seven days per week. All salmon except coho, two fish per day (C.1). Chinook minimum size limit of 24 inches total length (B). See gear restrictions and definitions (C.2, C.3).</p> <p>October 1-31: The fishery is only open shoreward of the 40 fathom management line.</p> <p>In 2019, the season will open March 15 for all salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 24 inches total length (B); and the same gear restrictions as in 2018 (C.2, C.3).</p>	<p>Cape Falcon to Humbug Mt.</p> <ul style="list-style-type: none"> • March 15-October 31 (C.6), except as provided below during the all-salmon mark-selective coho fishery. <p>Same as Alternative 1</p> <p>September 4-October 31: The fishery is only open shoreward of the 40 fathom management line.</p> <p>In 2019, same as Alternative 1</p>	<p>Cape Falcon to Humbug Mt.</p> <ul style="list-style-type: none"> • March 15-October 31 (C.6), except as provided below during the all-salmon non-mark-selective coho fishery. <p>Same as Alternative 1</p> <p>Same as Alternative 1</p> <p>In 2019, same as Alternative 1</p>
Fishing in the Stonewall Bank yelloweye rockfish conservation area restricted to trolling only on days the all depth recreational halibut fishery is open (call the halibut fishing hotline 1-800-662-9825 for specific dates) (C.3.b, C.4.d).		

TABLE 2. 2018 Recreational management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 4 of 7)		
A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
<p>Cape Falcon to Humbug Mt. All-salmon mark-selective coho fishery:</p> <ul style="list-style-type: none"> June 30 through the earlier of August 19, or a landed catch of 20,000 marked coho (C.6). <p>Open seven days per week. All salmon, two salmon per day. All retained coho must be marked with a healed adipose fin clip (C.1). See minimum size limits (B). See gear restrictions and definitions (C.2, C.3).</p> <p>Any remainder of the mark-selective coho quota may be transferred inseason on an impact neutral basis to the September non-selective coho quota from Cape Falcon to Humbug Mountain (C.5).</p> <p>Non-mark-selective coho fishery:</p> <ul style="list-style-type: none"> September 1-3, and each Friday through Saturday from September 7 through the earlier of September 30 or a landed catch of a 4,500 non-mark-selective coho quota (C.6). Open days may be modified inseason. <p>All salmon, two salmon per day (C.1). See minimum size limits (B). See gear restrictions and definitions (C.2, C.3).</p>	<p>Cape Falcon to Humbug Mt. All-salmon mark-selective coho fishery:</p> <ul style="list-style-type: none"> June 30 through the earlier of September 3, or a landed catch of 40,000 marked coho (C.6). <p>Open seven days per week. All salmon, two salmon per day. All retained coho must be marked with a healed adipose fin clip (C.1). See minimum size limits (B). See gear restrictions and definitions (C.2, C.3).</p>	<p>Cape Falcon to Humbug Mt.</p> <p>Non-mark-selective coho fishery:</p> <ul style="list-style-type: none"> Open September 1-3, and each Friday through Sunday from September 7 through the earlier of September 30 or a landed catch of a 9,800 non-mark-selective coho quota. Open days may be modified inseason. (C.6). <p>All salmon, two salmon per day (C.1). See minimum size limits (B). See gear restrictions and definitions (C.2, C.3).</p>
Fishing in the Stonewall Bank yelloweye rockfish conservation area restricted to trolling only on days the all depth recreational halibut fishery is open (call the halibut fishing hotline 1-800-662-9825 for specific dates) (C.3.b, C.4.d).		
<p>Humbug Mt. to OR/CA Border (Oregon KMZ)</p> <ul style="list-style-type: none"> May 19 through August 26 (C.6). <p>Open seven days per week. All salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 24 inches total length (B). See gear restrictions and definitions (C.2, C.3).</p>	<p>Humbug Mt. to OR/CA Border (Oregon KMZ)</p> <ul style="list-style-type: none"> June 1-17; July 1-15; August 4-12 (C.6). <p>Same as Alternative 1</p>	<p>Humbug Mt. to OR/CA Border (Oregon KMZ)</p> <ul style="list-style-type: none"> May 19-July 4 (C.6). <p>Same as Alternative 1</p>

TABLE 2. 2018 Recreational management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 5 of 7)		
A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
OR/CA Border to Horse Mt. (California KMZ) <ul style="list-style-type: none"> June 20-July 31; August 20-September 3 (C.6). Open seven days per week. All salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 20 inches total length (B). See gear restrictions and definitions (C.2, C.3). Klamath Control Zone closed in August (C.4.e). See California State regulations for additional closures adjacent to the Smith, Eel, and Klamath Rivers.	OR/CA Border to Horse Mt. (California KMZ) <ul style="list-style-type: none"> July 1-September 3 (C.6). Same as Alternative 1	OR/CA Border to Horse Mt. (California KMZ) <ul style="list-style-type: none"> June 16-September 3 (C.6). Same as Alternative 1
Horse Mt. to Point Arena (Fort Bragg) <ul style="list-style-type: none"> July 15-October 31 (C.6). Open seven days per week. All salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 20 inches total length (B). See gear restrictions and definitions (C.2, C.3). In 2019, season opens April 6 for all salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 20 inches total length (B); and the same gear restrictions as in 2018 (C.2, C.3).	Horse Mt. to Point Arena (Fort Bragg) <ul style="list-style-type: none"> July 1-October 31 (C.6). Same as Alternative 1 In 2019, same as Alternative 1	Horse Mt. to Point Arena (Fort Bragg) <ul style="list-style-type: none"> July 21-October 31 (C.6). Same as Alternative 1 In 2019, same as Alternative 1
Point Arena to Pigeon Point (San Francisco) <ul style="list-style-type: none"> June 9-October 31 (C.6). Open seven days per week. All salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 20 inches total length (B). See gear restrictions and definitions (C.2, C.3). In 2019, season opens April 6 for all salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 24 inches total length (B); and the same gear restrictions as in 2018 (C.2, C.3).	Point Arena to Pigeon Point (San Francisco) <ul style="list-style-type: none"> July 1-October 31 (C.6). Same as Alternative 1 In 2019, same as Alternative 1	Point Arena to Pigeon Point (San Francisco) <ul style="list-style-type: none"> July 21-October 31 (C.6). Same as Alternative 1 In 2019, same as Alternative 1
Pigeon Point to U.S./Mexico Border (Monterey) <ul style="list-style-type: none"> April 7-July 31 (C.6). Open seven days per week. All salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 24 inches total length (B). See gear restrictions and definitions (C.2, C.3). In 2019, season opens April 6 for all salmon except coho, two salmon per day (C.1). Chinook minimum size limit of 24 inches total length (B); and the same gear restrictions as in 2018 (C.2, C.3).	Pigeon Point to U.S./Mexico Border (Monterey) <ul style="list-style-type: none"> April 7-June 15 (C.6). Same as Alternative 1 In 2019, same as Alternative 1	Pigeon Point to U.S./Mexico Border (Monterey) <ul style="list-style-type: none"> April 7-May 31 (C.6). Same as Alternative 1 In 2019, same as Alternative 1
California State regulations require all salmon be made available to a CDFW representative for sampling immediately at port of landing. Any person in possession of a salmon with a missing adipose fin, upon request by an authorized agent or employee of the CDFW, shall immediately relinquish the head of the salmon to the State (California Code of Regulations Title 14 Section 1.73).		

TABLE 2. 2018 Recreational management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 6 of 7)

B. MINIMUM SIZE (Inches) (See C.1)			
Area (when open)	Chinook	Coho	Pink
North of Cape Falcon	24	16	None
Cape Falcon to Humbug Mt.	24	16	None
Humbug Mt. to OR/CA Border	24	16	None
OR/CA Border to Horse Mt.	20	-	20
Horse Mt. to Pt. Arena	20	-	20
Pt. Arena to Pigeon Pt.	20	-	20
Pigeon Pt. to U.S./Mexico Border	24	-	24

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS

C.1. Compliance with Minimum Size and Other Special Restrictions: All salmon on board a vessel must meet the minimum size or other special requirements for the area being fished and the area in which they are landed if that area is open. Salmon may be landed in an area that is closed only if they meet the minimum size or other special requirements for the area in which they were caught. Salmon may not be filleted prior to landing.

Ocean Boat Limits: Off the coast of Washington, Oregon, and California, each fisher aboard a vessel may continue to use angling gear until the combined daily limits of Chinook and coho salmon for all licensed and juvenile anglers aboard have been attained (additional state restrictions may apply).

C.2. Gear Restrictions: Salmon may be taken only by hook and line using barbless hooks. All persons fishing for salmon, and all persons fishing from a boat with salmon on board, must meet the gear restrictions listed below for specific areas or seasons.

- a. *U.S./Canada Border to Pt. Conception, California*: No more than one rod may be used per angler; and no more than two single point, single shank barbless hooks are required for all fishing gear.
- b. *Horse Mt., California, to Pt. Conception, California*: Single point, single shank, barbless circle hooks (see gear definitions below) are required when fishing with bait by any means other than trolling, and no more than two such hooks shall be used. When angling with two hooks, the distance between the hooks must not exceed five inches when measured from the top of the eye of the top hook to the inner base of the curve of the lower hook, and both hooks must be permanently tied in place (hard tied). Circle hooks are not required when artificial lures are used without bait.

C.3. Gear Definitions:

- a. *Recreational fishing gear defined*: Off Oregon and Washington, angling tackle consists of a single line that must be attached to a rod and reel held by hand or closely attended; the rod and reel must be held by hand while playing a hooked fish. No person may use more than one rod and line while fishing off Oregon or Washington. Off California, the line must be attached to a rod and reel held by hand or closely attended; weights directly attached to a line may not exceed four pounds (1.8 kg). While fishing off California north of Pt. Conception, no person fishing for salmon, and no person fishing from a boat with salmon on board, may use more than one rod and line. Fishing includes any activity which can reasonably be expected to result in the catching, taking, or harvesting of fish.

