

1.0 INTRODUCTION

This document has been prepared by the staff of the Pacific Fishery Management Council (Council) and the Salmon Technical Team (STT) to describe the Council's proposed ocean salmon management options for 2008 and characterize their expected impacts on ocean salmon fisheries and the stocks which support them. The Council solicits public comments on the proposed management options in preparation for adopting final management recommendations at its April meeting. This report is analogous to a draft National Environmental Policy Act (NEPA) analysis of a range of alternatives for 2008 ocean salmon management measures.

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 comment will be accepted at the April Council meeting at the Seattle Marriott Hotel SeaTac, Seattle, Washington. Written comments received at the Council office by April 1, 2008 will be copied and distributed to all Council members (Council staff cannot assure distribution of comments received after April 1).

2.0 SELECTION OF FINAL MANAGEMENT MEASURES

The Council's final ocean salmon season recommendations will be based on the range of options 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, and from public hearings sponsored by the Council and the States of Washington, Oregon, and California. Final recommendations concerning catch quotas and exploitation rates may vary from the range of options 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 options may be recombined to alter season patterns; 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 regulations 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 significant 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 2008 Council meeting. At this point in the planning cycle, the STT's impact assessments reflect four key assumptions: (1) abundance levels for Canadian Chinook and coho stocks identical to 2007 forecasts; (2) 2008 catch levels for southeast Alaskan, north-central British Columbia, and West Coast Vancouver Island (WCVI) fisheries equal to 2007 catch ceilings established under the aggregate abundance based management (AABM) provisions of the 1999 Pacific Salmon Treaty (PST) Agreement (WCVI outside sport catch assumed to equal the 2007 observed level), with minimum size limits identical to those in place for 2007; (3) 2007 observed catch levels and size limits for Canadian fisheries operating under individual stock based management (ISBM) regimes pursuant to the 1999 PST agreement; and (4) base packages for management of southern U.S. inside fisheries. In mid-March, U.S. and Canadian fishery managers will exchange information regarding preseason expectations for fisheries and the status of Chinook and coho stocks. Following this exchange, the Pacific Salmon Commission's (PSC's) Chinook model will be calibrated by the PSC Chinook Technical Committee to determine the allowable catch ceilings under the 1999 PST agreement. Abundances and fishery expectations will be adjusted in the Council's fishery planning models, and inside fisheries will be shaped by state and tribal co-managers. The adjustments of stock abundances and fishery expectations, and the shaping of inside fisheries, may result in estimated stock impacts that differ from those presented in this

report. The final regulations adopted by the Council in April are intended to be consistent with Council's salmon fishery management plan (FMP) objectives, guidance provided by the National Marine Fisheries Service (NMFS), obligations under the PST, and other applicable law.

3.0 SALMON TECHNICAL TEAM CONCERNS

3.1 Oregon Coastal Chinook

The STT does not make a quantitative forecast of the Oregon coast fall Chinook. In the past, the STT has relied on the recent increasing trend in escapement, and the fact that the stock consistently met or exceeded its goal for many years, to justify an expectation that the stock would continue meet its conservation objective. The escapement index for north migrating Oregon coast fall Chinook has declined sharply for the past four years and the stocks failed to meet their post-season escapement goal in 2007 for the first time since 1983.

3.2 Need for Landing Requirements

The STT recommends that landing restrictions be employed to require landings within the area where the fish are caught. Unless such restrictions are adopted, fleet mobility increases the difficulty of inseason management, catch accountability, and collection of biological data such as genetic stock identification (GSI) samples or coded-wire-tag (CWT) recoveries.

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 or 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 (MSY), or exploitation rate limits designed to support recovery of depressed stocks while encompassing a long term average harvest approximating MSY.