- b. *Trolling defined*: Angling from a boat or floating device that is making way by means of a source of power, other than drifting by means of the prevailing water current or weather conditions.

- c. *Circle hook defined*: A hook with a generally circular shape and a point which turns inward, pointing directly to the shank at a 90° angle.

TABLE 2. 2018 Recreational management Alternatives for non-Indian ocean salmon fisheries - Council adopted. (Page 7 of 7)

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS (continued)**C.4. Control Zone Definitions:**

- a. *The Bonilla-Tatoosh Line*: A line running from the western end of Cape Flattery to Tatoosh Island Lighthouse (48°23'30" N. lat., 124°44'12" W. long.) to the buoy adjacent to Duntze Rock (48°24'37" N. lat., 124°44'37" W. long.), then in a straight line to Bonilla Pt. (48°35'39" N. lat., 124°42'58" W. long.) on Vancouver Island, British Columbia.
- b. *Grays Harbor Control Zone* - The area defined by a line drawn from the Westport Lighthouse (46° 53'18" N. lat., 124° 07'01" W. long.) to Buoy #2 (46° 52'42" N. lat., 124°12'42" W. long.) to Buoy #3 (46° 55'00" N. lat., 124°14'48" W. long.) to the Grays Harbor north jetty (46° 55'36" N. lat., 124°10'51" W. long.).
- c. *Columbia Control Zone*: An area at the Columbia River mouth, bounded on the west by a line running northeast/southwest between the red lighted Buoy #4 (46°13'35" N. lat., 124°06'50" W. long.) and the green lighted Buoy #7 (46°15'09" N. lat., 124°06'16" W. long.); on the east, by the Buoy #10 line which bears north/south at 357° true from the south jetty at 46°14'00" N. lat., 124°03'07" W. long. to its intersection with the north jetty; on the north, by a line running northeast/southwest between the green lighted Buoy #7 to the tip of the north jetty (46°15'48" N. lat., 124°05'20" W. long. and then along the north jetty to the point of intersection with the Buoy #10 line; and on the south, by a line running northeast/southwest between the red lighted Buoy #4 and tip of the south jetty (46°14'03" N. lat., 124°04'05" W. long.), and then along the south jetty to the point of intersection with the Buoy #10 line.
- d. *Stonewall Bank Yelloweye Rockfish Conservation Area*: The area defined by the following coordinates in the order listed:
 44°37.46' N. lat.; 124°24.92' W. long.
 44°37.46' N. lat.; 124°23.63' W. long.
 44°28.71' N. lat.; 124°21.80' W. long.
 44°28.71' N. lat.; 124°24.10' W. long.
 44°31.42' N. lat.; 124°25.47' W. long.
 and connecting back to 44°37.46' N. lat.; 124°24.92' W. long.
- e. *Klamath Control Zone*: The ocean area at the Klamath River mouth bounded on the north by 41°38'48" N. lat. (approximately 6 nautical miles north of the Klamath River mouth); on the west by 124°23'00" W. long. (approximately 12 nautical miles off shore); and, on the south by 41°26'48" N. lat. (approximately 6 nautical miles south of the Klamath River mouth).

C.5. Inseason Management: Regulatory modifications may become necessary inseason to meet preseason management objectives such as quotas, harvest guidelines, and season duration. In addition to standard inseason actions or modifications already noted under the season description, the following inseason guidance is provided to NMFS:

- a. Actions could include modifications to bag limits, or days open to fishing, and extensions or reductions in areas open to fishing.
- b. Coho may be transferred inseason among recreational subareas north of Cape Falcon to help meet the recreational season duration objectives (for each subarea) after conferring with representatives of the affected ports and the Council's SAS recreational representatives north of Cape Falcon, and if the transfer would not result in exceeding preseason impact expectations on any stocks.
- c. Chinook and coho may be transferred between the recreational and commercial fisheries north of Cape Falcon if there is agreement among the representatives of the SAS, and if the transfer would not result in exceeding preseason impact expectations on any stocks.
- d. Fishery managers may consider inseason action modifying regulations restricting retention of unmarked (adipose fin intact) coho. To remain consistent with preseason expectations, any inseason action shall consider, if significant, the difference between observed and preseason forecasted (adipose-clipped) mark rates. Such a consideration may also include a change in bag limit of two salmon, no more than one of which may be a coho.
- e. Marked coho remaining from the Cape Falcon to Humbug Mt. recreational mark-selective coho quota may be transferred inseason to the Cape Falcon to Humbug Mt. non-mark-selective recreational fishery if the transfer would not result in exceeding preseason impact expectations on any stocks.

C.6. Additional Seasons in State Territorial Waters: Consistent with Council management objectives, the States of Washington, Oregon, and California may establish limited seasons in state waters. Check state regulations for details.

TABLE 3. 2018 Treaty Indian troll management Alternatives for ocean salmon fisheries - Council adopted. (Page 1 of 2)

A. SEASON ALTERNATIVE DESCRIPTIONS		
ALTERNATIVE I	ALTERNATIVE II	ALTERNATIVE III
Supplemental Management Information	Supplemental Management Information	Supplemental Management Information
1. Overall Treaty-Indian TAC: 50,000 Chinook and 40,000 coho. 2. Overall Chinook and/or coho TACs may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries.	1. Overall Treaty-Indian TAC: 40,000 Chinook and 22,000 coho. 2. Overall Chinook and/or coho TACs may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries.	1. Overall Treaty-Indian TAC: 30,000 Chinook and 12,500 coho. 2. Overall Chinook and/or coho TAC may need to be reduced or fisheries adjusted to meet NMFS ESA guidance, FMP requirements, upon conclusion of negotiations in the North of Falcon forum, or upon receipt of preseason catch and abundance expectations for Canadian and Alaskan fisheries.
<ul style="list-style-type: none"> May 1 through the earlier of June 30 or 25,000 Chinook quota. All salmon may be retained except coho. If the Chinook quota is exceeded, the excess will be deducted from the later all-salmon season (C.5). See size limit (B) and other restrictions (C).	<ul style="list-style-type: none"> May 1 through the earlier of June 30 or 20,000 Chinook quota. All salmon may be retained except coho. If the Chinook quota is exceeded, the excess will be deducted from the later all-salmon season (C.5). See size limit (B) and other restrictions (C).	<ul style="list-style-type: none"> May 1 through the earlier of June 30 or 15,000 Chinook quota. All salmon may be retained except coho. If the Chinook quota is exceeded, the excess will be deducted from the later all-salmon season (C.5). See size limit (B) and other restrictions (C).
<ul style="list-style-type: none"> July 1 through the earlier of September 15, or 25,000 Chinook quota, or 40,000 coho quota. All Salmon. See size limit (B) and other restrictions (C).	<ul style="list-style-type: none"> July 1 through the earlier of September 15, or 20,000 Chinook quota or 22,000 coho quota All salmon. See size limit (B) and other restrictions (C).	<ul style="list-style-type: none"> July 1 through the earlier of September 15, or 15,000 Chinook quota or 12,500 coho quota. All salmon. See size limit (B) and other restrictions (C).

B. Minimum Length (total inches).

Area (when open)	Chinook		Coho		Pink
	Total Length	Head-off	Total Length	Head-off	
North of Cape Falcon	24.0 (61.0 cm)	18.0 (45.7 cm)	16.0 (40.6 cm)	12.0 (30.5 cm)	None

TABLE 3. 2018 Treaty Indian troll management Alternatives for ocean salmon fisheries - Council adopted. (Page 2 of 2)

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS

- C.1. Tribe and Area Boundaries. All boundaries may be changed to include such other areas as may hereafter be authorized by a Federal court for that tribe's treaty fishery.
- S'KLALLAM - Washington State Statistical Area 4B (defined to include those waters of Puget Sound easterly of a line projected from the Bonilla Point light on Vancouver Island to the Tatoosh Island light, thence to the most westerly point on Cape Flattery and westerly of a line projected true north from the fishing boundary marker at the mouth of the Sekiu River [WAC 220-301-030]).
- MAKAH - Washington State Statistical Area 4B and that portion of the FMA north of 48°02'15" N. lat. (Norwegian Memorial) and east of 125°44'00" W. long.
- QUILEUTE - A polygon commencing at Cape Alava, located at latitude 48°10'00" north, longitude 124°43'56.9" west; then proceeding west approximately forty nautical miles at that latitude to a northwestern point located at latitude 48°10'00" north, longitude 125°44'00" west; then proceeding in a southeasterly direction mirroring the coastline at a distance no farther than forty nautical miles from the mainland Pacific coast shoreline at any line of latitude, to a southwestern point at latitude 47°31'42" north, longitude 125°20'26" west; then proceeding east along that line of latitude to the Pacific coast shoreline at latitude 47°31'42" north, longitude 124°21'9.0" west.
- HOH - That portion of the FMA between 47°54'18" N. lat. (Quillayute River) and 47°21'00" N. lat. (Quinault River) and east of 125°44'00" W. long.
- QUINAULT - A polygon commencing at the Pacific coast shoreline near Destruction Island, located at latitude 47°40'06" north, longitude 124°23'51.362" west; then proceeding west approximately thirty nautical miles at that latitude to a northwestern point located at latitude 47°40'06" north, longitude 125°08'30" west; then proceeding in a southeasterly direction mirroring the coastline no farther than thirty nautical miles from the mainland Pacific coast shoreline at any line of latitude, to a southwestern point at latitude 46°53'18" north, longitude 124°53'53" west; then proceeding east along that line of latitude to the Pacific coast shoreline at latitude 46°53'18" north, longitude 124°7'36.6" west.
- * On March 5, 2018, the Federal District Court for the Western District of Washington issued an order to revise the western U&A boundaries for the Quileute and Quinault Tribes. Most notably, the western boundaries are at set distances from the coast, rather than following a line of longitude.*
- C.2. Gear restrictions
- Single point, single shank, barbless hooks are required in all fisheries.
 - No more than eight fixed lines per boat.
 - No more than four hand held lines per person in the Makah area fishery (Washington State Statistical Area 4B and that portion of the FMA north of 48°02'15" N. lat. (Norwegian Memorial) and east of 125°44'00" W. long.)
- C.3. Quotas
- The quotas include troll catches by the S'Klallam and Makah Tribes in Washington State Statistical Area 4B from May 1 through August 31.
 - The Quileute Tribe will continue a ceremonial and subsistence fishery during the time frame of October 1 through October 15 in the same manner as in 2004-2015. Fish taken during this fishery are to be counted against treaty troll quotas established for the 2018 season (estimated harvest during the October ceremonial and subsistence fishery: 20 Chinook; 40 coho).
- C.4. Area Closures
- The area within a six nautical mile radius of the mouths of the Queets River (47°31'42" N. lat.) and the Hoh River (47°45'12" N. lat.) will be closed to commercial fishing.
 - A closure within two nautical miles of the mouth of the Quinault River (47°21'00" N. lat.) may be enacted by the Quinault Nation and/or the State of Washington and will not adversely affect the Secretary of Commerce's management regime.
- C.5. Inseason Management: In addition to standard inseason actions or modifications already noted under the season description, the following inseason guidance is provided to NMFS:
- Chinook remaining from the May through June treaty-Indian ocean troll harvest guideline north of Cape Falcon may be transferred to the July through September harvest guideline on a fishery impact equivalent basis.