Biological objectives can be modified through formal plan amendment, technical amendment, or regulatory amendment. For the 2008 management measures, an additional management objective for KRFC has been proposed by regulatory amendment. The current KRFC conservation objective requires a spawner reduction rate of no more than 67 percent and a minimum of 35,000 adults spawning in natural areas. The proposed regulatory amendment would require a minimum natural area spawning escapement of 40,700 adult KRFC as a preseason management objective in 2008, and possibly beyond. This proposal resulted from an STT assessment of KRFC after that stock triggered an Overfishing Concern by failing to meet the 35,000 natural area adult spawner objective in 2004-2006. The Council will take public comment on the proposed regulatory amendment, which includes other recommendations from the STT assessment (see Appendix A), and take final action at the April 2008 Council meeting under the 2008 ocean salmon management measures.

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 regards to biological conservation objectives. The Council considers the ESA requirements sufficient to meet the intent of FMP conservation objectives for the annual management measures as well

as the Magnuson-Stevens Act (MSA) overfishing provisions requiring rebuilding of depressed stocks to MSY levels. 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. Among the annual agreements reached by the co-managers in the North of Falcon forum are conservation objectives for Puget Sound and Washington coastal stocks. These objectives can supersede the Salmon FMP conservation objectives for annual management measures and for triggering a Conservation Alert; however, they cannot be used in place of the FMP objectives for determination of an Overfishing Concern; nor can they supersede ESA consultation standards. In recent years, the annual agreed to conservation objectives for Puget Sound and Washington coastal coho have been based on the 2002 PSC coho management agreement 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 harvest of KRFC, which is calculated as a harvest of KRFC equal to that taken in all non-Indian fisheries. 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 between commercial and recreational sectors, and among recreational port areas, and for coho south of Cape Falcon between commercial and recreational sectors. The 2008 salmon management measures adopted by the Council meet the allocation requirements for fisheries north of Cape Falcon in the Salmon FMP. The allocation provisions for the area south of Cape Falcon are also met, although the available coho impacts are less than the minimum required for distribution of directed harvest to the commercial sector. The Salmon FMP allows flexibility to provide some directed harvest to the commercial sector during the annual preseason process.

5.0 SPECIES LISTED UNDER THE ENDANGERED SPECIES ACT

Since 1989, NMFS listed the following 16 Evolutionarily Significant Units (ESUs) of salmon under the ESA:

Species	ESU	Status	Federal Register Notice
Chinook Salmon (<i>O. tshawytscha</i>)	Sacramento River Winter	Endangered	70 FR 37160 6/28/05
	Snake River Fall	Threatened	70 FR 37160 6/28/05
	Snake River Spring/Summer	Threatened	70 FR 37160 6/28/05
	Puget Sound	Threatened	70 FR 37160 6/28/05
	Lower Columbia River	Threatened	70 FR 37160 6/28/05
	Upper Willamette River	Threatened	70 FR 37160 6/28/05
	Upper Columbia River Spring	Endangered	70 FR 37160 6/28/05
	Central Valley Spring	Threatened	70 FR 37160 6/28/05
	California Coastal	Threatened	70 FR 37160 6/28/05
Chum Salmon (<i>O. keta</i>)	Hood Canal Summer-Run	Threatened	70 FR 37160 6/28/05
	Columbia River	Threatened	70 FR 37160 6/28/05
Coho Salmon (<i>O. kisutch</i>)	Central California Coastal	Endangered	70 FR 37160 6/28/05
	S. Oregon/ N. California Coastal	Threatened	70 FR 37160 6/28/05
	Oregon Coastal	Threatened	73 FR 7816 2/11/08
	Lower Columbia River	Threatened	70 FR 37160 6/28/05
Sockeye Salmon (<i>O. nerka</i>)	Snake River	Endangered	70 FR 37160 6/28/05
	Ozette Lake	Threatened	70 FR 37160 6/28/05

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
March 8, 1996	Snake River Chinook and sockeye (until reinitiated)
April 28, 1999	Southern Oregon/ Northern California coastal coho, Central California coastal coho (until reinitiated) ^{1/}
April 28, 2000	Central Valley spring Chinook (until reinitiated)
April 27, 2001	Hood Canal summer chum 4(d) limit (until reinitiated)
April 30, 2001	Upper Willamette Chinook, Upper Columbia spring Chinook, Lake Ozette sockeye, ten steelhead ESUs and Columbia River chum (until reinitiated)
April 27, 2004	Sacramento River winter Chinook (April 30, 2010)
March 4, 2005	Puget Sound Chinook (April 30, 2010)
June 13, 2005	California coastal Chinook (until reinitiated)
Expected Prior to May 1, 2008	Lower Columbia River natural coho, Lower Columbia River Chinook
Expected Prior to May 1, 2008	Oregon Coastal natural coho

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.

NMFS, in a letter received by the Council on February 26, 2008, provided guidance on protective measures for species listed under the ESA during the 2008 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 2008 management season, as well as further guidance and recommendations for the 2008 management season.

The ESA consultation standards, exploitation rates, and other criteria, in place for the 2008 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 a significant impact on Sacramento River winter Chinook, Central Valley spring Chinook, California Coastal Chinook, Snake River fall Chinook, lower Columbia River fall Chinook, and all of the coho stocks. Additional listed salmonid ESUs found within the Council area, but not significantly impacted by Council managed fisheries, include:

Chinook

- | | |
|--|--|
| Snake River spring/summer (threatened) | Puget Sound (threatened) |
| Upper Willamette (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) | Central Valley, California (threatened) |
| South-central California coast (threatened) | Central California coast (threatened) |
| Upper Columbia River (endangered) | Upper Willamette River (threatened) |
| Middle Columbia River (threatened) | Lower Columbia River (threatened) |
| Snake River Basin (threatened) | Northern California (threatened) |

6.0 OBLIGATIONS UNDER THE PACIFIC SALMON TREATY

6.1 Chinook Salmon Management

Under the 1999 PST Agreement, Council fisheries are subject to the individual stock based management (ISBM) provisions of Annex 4, Chapter 3. These provisions require the 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 Chinook stocks failing to achieve escapement goals adopted by the Pacific Salmon Commission (PSC).

Many Chinook stocks of concern to the Council are affected by fisheries off Canada and Alaska. Maximum allowable catches by aggregate abundance based management (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 Chinook stocks that are not expected to achieve agreed MSY spawning escapement goals. Expectations for Canadian and Alaskan fisheries harvest and stock abundance forecasts are incorporated into Chinook FRAM to estimate total exploitation rate impacts from all marine fisheries (Table 5).

Key considerations for Canadian domestic fishery management for Chinook in 2008 include, (1) meeting domestic conservation obligations for WCVI, Strait of Georgia, and Fraser River stocks; (2) Chinook harvests by native fisheries; and (3) incidental impacts during commercial and native fisheries directed at pink (odd years), 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, Lower Strait of Georgia, and Fraser River 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 PSC Coho Plan, and are based on total allowable fishery exploitation rates. Based on preseason abundance forecasts, total allowable exploitation rates for U.S. management units in 2008 are summarized in Table 5.

The categorical status of U.S. coho management units is reported to comply with obligations pursuant to the 2002 PSC Southern Coho Agreement. Categorical status is employed by the PST under the 2002 Coho Agreement 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 <20 percent), moderate (total exploitation rate 20 percent-40 percent), and abundant (total exploitation rate >40 percent). For the Puget Sound management units, the 2002 Coho Agreement uses the thresholds and stepped harvest rate goals from the Comprehensive Coho management plan, developed by Washington and the Puget Sound tribes. 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 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 minimum allowable exploitation rate by Canadian fisheries on U.S. coho management units is 10 percent. Because all four of the Washington coastal coho stocks are in the low category, Canadian fisheries will be constrained to a 10 percent exploitation rate on Washington coastal stocks.

Some confusion may arise from the methods employed to report the categorical status for Washington coastal coho management units. For these units, a range is reported for the allowable exploitation rates based on the relationship between the pre-season abundance forecast and the upper and lower values of the spawning escapement ranges corresponding to MSY production. Maximum exploitation rates are computed using the lower end of the escapement range and minimum exploitation rates are computed using the upper end of the escapement range. For purposes of reporting the categorical status, an allowable exploitation rate is computed using the mid-point of the MSY escapement range. Based on this

methodology, the allowable total exploitation rate for the Queets coho management unit is zero; consequently, the categorical status is “low.” However, this should not be interpreted to indicate that the maximum allowable exploitation rate on the Queets coho management unit is zero. The exploitation rate could be as high as 43 percent and still result in a spawning escapement within the MSY escapement range.