TABLE 4. 2018 Chinook and coho harvest quotas and guidelines (*) for ocean salmon fishery management Alternatives - Council adopted.

Fishery or Quota Designation	Chinook for Alternative			Coho for Alternative		
	I	II	III	I	II	III
NORTH OF CAPE FALCON						
TREATY INDIAN OCEAN TROLL ^{a/}						
U.S./Canada Border to Cape Falcon (All Except Coho)	25,000	20,000	15,000	-	-	-
U.S./Canada Border to Cape Falcon (All Species)	25,000	20,000	15,000	40,000	22,000	12,500
Subtotal Treaty Indian Ocean Troll	50,000	40,000	30,000	40,000	22,000	12,500
NON-INDIAN COMMERCIAL TROLL ^{b/}						
U.S./Canada Border to Cape Falcon (All Except Coho)	24,400	16,500	11,300	-	-	-
U.S./Canada Border to Cape Falcon (All Species)	8,100	11,000	11,200	5,600	5,600	3,200
Subtotal Non-Indian Commercial Troll	32,500	27,500	22,500	5,600	5,600	-
RECREATIONAL						
U.S./Canada Border to Cape Alava ^{b/}	5,800 *	4,900 *	4,000	4,370	3,060	1,750
Cape Alava to Queets River ^{b/}	1,800 *	1,500 *	1,300	1,090	760	440
Queets River to Leadbetter Pt. ^{b/}	15,400 *	13,100 *	10,600	15,540	10,880	6,210
Leadbetter Pt. to Cape Falcon ^{b/c/}	9,500 *	8,000 *	6,600	21,000	14,700	8,400
Subtotal Recreational	32,500	27,500	22,500	42,000	29,400	16,800
TOTAL NORTH OF CAPE FALCON	115,000	95,000	75,000	87,600	57,000	29,300
SOUTH OF CAPE FALCON						
COMMERCIAL TROLL ^{a/}						
Humbog Mt. to OR/CA Border	4,000	4,000	-	-	-	-
OR/CA Border to Humboldt South Jetty	12,000	10,000	17,000	-	-	-
Subtotal Commercial Troll	16,000	14,000	17,000	-	-	-
RECREATIONAL						
Cape Falcon to Humbog Mt.	-	-	-	24,500 ^{d/}	40,000 ^{e/}	9,800 ^{f/}
TOTAL SOUTH OF CAPE FALCON	16,000	14,000	17,000	24,500	40,000	9,800

a/ Quotas are non-mark selective for both Chinook and coho.

b/ Quotas are non-mark-selective for Chinook and mark-selective for coho.

c/ Does not include Buoy 10 fishery. Expected catch in August and September: Alternative I - 15,000 marked coho; Alternative II - 20,000 marked coho; Alternative III - 25,000 marked coho.

d/ The quota consists of both mark-selective and non-mark-selective coho quotas: 20,000 and 4,500 respectively.

e/ Quotas are mark-selective for coho.

f/ Quotas are non-mark-selective for coho.

TABLE 5. 2018 Projected key stock escapements (thousands of fish) or management criteria for ocean fishery Alternatives - Council adopted ^{a/} (Page 1 of 2)

Key Stock/Criteria	PROJECTED			2018
	Alt I	Alt II	Alt III	Criteria
CHINOOK	CHINOOK			CHINOOK
Columbia Upriver Brights	199.3	201.6	203.5	200.0 2018 ocean escapement (Council guidance). Minimum ocean escapement to attain 40.0 adults over McNary Dam, with normal distribution and no mainstem harvest. The management goal has been increased to 60.0 by Columbia River managers.
Mid-Columbia Brights	39.9	40.4	40.8	14.9 Minimum ocean escapement to attain 7.9 for Little White Salmon egg-take, assuming average conversion and no mainstem harvest.
Columbia Lower River Hatchery Tules	62.0	62.9	63.8	25.0 Minimum ocean escapement to attain 14.8 adults for hatchery egg-take, with average conversion and no lower river mainstem or tributary harvest.
Columbia Lower River Natural Tules ^{c/} (threatened)	41.0%	39.3%	37.4%	≤ 38.0% Total adult equivalent fishery exploitation rate (2018 NMFS ESA guidance).
Columbia Lower River Wild ^{ab/} (threatened)	7.6	7.7	7.7	6.9 Minimum ocean escapement to attain MSY spawner goal of 5.7 for N. Lewis River fall Chinook (NMFS ESA consultation standard).
Spring Creek Hatchery Tules	49.7	51.4	52.8	8.2 Minimum ocean escapement to attain 6.0 adults for Spring Creek Hatchery egg-take, assuming average conversion and no mainstem harvest.
Snake River Fall (threatened) SRFI	51.0%	47.0%	42.0%	≤ 70.0% Of 1988-1993 base period exploitation rate for all ocean fisheries (NMFS ESA consultation standard).
Klamath River Fall	40.7	43.6	47.1	40.7 2018 minimum natural area adult escapement (FMP control rule).
Federally recognized tribal harvest	50.0%	59.6%	50.0%	50.0% Equals 17.6, 17.6, and 12.1 (thousand) adult fish for Yurok and Hoopa Valley tribal fisheries. Under Alternative II: 2.9 (thousand) of the non-tribal share is being directed to escapement, thus resulting in a higher proportion of the catch being caught by the tribes (Council guidance).
Exploitation (spawner reduction) rate	31.9%	27.0%	21.2%	≤ 31.9% FMP control rule.
Adult river mouth return	93.5	94.3	94.2	NA Total adults in thousands.
Age-4 ocean harvest rate	8.4%	7.9%	9.0%	≤ 16.0% NMFS ESA consultation standard for threatened California Coastal Chinook.
KMZ sport fishery share	10.7%	10.7%	11.7%	NA Includes 0.0 (thousand) adult fish impacted in the KMZ sport fishery during fall (Sept-Dec) 2017.
River recreational fishery share	32.8%	15.0%	15.0%	NA Equals 5.8, 1.8, and 1.8 (thousand) adult fish for recreational river fisheries.
Sacramento River Winter (endangered)	10.6%	6.2%	3.6%	≤ 14.4% Age-3 ocean impact rate in fisheries south of Pt. Arena. In addition, the following season restrictions apply: <u>Recreational</u> - Pt. Arena to Pigeon Pt. between the first Saturday in April and the second Sunday in November; Pigeon Pt. to the U.S./Mexico border between the first Saturday in April and the first Sunday in October. Minimum size limit ≥ 20 inches total length. <u>Commercial</u> - Pt. Arena to the U.S./Mexico border between May 1 and September 30, except Pt. Reyes to Pt. San Pedro between October 1 and 15 (Monday-Friday). Minimum size limit ≥ 26 inches total length (NMFS 2018 ESA Guidance).
Sacramento River Fall	151.1	--	--	≥ 151.0 Alternative I: 2018 minimum hatchery and natural area adult escapement (Council guidance).
	--	164.9	--	≥ 165.0 Alternative II: 2018 minimum hatchery and natural area adult escapement (Council guidance).
	--	--	180.1	≥ 180.0 Alternative III: 2018 minimum hatchery and natural area adult escapement (Council guidance).
Sacramento Index Exploitation Rate	34.1%	28.1%	21.5%	≤ 46.8% FMP control rule.
Ocean commercial impacts	44.3	35.9	27.9	Includes fall (Sept-Dec) 2017 impacts (8.1 thousand SRFC).
Ocean recreational impacts	22.3	19.0	14.0	Includes fall 2017 impacts (3.2 thousand SRFC).
River recreational impacts	11.8	9.7	7.4	NA Equals 15.0%, 15.0%, and 15.0% of the total allowable harvest (Council guidance).