U.S. Management Unit	Total Exploitation Rate Constraint ^{a/}	Categorical Status ^{b/}
Skagit	35%	Moderate
Stillaguamish	50%	Abundant
Snohomish	40%	Moderate
Hood Canal	45%	Moderate
Strait of Juan de Fuca	40%	Moderate
Quillayute Fall ^{c/}	0%-40% (0%)	Low
Hoh ^{c/}	0%-54% (20%)	Low
Queets ^{c/}	0%-43% (0%)	Low
Grays Harbor	17%	Low

a/ Preliminary, total mortality exploitation rate ceilings. Constraints will ultimately be determined through preseason planning processes. For Puget Sound management units, the exploitation rate constraints reflect application of draft Comprehensive Coho rules. For the Quillayute, Hoh, and Queets management units, exploitation rate constraints represent the potential range associated with escapement goal ranges (the values in parentheses reflect the exploitation rate associated with the mid-point of the spawning escapement goal range).

b/ Category titles correspond to the general exploitation rate ranges depicted in paragraph 3(a) of the 2002 PSC Coho Agreement or the exploitation rate status determinations exchanged during the negotiations that culminated in the 2002 Agreement. For Puget Sound management units, the categorical status categories reflect application of draft Comprehensive Coho rules. No formal status classification system has yet been developed for Washington coastal management units; the categorical status levels are based on exploitation rate values depicted in parentheses.

c/ For Washington Coastal coho management units, spawning escapement ranges correspond to estimates for MSY escapements. The exploitation rate ranges for these management units are based on preseason abundance forecasts and the upper and lower ends of the ranges. Maximum exploitation rates are computed using the lower end of the escapement range; minimum exploitation rates are computed using the upper end of the escapement range. The categorical status is determined based on the mid-point of the escapement range. Note that the exploitation rates used to report categorical status do not represent maximum allowable rates for the management units.

Key considerations for Canadian fishery management for coho in 2008 are expected to include, (1) meeting domestic conservation obligations for Interior Fraser (including Thompson River) coho; (2) coho harvests by native fisheries; (3) incidental impacts during commercial and native fisheries directed at 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 will be driven by Canadian domestic allowable impacts on the Thompson River component of the Interior Fraser management unit (in previous years, Canadian fisheries were managed so as not to exceed a 3 percent maximum exploitation rate).

The projected status of Canadian coho management units in 2008 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 all 2008 U.S. fisheries south of the U.S./Canada border to a maximum of 10.0 percent.

7.0 CHINOOK SALMON MANAGEMENT

7.1 *South of Cape Falcon*

Chinook salmon management south of Cape Falcon has typically been predicated on the CVI and KRFC stock abundance forecasts. However, concern over a very low CVI forecast for 2008 led to the development of an alternative abundance forecast and harvest model based specifically on SRFC. The abundance forecast and harvest model are confined to the area south of Cape Falcon (see Appendix B for justification). A description of the Sacramento Index (SI), and the SI predictor, is presented in Appendix

C. The Sacramento Harvest Model (SHM) is described in Appendix D. 2008 abundance projections relevant to Chinook harvest management south of Cape Falcon are:

- *SRFC*. The Sacramento Index forecast is 54,600 SRFC adults. This forecast value is less than one quarter of the lowest observed SI on record (Appendix C, Figure C-1).
- *KRFC*. The age-3 forecast is 31,600 fish; the lowest forecast on record. In contrast, the age-4 forecast of 157,200 is above average. The age-5 forecast is 1,900 fish. The 2007 preseason forecast was 515,400 age-3, 26,100 age-4, and 4,700 age-5 fish.
- *Oregon Coastal Chinook*. Quantitative abundance predictions are not made for these stocks for use in annual development of Council area fishery regulations. Qualitative expectations of abundance are based on parental year spawner escapements and hatchery indicator stock data used in the PSC management process.

7.1.1 Objectives

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

- 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 Sacramento River winter Chinook, California Coastal Chinook, Snake River fall Chinook, and lower Columbia River natural tule Chinook.
- *SRFC*. Conservation alert triggered by a forecast escapement of 58,200 adult spawners in the absence of fishing south of Cape Falcon, which falls short of the spawning escapement goal of 122,000–180,000 adults (FMP conservation objective).
- *KRFC*. Natural area spawning escapement of at least 40,700 adults (2008 Council guidance) and spawner reduction rate not to exceed 66.7 percent (FMP conservation objective), 50:50 tribal:non-tribal sharing of adult harvest (Department of Interior Solicitor Opinion).
- *Oregon Coastal Chinook*. An escapement of 150,000-200,000 naturally spawning adults represented by 60-90 naturally spawning adults per mile in nine standard index streams (FMP conservation objective).

7.1.2 Achievement of Objectives

Fishery quotas under the options are presented in Table 4. Stock-specific management criteria and their forecast values under the Options are provided in Table 5. Projected fishery landings, bycatch, and bycatch mortality under the Options are summarized in Table 6. Table 7 provides a breakdown of impacts by fishery and area for LCR tule Chinook. Appendix E presents tables of SRFC impacts by fishery/time/area under the three options.

- *SRFC*. The SRFC conservation objective of 122,000–180,000 adult spawners is not met by any of the Options. Projected escapement under Option I is 51,900 adults, under Option II is 56,300 adults, and under Option III is 58,200 adults. All options are also projected to result in a shortfall of the egg-take goals in Sacramento Basin hatcheries.
- *Oregon Coastal Chinook*. Council-area fisheries have a minor impact on Oregon coastal Chinook stocks and negligible impacts on most Chinook stocks subject to the 1999 PST Agreement. Stock abundance forecasts for some Canadian stocks, and actual PST landing limits on Canadian fisheries

are not presently known. These stock abundance forecasts and PST landings limits will be known prior to the April Council meeting. At this point there appears to be sufficient flexibility within Council and inside area fisheries as a whole to achieve compliance with conservation objectives for these stocks.

All of the options for Chinook fisheries south of Cape Falcon satisfy NMFS ESA consultation standards and guidance, FMP conservation objectives, and all other objectives for other relevant stocks listed in Table 5.

7.2 North of Cape Falcon

Abundance projections relevant to Chinook harvest management north of Cape Falcon are:

- *Columbia Lower River Wild.* The 2008 ocean escapement prediction for Columbia Lower River wild fall Chinook (LRW) is 3,800, down from the preseason forecast of 10,100 in 2007 and below the MSY spawner goal of 5,700 for North Fork Lewis River fall Chinook (NMFS ESA consultation standard).
- *Columbia River hatchery tules.* Combined production of Lower River Hatchery (LRH) and Spring Creek Hatchery (SCH) stocks is predicted to be 90 percent greater than the 2007 preseason expectations. The 2008 LRH forecast abundance is 59,000, up slightly from 54,900 in 2007. The 2008 SCH forecast abundance is 87,200, which is four times greater than the 21,800 forecast in 2007.

7.2.1 Objectives

The key Chinook salmon management objectives shaping the options are:

- 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 Columbia Lower River wild fall Chinook, Columbia Lower River natural tule Chinook, Snake River fall Chinook, and Puget Sound natural Chinook.
- *Columbia Lower River wild fall Chinook.* Spawning escapement goal of 5,700 (NMFS ESA consultation standard) for North Lewis River fall Chinook. NMFS guidance for 2008 does not require any additional constraints in Council area fisheries to increase LRW escapement; however, WDFW anticipates managing southern U.S. ocean and inriver fisheries to achieve an AEQ harvest rate of no more than 10 percent on LRW Chinook.

7.2.2 Achievement of Objectives

Fishery quotas under the options are presented in Table 4. Stock-specific management criteria and their forecast values under the Options are provided in Table 5. Projected fishery landings, bycatch, and bycatch mortality under the Options are summarized in Table 6. Table 7 provides a breakdown of impacts by fishery and area for LCR tule Chinook.