TABLE 5. Projected key stock escapements (thousands of fish) or management criteria for 2018 ocean fishery management measures - Council adopted.^{a/} (Page 2 of 2)

Key Stock/Criteria	PROJECTED			2018	
	Alt I	Alt II	Alt III	Criteria	Spaw ner Objective or Other Comparative Standard as Noted ^{b/}
COHO	COHO			COHO	
Interior Fraser (Thompson River)	10.2%(5.0%)	8.2%(3.0%)	6.9%(1.7%)	≤ 10.0%	2018 Southern U.S. exploitation rate ceiling; PSC coho agreement.
Skagit	10.6%(4.8%)	8.7%(2.8%)	7.5%(1.6%)	≤ 35.0%	2018 total exploitation rate ceiling; FMP matrix ^{d/}
Stillaguamish	9.6%(3.3%)	8.4%(2.0%)	7.5%(1.1%)	≤ 35.0%	2018 total exploitation rate ceiling; FMP matrix ^{d/}
Snohomish	21.0%(3.3%)	19.7%(2.0%)	18.9%(1.1%)	≤ 40.0%	2018 total exploitation rate ceiling; FMP matrix ^{d/}
Hood Canal	43.1%(5.0%)	41.9%(3.0%)	41.1%(1.7%)	≤ 65.0%	2018 total exploitation rate ceiling; FMP matrix ^{d/}
Strait of Juan de Fuca	7.0%(4.1%)	5.3%(2.4%)	4.7%(1.8%)	≤ 20.0%	2018 total exploitation rate ceiling; FMP matrix ^{d/}
Quillayute Fall	10.0	10.1	10.3	6.3	FMP MSY adult spaw ner estimate. Value depicted is ocean escapement.
Hoh	5.0	5.2	5.4	2.0	FMP MSY adult spaw ner estimate. Value depicted is ocean escapement.
Queets Wild	5.9	6.1	6.3	5.8	FMP MSY adult spaw ner estimate. Value depicted is ocean escapement.
Grays Harbor	39.4	40.2	40.7	35.4	FMP MSY adult spaw ner estimate. Value depicted is ocean escapement.
Willapa Bay Natural	18.7	19.1	19.6	17.2	FMP MSY adult spaw ner estimate. Value depicted is ocean escapement.
Low er Columbia River Natural (threatened)	11.1%	9.5%	5.9%	≤ 18.0%	Total marine and mainstem Columbia R. fishery exploitation rate (2018 NMFS ESA guidance). Value depicted is marine ER before Buoy 10.
Upper Columbia ^{c/}	≥ 50%	≥ 50%	≥ 50%	≥ 50%	Minimum percentage of the run to Bonneville Dam.
Columbia River Hatchery Early	118.6	110.6	130.5	77.2	Minimum ocean escapement to attain hatchery egg-take goal of 21.7 early adult coho, with average conversion and no mainstem or tributary fisheries.
Columbia River Hatchery Late	84.4	85.7	101.4	9.7	Minimum ocean escapement to attain hatchery egg-take goal of 6.4 late adult coho, with average conversion and no mainstem or tributary fisheries.
Oregon Coastal Natural	14.8%	12.7%	14.9%	≤ 15.0%	Marine and freshw ater fishery exploitation rate (NMFS ESA consultation standard).
Southern Oregon/Northern California Coast (threatened)	12.9%	12.9%	12.7%	≤ 13.0%	Marine fishery exploitation rate for R/K hatchery coho (NMFS ESA consultation standard).

a/ Projections in the table assume 2017 post season fishing effort scalars for coho in Canadian fisheries. Model results for Chinook in this table used 2017 preseason catches and fishing effort scalars and are updated with 2017 post season data if available. Assumptions for these fisheries will be changed prior to the April meeting as new information becomes available.

b/ Ocean escapement is the number of salmon escaping ocean fisheries and entering freshw ater with the follow ing clarifications. Ocean escapement for Puget Sound stocks is the estimated number of salmon entering Area 4B that are available to U.S. net fisheries in Puget Sound and spaw ner escapement after impacts from the Canadian, U.S. ocean, and Puget Sound troll and recreational fisheries have been deducted. Numbers in parentheses represent Council area exploitation rates for Puget sound coho stocks. For Columbia River early and late coho stocks, ocean escapement represents the number of coho after the Buoy 10 fishery. Exploitation rates for LCN coho include marine impacts only. Exploitation rates for OCN coho represent marine and freshw ater impacts. Values reported for Klamath River fall Chinook are natural area adult spaw ners. Values reported for Sacramento River fall Chinook are hatchery and natural area adult spaw ners.

c/ Includes projected impacts of inriver fisheries that have not yet been shaped.

d/ Annual management objectives may be different than FMP goals, and are subject to agreement between WDFW and the treaty tribes under U.S. District Court orders. It is anticipated that fishery management will be adjusted by state and tribal comanagers during the preseason planning process to comply with stock management objectives.

e/ Includes minor contributions from East Fork Lewis River and Sandy River.

TABLE 6. Preliminary projections of Chinook and coho harvest impacts for 2018 ocean salmon fishery management Alternatives - Council adopted. (Page 1 of 2)

Area and Fishery	2018 Catch Projection			2018 Bycatch Mortality ^{a/} Projection			2018 Bycatch Projection ^{b/}			Observed in 2017	
	I	II	III	I	II	III	I	II	III	Catch	Bycatch Mortality
OCEAN FISHERIES:											
CHINOOK (thousands of fish)											
NORTH OF CAPE FALCON											
Treaty Indian Ocean Troll	50.0	40.0	30.0	5.2	4.1	3.1	12.9	10.3	7.7	24.5	2.5
Non-Indian Commercial Troll	32.5	27.5	22.5	16.7	13.5	10.6	60.9	48.9	38.2	35.6	18.6
Recreational	32.5	27.5	22.5	5.4	4.5	3.8	28.6	23.9	19.9	21.9	3.7
CAPE FALCON TO HUMBUG MT.^{c/}											
Commercial Troll	47.7	40.9	29.9	19.4	16.6	12.2	60.1	51.4	37.6	18.9	3.5
Recreational	9.0	10.0	5.6	0.7	0.8	0.5	2.0	2.2	1.3	2.2	0.1
HUMBUG MT. TO OR/CA BORDER^{c/}											
Commercial Troll	4.9	4.3	0.3	2.0	1.8	0.1	6.2	5.5	0.4	0.3	0.1
Recreational	4.4	2.3	2.0	0.4	0.2	0.2	1.0	0.5	0.5	0.5	d/
OR/CA BORDER TO HORSE MT.											
Commercial Troll	12.0	10.0	17.0	4.9	4.1	6.9	15.1	12.6	21.4	-	-
Recreational	5.3	5.9	7.1	0.4	0.5	0.6	1.2	1.3	1.6	-	-
HORSE MT. TO PT. ARENA											
Commercial Troll	12.9	12.9	17.0	5.3	5.3	6.9	16.3	16.3	21.4	1.9	0.6 ^{e/}
Recreational	2.8	4.0	2.3	0.2	0.3	0.2	0.6	0.9	0.5	1.9	0.2 ^{e/}
PT. ARENA TO PIGEON PT.											
Commercial Troll	26.4	19.4	10.3	10.7	7.9	4.2	33.2	24.5	13.0	27.8	15.5 ^{e/}
Recreational	22.6	19.7	14.3	1.8	1.6	1.2	4.8	4.2	3.1	53.2	4.1 ^{e/}
SOUTH OF PIGEON PT.											
Commercial Troll	6.4	6.0	4.0	2.6	2.4	1.6	8.0	7.5	5.0	12.5	1.1 ^{e/}
Recreational	6.9	4.7	4.1	0.6	0.4	0.3	1.5	1.0	0.9	6.6	0.7 ^{e/}
TOTAL OCEAN FISHERIES											
Commercial Troll	192.8	161.0	131.0	66.8	55.7	45.6	212.7	176.9	144.7	121.6	41.9
Recreational	83.5	74.0	58.0	9.5	8.3	6.6	39.6	34.0	27.6	86.2	8.9
INSIDE FISHERIES:											
Area 4B	-	-	-	-	-	-	-	-	-	-	-
Buoy 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.3	1.1 ^{e/}

TABLE 6. Preliminary projections of Chinook and coho harvest impacts for 2018 ocean salmon fishery management Alternatives adopted by the Council. (Page 2 of 2)

Area and Fishery	2018 Catch Projection			2018 Bycatch Mortality ^{a/} Projection			2018 Bycatch Projection ^{b/}			Observed in 2017	
	I	II	III	I	II	III	I	II	III	Catch	Bycatch Mortality
COHO (thousands of fish)											
OCEAN FISHERIES:											
NORTH OF CAPE FALCON											
Treaty Indian Ocean Troll ^{f/}	40.0	22.0	12.5	3.2	2.0	1.3	6.4	4.7	3.3	13.3	1.6
Non-Indian Commercial Troll	5.6	5.6	3.2	5.3	4.1	2.6	19.2	14.5	9.1	1.8	2.0
Recreational	42.0	29.4	16.8	6.5	4.6	2.5	26.6	18.8	10.2	42.7	9.7
SOUTH OF CAPE FALCON											
Commercial Troll	-	-	-	4.0	4.0	4.7	16.6	15.3	18.2	-	1.3
Recreational ^{f/}	24.5	40.0	9.8	9.0	11.9	5.0	45.4	55.9	27.5	14.6	4.4
TOTAL OCEAN FISHERIES											
Commercial Troll	45.6	27.6	15.7	12.5	10.1	8.6	42.3	34.4	30.5	15.1	4.9
Recreational	66.5	69.4	26.6	15.5	16.5	7.5	72.0	74.7	37.7	57.3	14.1
INSIDE FISHERIES:											
Area 4B	-	-	-	-	-	-	-	-	-	-	-
Buoy 10	15.0	20.0	25.0	2.4	3.4	3.7	8.8	12.5	13.4	18.8	3.6 ^{e/}

a/ The bycatch mortality reported in this table consists of drop-off mortality (includes predation on hooked fish) plus hook-and-release mortality of Chinook and coho salmon in Council-area fisheries. Drop-off mortality for both Chinook and coho is assumed to be equal to 5% of total encounters. The hook-and-release mortality (HRM) rates used for both Chinook and coho are:

Commercial: 26%.

Recreational, north of Pt. Arena: 14%.

Recreational, south of Pt. Arena: 15% (based on the expected proportion of fish that will be caught using mooching versus trolling gear, and the HRMs of 42.2% and 14% for these two respective gear types).

b/ Bycatch calculated as dropoff mortality plus fish released.

c/ Includes Oregon territorial water, late season Chinook fisheries.

d/ Fewer than 50 fish.

e/ Based on reported released Chinook or coho.

f/ Includes fisheries that allow retention of all legal sized coho.