- *Columbia Lower River Wild.* All options result in spawning escapement projections that fail to meet the 5,700 MSY spawning escapement objective in the North Fork Lewis River (NMFS ESA consultation standard); however all options do result in a southern U.S. AEQ exploitation rate of less than 10.0 percent on LRW Chinook (WDFW objective when a stock is projected to fall below its spawning escapement objective). Stock abundance forecasts for some Canadian stocks, and actual PST landing limits on Canadian and Alaskan fisheries are not presently known, and preliminary values have been used to conduct the impact analysis presented in this report. These stock abundance forecasts and PST landings limits will be known prior to the April Council meeting and, together with

the continued harvest negotiations in the North of Falcon forum, may result in higher escapement and/or lower exploitation rates for LRW Chinook than presented here.

- *Columbia Lower River Natural tule fall Chinook.* Because of the WDFW objective for LRW Chinook and ESA constraints on LCN and OCN coho, LCR tules will not constrain fisheries north of Cape Falcon in 2008.
- *Snake River wild fall Chinook.* Because of the WDFW objective for LRW Chinook and ESA constraints on LCN and OCN coho, SRW Chinook will not constrain fisheries north of Cape Falcon in 2008.
- *Puget Sound Chinook.* Council-area fisheries have a minor impact on ESA-listed Puget Sound Chinook and negligible impacts on most Chinook stocks subject to the 1999 PST Agreement. At this point there appears to be sufficient flexibility within Council and inside area fisheries as a whole to achieve compliance with NMFS consultation standards for the Puget Sound Chinook ESU.

All of the options for Chinook fisheries north of Cape Falcon satisfy NMFS ESA consultation standards and guidance, FMP conservation objectives, and all other objectives for other relevant stocks listed in Table 5.

8.0 COHO SALMON MANAGEMENT

Abundance projections relevant to coho harvest management in Council area fisheries:

- *Oregon Coastal Natural (OCN) coho.* The OCN forecast of 60,000 is 23 percent of the 2007 preseason forecast of 255,400.
- *OPI Hatchery coho.* The 2008 forecast for hatchery coho from the Columbia River and the coast south of Cape Falcon of 216,100 is 36 percent of the 2007 forecast of 593,600. The Columbia River early coho forecast is 26 percent of the 2007 forecast and the Columbia River late coho forecast is 62 percent of the 2007 forecast.
- *Lower Columbia River Natural (LCN) coho.* The 2008 LCN forecast is 13,400 adults returning to the mouth of the Columbia River, compared to a preseason forecast of 21,500 in 2008.
- *Puget Sound coho.* The forecast for Hood Canal coho is below the FMP conservation objective, assuming fisheries similar to 2007. However this stock along with other Puget Sound coho stocks is subject to the provisions of the 2002 PSC coho agreement, which permits harvest at specified rates based on annual stock status classification.
- *Interior Fraser (Thompson River) coho.* This Canadian stock continue to be depressed, however due to constraints for LCN and OCN coho, this stock will not limit 2008 ocean coho fisheries north of Cape Falcon.

8.1 Objectives

Key coho salmon management objectives shaping the options 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 coho, Oregon coastal natural coho, and lower Columbia River natural coho. Based on this guidance, the maximum allowable exploitation rates are:

a combined marine/freshwater exploitation rate not to exceed 8.0 percent for OCN coho, a combined exploitation rate in Council-area and mainstem Columbia River fisheries not to exceed 8.0 percent for Lower Columbia River natural coho, and a marine exploitation rate not to exceed 13.0 percent for Southern Oregon/Northern California coho.

- Terms and requirements of the 2002 PSC coho agreement for stocks originating along the Washington coast, Puget Sound, and British Columbia as provided in Section 6.2 above. Relevant stocks for the area north of Cape Falcon in 2008 include Hood Canal coho.
- Minimum escapement of 50 percent of Upper Columbia coho above Bonneville Dam (*U.S. v. Oregon* annual management agreement).
- Providing sufficient escapement of Columbia River early and late coho to meet hatchery egg take goals and inriver harvest impacts.