TABLE 7. Expected coastwide lower Columbia Natural (LCN), Oregon coastal natural (OCN), and Rogue/Klamath (RK) coho, and Lower Columbia River (LCR) natural tule Chinook exploitation rates by fishery for 2018 ocean fisheries management Alternatives - Council adopted.

Fishery	Exploitation Rate (Percent)											
	LCN Coho			OCN Coho			RK Coho			LCR Tule Chinook		
	I	II	III	I	II	III	I	II	III	I	II	III
SOUTHEAST ALASKA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%	2.1%
BRITISH COLUMBIA	0.1%	0.1%	0.1%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	13.2%	13.4%	13.7%
PUGET SOUND/STRAIT	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.3%
NORTH OF CAPE FALCON												
Treaty Indian Ocean Troll	3.0%	1.7%	0.9%	0.7%	0.4%	0.2%	0.0%	0.0%	0.0%	2.7%	2.2%	1.7%
Recreational	3.0%	2.1%	1.1%	0.6%	0.4%	0.2%	0.0%	0.0%	0.0%	5.9%	5.2%	4.3%
Non-Indian Troll	1.2%	1.0%	0.6%	0.3%	0.2%	0.1%	0.0%	0.0%	0.0%	6.9%	6.1%	5.1%
SOUTH OF CAPE FALCON												
Recreational:										0.2%	0.2%	0.1%
Cape Falcon to Humbug Mt.	2.8%	3.6%	2.1%	6.8%	5.5%	8.2%	0.5%	0.5%	0.4%	-	-	-
Humbug Mt. to OR/CA border (KMZ)	0.1%	0.0%	0.0%	0.5%	0.2%	0.1%	1.1%	0.6%	0.2%	-	-	-
OR/CA border to Horse Mt. (KMZ)	0.1%	0.1%	0.1%	0.7%	0.8%	1.0%	3.5%	4.5%	4.9%	-	-	-
Fort Bragg	0.0%	0.0%	0.0%	0.5%	0.7%	0.3%	2.0%	2.6%	1.7%	-	-	-
South of Pt. Arena	0.1%	0.0%	0.0%	0.6%	0.4%	0.2%	1.7%	1.1%	0.7%	-	-	-
Troll:										1.3%	1.1%	1.2%
Cape Falcon to Humbug Mt.	0.5%	0.4%	0.4%	0.6%	0.6%	0.5%	0.1%	0.1%	0.1%	-	-	-
Humbug Mt. to OR/CA border (KMZ)	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.2%	0.2%	0.0%	-	-	-
OR/CA border to Horse Mt. (KMZ)	0.1%	0.2%	0.3%	0.9%	0.9%	1.6%	3.0%	2.5%	4.0%	-	-	-
Fort Bragg	0.0%	0.0%	0.0%	0.2%	0.2%	0.3%	0.5%	0.5%	0.5%	-	-	-
South of Pt. Arena	0.0%	0.0%	0.0%	0.4%	0.3%	0.1%	0.2%	0.1%	0.0%	-	-	-
BUOY 10	1.7%	2.5%	2.5%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	8.5%	8.8%	9.1%
ESTUARY/FRESHWATER	NA	NA	NA	1.5%	1.6%	1.5%	NA	NA	NA			
TOTAL ^{a/}	11.1%	9.5%	5.9%	14.8%	12.7%	14.9%	12.9%	12.9%	12.7%	41.0%	39.3%	37.4%

a/ Totals do not include estuary/freshwater for LCN and RK coho; estuary/freshwater catch is included in the total for OCN. Bolded values identify ocean exploitation rates that, when combined with 2017 freshwater harvest rates, will exceed the total allowable exploitation rate.

TABLE 8. Projected coho mark rates for 2018 fisheries under base period fishing patterns (percent marked).

Area	Fishery	June	July	August	September
Canada					
Johnstone Strait	Recreational	-	41%	36%	-
West Coast Vancouver Island	Recreational	56%	50%	59%	67%
North Georgia Strait	Recreational	62%	64%	63%	60%
South Georgia Strait	Recreational	48%	65%	57%	61%
Juan de Fuca Strait	Recreational	54%	54%	54%	54%
Johnstone Strait	Troll	69%	62%	39%	58%
NW Vancouver Island	Troll	57%	49%	48%	39%
SW Vancouver Island	Troll	59%	55%	55%	55%
Georgia Strait	Troll	68%	67%	68%	64%
Puget Sound					
Strait of Juan de Fuca (Area 5)	Recreational	59%	55%	53%	53%
Strait of Juan de Fuca (Area 6)	Recreational	58%	52%	52%	50%
San Juan Island (Area 7)	Recreational	51%	60%	58%	44%
North Puget Sound (Areas 6 & 7A)	Net	-	56%	60%	52%
Council Area					
Neah Bay (Area 4/4B)	Recreational	48%	58%	55%	61%
LaPush (Area 3)	Recreational	60%	60%	64%	50%
Westport (Area 2)	Recreational	70%	69%	67%	64%
Columbia River (Area 1)	Recreational	79%	79%	73%	76%
Tillamook	Recreational	70%	66%	61%	54%
New port	Recreational	67%	63%	60%	49%
Coos Bay	Recreational	59%	55%	46%	32%
Brookings	Recreational	54%	41%	37%	18%
Neah Bay (Area 4/4B)	Troll	55%	56%	56%	58%
LaPush (Area 3)	Troll	55%	59%	56%	57%
Westport (Area 2)	Troll	56%	61%	65%	62%
Columbia River (Area 1)	Troll	73%	72%	71%	67%
Tillamook	Troll	65%	64%	65%	61%
New port	Troll	64%	62%	60%	59%
Coos Bay	Troll	59%	56%	51%	38%
Brookings	Troll	47%	48%	51%	60%
Columbia River					
Buoy 10	Recreational	-	-	-	72%

TABLE 9. Preliminary projected exvessel value under Council-adopted 2018 non-Indian commercial troll regulatory Alternatives compared to 2017 and the 2013-2017 average (in inflation adjusted dollars).

Management Area	Alternative	Exvessel Value (thousands of dollars) ^{a/}				
		2018 Projected ^{b/}	2017 Actual	Percent Change from 2017	2013-2017 Average	Percent Change From 2013-2017 Average
North of Cape Falcon	I	2,960	3,179	-7%	3,340	-11%
	II	2,519		-21%		-25%
	III	2,038		-36%		-39%
Cape Falcon to Humbug Mt.	I	4,538	1,804	+152%	6,486	-30%
	II	3,887		+115%		-40%
	III	2,840		+57%		-56%
Humbug Mt. to OR/CA Border ^{c/}	I	530	36	+1,380%	430	+23%
	II	471		+1,215%		+9%
	III	37		+4%		-91%
OR/CA Border to Horse Mt.	I	1,134	0	-	152	+645%
	II	945		-		+521%
	III	1,606		-		+955%
Horse Mt. to Pt. Arena	I	1,275	192	+564%	4,197	-70%
	II	1,275		+564%		-70%
	III	1,675		+772%		-60%
Pt. Arena to Pigeon Pt.	I	2,979	3,161	-6%	5,593	-47%
	II	2,196		-31%		-61%
	III	1,164		-63%		-79%
South of Pigeon Pt.	I	812	1,591	-49%	1,481	-45%
	II	761		-52%		-49%
	III	507		-68%		-66%
Total South of Cape Falcon	I	11,268	6,785	+66%	18,339	-39%
	II	9,535		+41%		-48%
	III	7,831		+15%		-57%
West Coast Total	I	14,228	9,964	+43%	21,679	-34%
	II	12,054		+21%		-44%
	III	9,869		-1%		-54%

a/ Values are inflation-adjusted to 2017 dollars. Exvessel values are not comparable to the income impacts shown in Table 10.

b/ Projections are based on expected catches in the Council management area and estimated 2017 average weights and exvessel prices.

c/ Commercial salmon fishing is closed in federal waters of this area in Alternative III. Projected exvessel values solely a potential Oregon state-waters-only late season fishery. Any resulting landings would be made in Oregon ports.

TABLE 10. Preliminary projected angler trips and coastal community income impacts generated under Council-adopted 2018 recreational ocean salmon fishery regulatory Alternatives compared to 2017 and the 2013-2017 average (in inflation adjusted dollars).

Management Area	Alternative	Angler Trips (thousands)			Community Income Impacts (thousands of dollars) ^{a/}			Percent Change in Income Impacts	
		Estimates Based on the Options	2017 Actual	2013-2017 Avg.	Estimates Based on the Options	2017 Actual	2013-2017 Avg.	Compared to 2017	Compared to 2013-2017 Avg.
North of Cape Falcon ^{b/}	I	72.5	67.2	85.6	11,259	10,432	18,029	+8%	-38%
	II	53.7			8,330			-20%	-54%
	III	34.8			5,400			-48%	-70%
Cape Falcon to Humbug Mt.	I	64.0	31.7	52.4	4,722	2,341	5,379	+102%	-12%
	II	70.2			5,182			+121%	-4%
	III	32.4			2,391			+2%	-56%
Humbug Mt. to OR/CA Border	I	14.0	2.0	10.5	1,033	149	972	+594%	+6%
	II	7.8			575			+286%	-41%
	III	6.5			482			+224%	-50%
OR/CA Border to Horse Mt.	I	11.1	0.0	13.7	821	0	2,668	-	-69%
	II	13.1			970			-	-64%
	III	15.6			1,154			-	-57%
Horse Mt. to Pt. Arena	I	8.7	4.7	12.2	1,475	793	2,903	+86%	-49%
	II	12.1			2,045			+158%	-30%
	III	7.3			1,231			+55%	-58%
Pt. Arena to Pigeon Pt.	I	50.6	53.8	53.5	13,064	15,590	19,611	-16%	-33%
	II	43.7			11,275			-28%	-43%
	III	31.3			8,086			-48%	-59%
South of Pigeon Pt.	I	31.1	15.1	19.2	8,034	2,186	3,666	+268%	+119%
	II	21.8			5,630			+158%	+54%
	III	19.0			4,898			+124%	+34%
Total South of Cape Falcon	I	179.5	107.3	161.5	29,148	21,058	35,200	+38%	-17%
	II	168.7			25,678			+22%	-27%
	III	112.1			18,242			-13%	-48%
West Coast Total	I	252.0	174.5	247.0	40,408	31,490	53,229	+28%	-24%
	II	222.4			34,007			+8%	-36%
	III	146.9			23,642			-25%	-56%

a/ Income impacts are not comparable to the exvessel values shown in Table 9. All dollar values are expressed in inflation-adjusted 2017 dollars.

b/ Does not include Buoy 10 fishery.

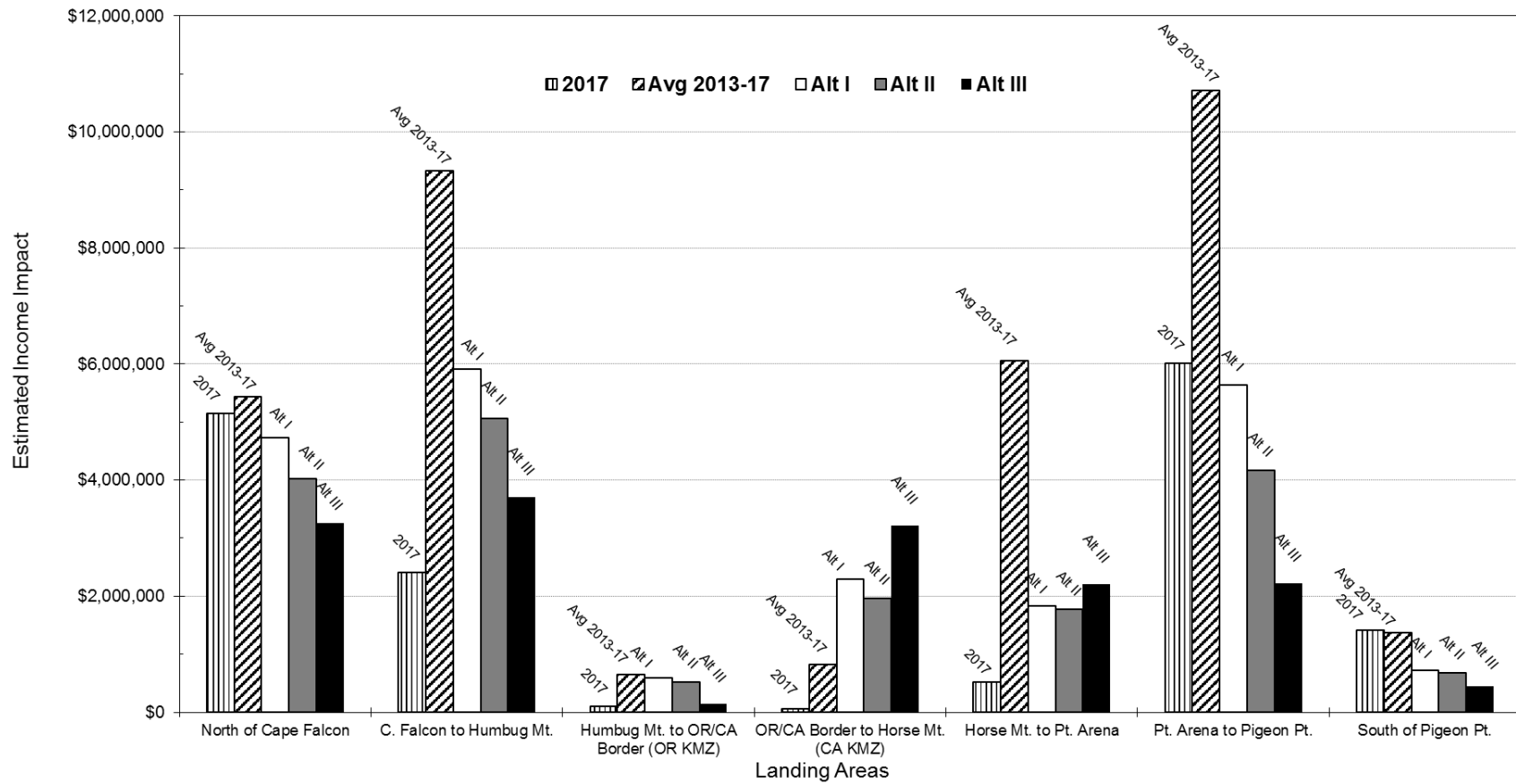


FIGURE 1. Projected community income impacts associated with landings projected under the Council adopted 2018 commercial fishery Alternatives compared to 2017 and the 2013-2017 average (in inflation-adjusted dollars).

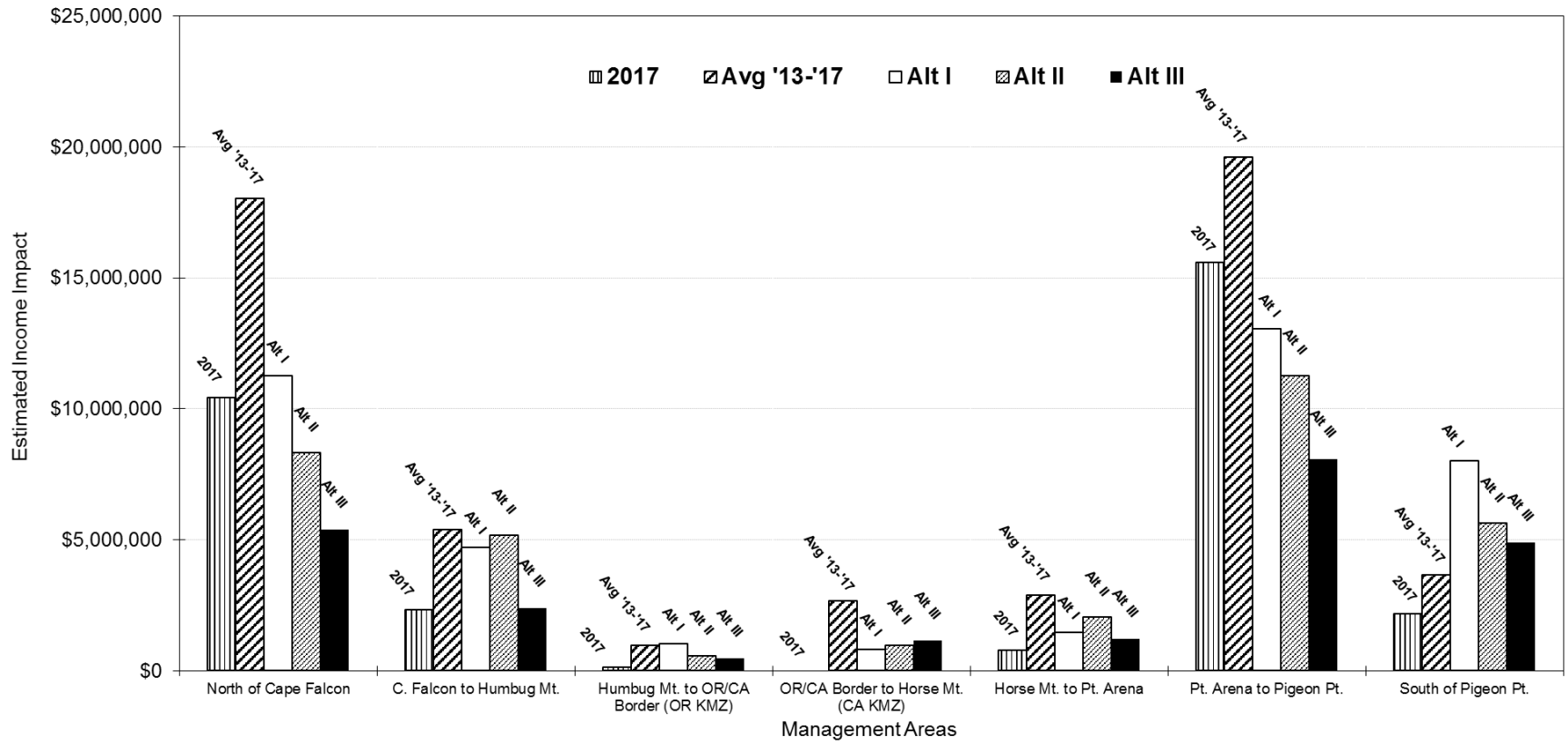


FIGURE 2. Projected community income impacts associated with angler effort projected under the Council adopted 2018 recreational fishery Alternatives compared to 2017 and the 2013-2017 average (in inflation-adjusted dollars).

APPENDIX A: PROJECTED IMPACTS FOR AGE-3 SACRAMENTO RIVER WINTER CHINOOK, KLAMATH RIVER FALL CHINOOK, AND SACRAMENTO RIVER FALL CHINOOK.

Table A-1. Sacramento River winter run Chinook age-3 ocean impact rate south of Pt. Arena by fishery and Alternative. The age-3 SRWC impact rate was projected for each of the proposed 2018 fishing season Alternatives. The impacts are displayed as a percent for each Alternative by fishery, port area, and month. Max rate: 14.4.

Commercial											Recreational										
Alternative I 10.6 Total											Alternative I										
Port										Year	Port										Year
Area	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total		Area	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SF		0.37		0.64	0.13	0.06			1.19		SF			0.89	1.89	0.77	0.10	0.23			3.88
MO	0.25								0.25		MO	0.82	0.60	1.16	2.73						5.30
Total	0.25	0.37		0.64	0.13	0.06			1.44		Total	0.82	0.60	2.05	4.62	0.77	0.10	0.23			9.18
Alternative II 6.2 Total											Alternative II										
Port										Year	Port										Year
Area	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total		Area	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SF				0.67	0.13	0.06			0.87		SF				1.92	0.81	0.11	0.25			3.09
MO	0.24								0.24		MO	0.82	0.60	0.58							1.99
Total	0.24			0.67	0.13	0.06			1.10		Total	0.82	0.60	0.58	1.92	0.81	0.11	0.25			5.08
Alternative III 3.6 Total											Alternative III										
Port										Year	Port										Year
Area	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total		Area	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SF					0.14	0.07			0.20		SF				0.69	0.82	0.11	0.25			1.88
MO	0.16								0.16		MO	0.82	0.60								1.41
Total	0.16				0.14	0.07			0.36		Total	0.82	0.60		0.69	0.82	0.11	0.25			3.29

SF Pt. Arena to Pigeon Pt. (San Francisco)
 MO Pigeon Pt. to the U.S./Mexico Border (Monterey)

Table A-2. Klamath River fall Chinook ocean impacts in numbers of fish by fishery and Alternative.

Commercial											Recreational												
Alternative I											Alternative I												
40,700 natural area spawners, 31.9% spawner reduction rate, 8.4% age-4 ocean harvest rate																							
Port	Fall 2017			Summer 2018						Summer	Year	Port	Fall 2017			Summer 2018						Summer	Year
Area	Sep	Oct-Dec	Mar	Apr	May	Jun	Jul	Aug	Total	Total	Area	Sep	Oct	Nov-Dec	Mar	Apr	May	Jun	Jul	Aug	Total	Total	
NO	0	0			82	38	92	271	483	483	NO	0	0		0	0	0	0	33	38	71	71	
CO		0			174	219	574	1,404	2,371	2,371	CO	0	0	0	0	0	5	16	71	54	146	146	
KO		0			36	199	506	142	883	883	KO		0				3	75	178	259	515	515	
KC						1,247	1,238	1,370	3,855	3,855	KC							180	466	174	820	820	
FB	195							1,743	1,743	1,938	FB	0	0	0					157	68	225	225	
SF	36	0				758		578	1,336	1,372	SF	0	0					131	213	11	355	355	
MO					190				190	190	MO					48	10	18	41		117	117	
Total	231	0			480	2,461	2,411	5,509	10,861	11,092	Total	0	0	0	0	48	18	420	1,158	605	2,249	2,249	
Alternative II											Alternative II												
43,596 natural area spawners, 27.0% spawner reduction rate, 7.9% age-4 ocean harvest rate																							
Port	Fall 2017			Summer 2018						Summer	Year	Port	Fall 2017			Summer 2018						Summer	Year
Area	Sep	Oct-Dec	Mar	Apr	May	Jun	Jul	Aug	Total	Total	Area	Sep	Oct	Nov-Dec	Mar	Apr	May	Jun	Jul	Aug	Total	Total	
NO	0	0			55	30	73	273	431	431	NO	0	0		0	0	0	0	33	56	89	89	
CO		0			118	172	456	1,412	2,158	2,158	CO	0	0	0	0	0	5	16	71	62	154	154	
KO		0				199	507	142	848	848	KO		0					42	86	90	218	218	
KC					700	1,247	619	685	3,251	3,251	KC								467	451	918	918	
FB	195							1,754	1,754	1,949	FB	0	0	0					287	68	355	355	
SF	36	0						582	582	618	SF	0	0						214	11	225	225	
MO					178				178	178	MO					48	10	9			67	67	
Total	231	0			1,052	1,648	1,654	4,849	9,203	9,434	Total	0	0	0	0	48	15	68	1,158	739	2,028	2,028	
Alternative III											Alternative III												
47,080 natural area spawners, 21.2% spawner reduction rate, 9.0% age-4 ocean harvest rate																							
Port	Fall 2017			Summer 2018						Summer	Year	Port	Fall 2017			Summer 2018						Summer	Year
Area	Sep	Oct-Dec	Mar	Apr	May	Jun	Jul	Aug	Total	Total	Area	Sep	Oct	Nov-Dec	Mar	Apr	May	Jun	Jul	Aug	Total	Total	
NO	0	0			46	29	73	272	420	420	NO	0	0		0	0	0	0	1	11	12	12	
CO		0			97	170	452	1,410	2,129	2,129	CO	0	0	0	0	0	5	14	14	42	75	75	
KO		0									KO		0				3	75	23		101	101	
KC					1,751	1,560	619	685	4,615	4,615	KC							243	465	450	1,158	1,158	
FB	195							2,391	2,391	2,586	FB	0	0	0					101	68	169	169	
SF	36	0								36	SF	0	0						75	11	86	86	
MO					118				118	118	MO					48	10				58	58	
Total	231	0			2,013	1,759	1,143	4,758	9,673	9,904	Total	0	0	0	0	48	18	332	679	583	1,660	1,660	

NO Cape Falcon to S. End of Heceta Bank
 CO S. End of Heceta Bank to Humbug Mt.
 KO Humbug Mt. to OR/CA Border (Oregon KMZ)
 KC OR/CA Border to Horse Mt. (California KMZ)

FB Horse Mt. to Pt. Arena (Fort Bragg)
 SF Pt. Arena to Pigeon Pt. (San Francisco)
 MO Pigeon Pt. to U.S./Mexico Border (Monterey)

Table A-3. Sacramento River fall Chinook ocean impacts in numbers of fish by fishery and Alternative.

Commercial											Recreational										
Alternative I 66,556 Total											Alternative I										
Port Area	Fall 2017		Summer 2018						Summer Total	Year Total	Port Area	Fall 2017		Summer 2018						Summer Total	Year Total
	Sep	Oct-Dec	Mar	Apr	May	Jun	Jul	Aug				Sep	Oct	Nov-Dec	Mar	Apr	May	Jun	Jul	Aug	
NO	0	0			1,710	1,128	1,686	1,610	6,134	6,134	NO	37	0		4	2	4	9	154	95	268
CO		0			1,427	1,539	865	939	4,770	4,770	CO	0	0	0	1	2	6	41	181	189	420
KO		0			279	342	547	85	1,253	1,253	KO		0				41	103	189	117	450
KC						446	1,122	591	2,159	2,159	KC							204	545	154	903
FB	934							4,022	4,022	4,956	FB	225	0	0					661	412	1,073
SF	6,229	891						5,277	7,175	12,452	SF	2,341	548					1,987	5,348	3,007	10,342
MO					5,412				5,412	5,412	MO					2,614	870	962	1,248		5,694
Total	7,163	891			8,828	8,733	4,219	14,421	36,201	44,255	Total	2,603	548		5	2,618	921	3,306	8,326	3,974	19,150
Alternative II 54,833 Total											Alternative II										
Port Area	Fall 2017		Summer 2018						Summer Total	Year Total	Port Area	Fall 2017		Summer 2018						Summer Total	Year Total
	Sep	Oct-Dec	Mar	Apr	May	Jun	Jul	Aug				Sep	Oct	Nov-Dec	Mar	Apr	May	Jun	Jul	Aug	
NO	0	0			1,163	893	1,335	1,610	5,001	5,001	NO	37	0		4	2	4	9	154	138	311
CO		0			971	1,219	685	939	3,814	3,814	CO	0	0	0	1	2	6	41	181	216	447
KO		0				342	547	85	974	974	KO		0					58	92	41	191
KC					441	446	561	295	1,743	1,743	KC								545	397	942
FB	934							4,022	4,022	4,956	FB	225	0	0					1,206	412	1,618
SF	6,229	891						7,175	7,175	14,295	SF	2,341	548					5,348	3,007		8,355
MO					5,073				5,073	5,073	MO					2,614	870	481			3,965
Total	7,163	891			7,648	2,900	3,127	14,125	27,800	35,854	Total	2,603	548		5	2,618	880	590	7,525	4,210	15,828
Alternative III 41,924 Total											Alternative III										
Port Area	Fall 2017		Summer 2018						Summer Total	Year Total	Port Area	Fall 2017		Summer 2018						Summer Total	Year Total
	Sep	Oct-Dec	Mar	Apr	May	Jun	Jul	Aug				Sep	Oct	Nov-Dec	Mar	Apr	May	Jun	Jul	Aug	
NO	0	0			958	893	1,335	1,610	4,796	4,796	NO	37	0		4	2	4	7	7	28	52
CO		0			799	1,219	685	939	3,642	3,642	CO	0	0	0	1	2	6	35	35	146	225
KO		0									KO		0				41	103	24		168
KC					1,102	558	561	295	2,516	2,516	KC							278	545	397	1,220
FB	934							5,491	5,491	6,425	FB	225	0	0					428	412	840
SF	6,229	891								7,120	SF	2,341	548						1,898	3,007	4,905
MO					3,382				3,382	3,382	MO					2,614	870				3,484
Total	7,163	891			6,241	2,670	2,580	8,335	19,826	27,880	Total	2,603	548		5	2,618	921	423	2,936	3,990	10,893

NO Cape Falcon to S. End of Heceta Bank

CO S. End of Heceta Bank to Humbug Mt.

KO Humbug Mt. to OR/CA Border (Oregon KMZ)

KC OR/CA Border to Horse Mt. (California KMZ)

FB Horse Mt. to Pt. Arena (Fort Bragg)

SF Pt. Arena to Pigeon Pt. (San Francisco)

MO Pigeon Pt. to U.S./Mexico Border (Monterey)

APPENDIX B: NEPA AND ESA ANALYSES INCORPORATED BY REFERENCE

Several documents supporting the analyses of effects to the environment from the Alternatives have been incorporated by reference. Those documents are described and passages relevant to analyses contained in this EA are excerpted below.

NMFS 2003: West Coast Salmon Harvest Programmatic EIS

This document evaluates how NMFS reviews annual salmon fishery plans in three jurisdictions, the North Pacific Fishery Management Council for Southeast Alaska; the Pacific Fishery Management Council for the Washington, Oregon, and California coast; and *U.S. v. Oregon* for the Columbia River Basin. In general, NMFS seeks to implement fisheries that are consistent with a variety of statutory and legal obligations related to resource conservation, socioeconomic benefits associated with resource use, and treaty trust obligations. Fishery plans are developed annually within the context of framework plans to meet the year-specific circumstances related to the status of stocks affected by the fisheries. This final PEIS evaluates different ways to balance these objectives and different strategies that can be used that may provide better solutions for meeting the obligations and objectives of the respective framework plans. The Alternatives considered in this final PEIS are programmatic in nature and are designed to provide an overview of fishery management methods and strategies that can be implemented as part of the annual planning processes.

This document includes the following statements relative to Council area salmon fisheries:

While the levels of salmon catch fluctuate from year to year, the amount of groundfish taken as incidental catch is very low so that changes in the salmon fishery do not substantially alter the projections for harvest-related mortality in the groundfish fishery.

Other Council managed species such as halibut, highly migratory species (draft FMP), and coastal pelagic species are also landed jointly with salmon. For all of these stocks, fish caught on the same trip with salmon are documented. Data on the commercial segment of these fisheries show the co-occurrence rates for salmon and these other Council-managed species is low, as well as for non-Council-managed species. Changes in the salmon fishery are not expected to have a substantial impact on the directed fisheries for the non-salmon stocks

The commercial troll fishery off the coasts of Washington, Oregon, and California is classified as a Category III fishery, indicating a remote or no likelihood of known incidental mortality or serious injury of marine mammals. In general, recreational fishery uses the same gear and techniques as the commercial fisheries and can be assumed to have similar rates of encounters and results.

After excluding ESA listed marine mammals, only three species of marine mammals are defined as strategic under MMPA within the coverage area: short-finned pilot whales, mesoplodont beaked whales, and Minke whales (Barlow et al. 1997). This strategic classification denotes that projected human-caused mortality exceeds the species' annual potential biological removal estimate under MMPA standards. As with ESA listed marine mammal species, there is no record of these three species being affected by the ocean salmon fisheries managed by the Council.

Steller sea lion interaction with the Pacific Coast salmon fisheries is rare and NMFS has determined mortality and serious injury incidental to commercial fishing operations would have a negligible effect.¹ Available information indicates that Pacific Coast salmon fisheries are not likely

¹ The eastern DPS of Steller sea lions was delisted under the ESA on November 4, 2013 (78 FR 66140).

to jeopardize the existence of the Guadalupe fur seal. No sea turtles have been reported taken by the ocean salmon fisheries off Washington, Oregon, or California. NMFS has determined that commercial fishing by Pacific Coast fisheries would pose a negligible threat to the Pacific species.

Short-term effects on seabirds are minimal, if any. The types of vessels used in the fishery and the conduct of the vessels are not conducive to collisions or the introduction of rats other non-indigenous species to seabird breeding colonies. Anecdotal information suggests accidental bird encounters are a rare event for commercial and recreational ocean salmon fisheries (Council 1999a). Long-term effects on seabirds from the ocean salmon fisheries are also minimal.

The removal of adult salmon by the ocean fisheries is not considered to significantly affect the lower trophic levels or the overall marine ecosystem because salmon are not the only or primary predator in the marine environment.

PFMC 2006: EA for 2006 Ocean Salmon Management Measures

The 2006 regulations EA analyzes the environmental and socioeconomic impacts of proposed management measures for ocean salmon fisheries occurring off the coasts of Washington, Oregon, and California. The document evaluated the 2006 annual salmon ocean harvest management measures with respect to compliance with the terms of the Salmon FMP, obligations under the Pacific Salmon Treaty (PST), and the level of protection required by all consultation standards for salmon species listed under the ESA. The range of alternatives analyzed in the 2006 Regulations EA included the effects of three levels of *de minimis* fishing strategies on KRFC when the stock was projected to fall below the 35,000 natural spawner floor for the third consecutive year. The escapement floor for naturally spawning KRFC was projected to not be attained even with complete closure of ocean salmon fisheries between Cape Falcon, Oregon, and Point Sur, California; therefore, the management measures required implementation by emergency rule. The NMFS-recommended 2006 salmon fishery management measures did not completely close fisheries between Cape Falcon and Point Sur, but limited fisheries to provide a minimum of 21,100 natural spawning adult KRFC in 2006. The 2006 EA supported NMFS' Finding of No Significant Impacts (FONSI) for the 2006 ocean salmon regulations.

Appendix A of Amendment 18 (EFH Appendix A) describes salmon EFH and fishing and non-fishing impacts to this habitat. It found no evidence of direct gear effects on this habitat from Council-managed salmon fisheries. ... Because EFH impacts are extensively described and analyzed in EFH Appendix A, and this analysis demonstrates the fishery has no significant impacts, EFH will not be considered further in this environmental assessment.

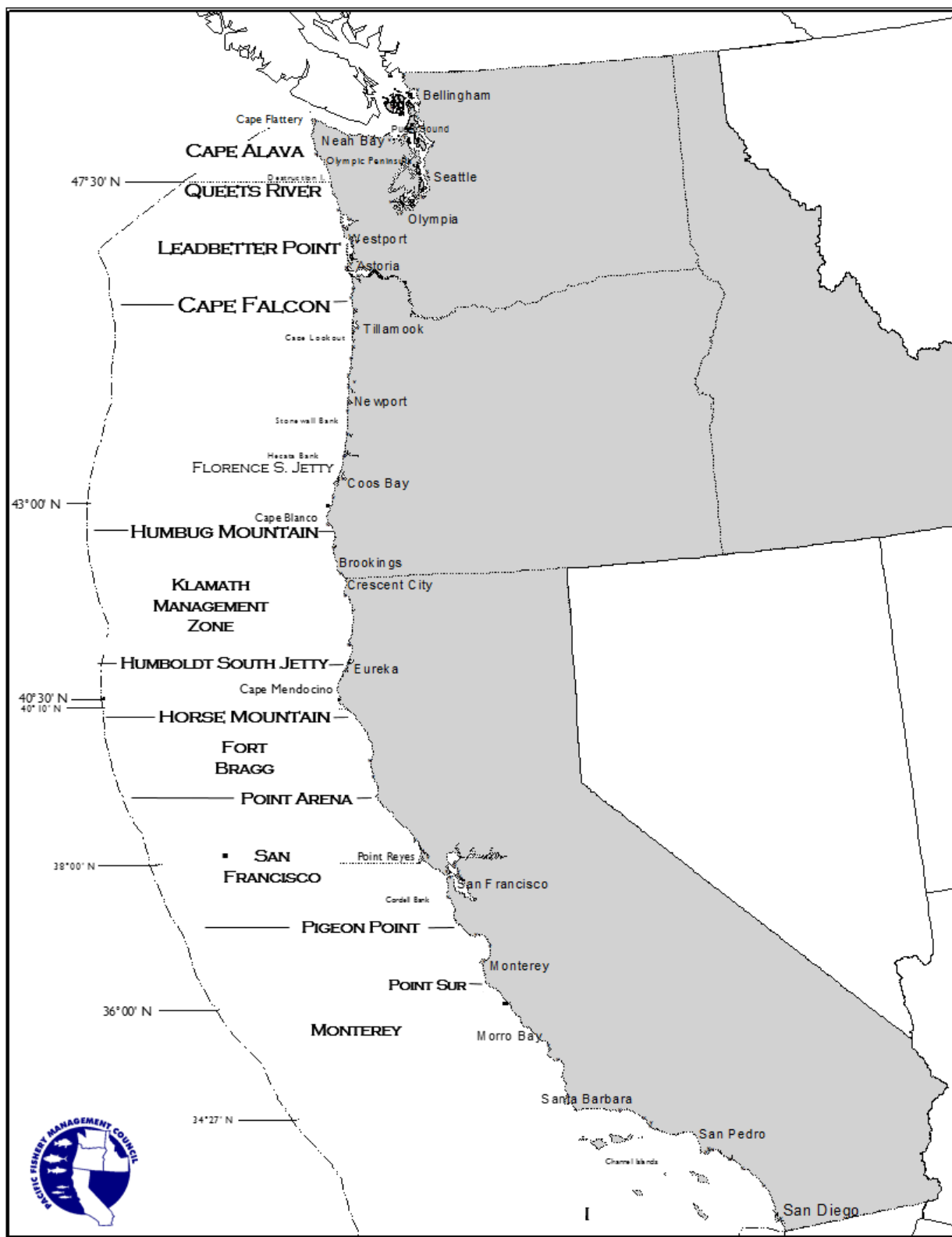
Fisheries management can affect safety if, for example, season openings make it more likely that fishermen will have to go out in bad weather because fishing opportunities are limited. The EA incorporated into Amendment 8 to the Salmon FMP analyzed alternatives to adjust management measures if unsafe weather affected fishery access. The range of management measures considered for the proposed action would be within the range described in that EA. Since these types of potential impacts have been previously analyzed and found not to be significant, they are not discussed in this EA.

NMFS 2009: Biological Opinion on Ocean Fisheries Effects on Southern Resident Killer Whales

This document constitutes the National Marine Fisheries Service's (NMFS) biological opinion (Opinion) regarding the effects of proposed Pacific coast ocean salmon fisheries conducted under the Pacific Coast Salmon Plan on the Southern Resident killer whale (*Orcinus orca*) distinct population segment. The fisheries assessed by this Opinion would be conducted in the U.S. Exclusive Economic Zone (EEZ) of the

Pacific Ocean. These fisheries are managed under the jurisdiction of the Pacific Fisheries Management Council (PFMC) and target primarily Chinook (*Oncorhynchus tshawytscha*) and coho salmon (*O. kisutch*), although pink salmon (*O. gorbuscha*) are taken incidentally during odd-numbered years (e.g., 2005, 2007).

After reviewing the current status of the endangered population of Southern Resident killer whales and their critical habitat, the environmental baseline for the action area, the effects of the proposed actions, and cumulative effects, it is NMFS's biological opinion that the proposed action is not likely to jeopardize the continued existence of the Southern Resident killer whales or adversely modify critical habitat.



This map is for reference only and is not intended for use in navigation or fishery regulation.