8.2 *Achievement of Objectives*

Fishery quotas under the options are presented in Table 4. Stock-specific management criteria and their forecast values under the Options are provided in Table 5. Projected fishery landings, bycatch, and bycatch mortality under the Options 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.

- *Lower Columbia River natural coho.* All options satisfy the maximum 8.0 percent exploitation rate, with marine exploitation rates ranging from 6.6 percent to 3.0 percent. These exploitation rates, while satisfying the combined Council-area marine and mainstem Columbia River fisheries, represent Council-area fisheries only. Shaping of the inriver fisheries could require changes in marine fisheries to meet the combined exploitation rate limit.
- *Hood Canal coho.* Although the 45 percent exploitation rate ceiling is met, all Options fail to meet the 21,500 spawner escapement goal set in the FMP. However, the FMP goal is not a constraint in 2008, as annual management goals are allowed under the FMP if they are agreed to by the parties of *U.S. v. Washington*.

All of the options for all fisheries satisfy NMFS ESA consultation standards and guidance, FMP conservation objectives, and all other objectives for other relevant stocks listed in Table 5.

9.0 **IMPORTANT FEATURES OF THE OPTIONS**

Significant changes from recent seasons are highlighted below, but this section is not intended to be a comprehensive description of the options. For detailed information on the proposed ocean salmon season options see Tables 1 (non-Indian Commercial), 2 (recreational) and 3 (Treaty Indian).

9.1 *Commercial*

All 2008 Options for fisheries south of Cape Falcon are very restrictive compared to recent years because of the low forecast for SRFC.

Option I allows for very limited Chinook directed fisheries from Cape Falcon to Pigeon Point, primarily to maintain some continuity for the commercial salmon fishing industry and related businesses while restricting impacts to SRFC. Chinook fisheries would be open from April 15 through May 31 from Cape Falcon to the Oregon/California border. All commercial salmon fishing south of the Oregon/California

border would be managed by quotas. In August, 3,000 fish quotas exist for the California portion of the Klamath Management Zone (KMZ), Fort Bragg area, and San Francisco area. No fishing would be allowed south of Pigeon Point. Because SRFC have triggered a Conservation Alert in 2008, implementation of Option I would likely require an emergency rule.

Option II does not allow for any Chinook harvest, but allows for an experimental, non-retention GSI study from Cape Falcon to the U.S./Mexico border May 1 through August 31. This fishery is designed to gather information on stock composition in commercial fisheries south of Cape Falcon, with a focus on KRFC. Tissue samples for the GSI study would be collected by commercial fishermen on a contract basis, and would not include the entire fleet. The tissue sample size goal is 800 samples per month (four months) in each of the seven management areas. Funds for conducting this fishery have been allocated for 2008.

Option III is closed to all commercial salmon fishing (both retention and non-retention) south of Cape Falcon. This Option reflects the Salmon FMP requirement to close all Council area fisheries that have a significant impact on stocks that trigger a Conservation Alert.

There are no fall 2008 fishing seasons in 2008 under any of the Options to comply with the proposed KRFC rebuilding strategy, and to reduce impacts on depressed 2005 brook KRFC and SRFC. Option III does not include any openings prior to May 1, 2009.

Options for the area north of Cape Falcon are generally similar in structure as seasons in recent years, although coho quotas are substantially lower, reflecting both the reduced abundance of lower Columbia River natural coho stocks, and the more conservative 8 percent exploitation rate ceiling for lower Columbia River natural coho specified in the NMFS guidance for 2008.

In Option III north of Cape Falcon, the area between Cape Falcon and Leadbetter Point will operate under a separate season quota of 1,875 Chinook, without subquotas for the Chinook-directed and all-species fisheries. The area between Leadbetter Point and the U.S./Canada border will maintain traditional Chinook subquotas during the Chinook-directed and all-species fisheries. However, both areas will share the coastwide coho quota.

A mandatory yelloweye rockfish conservation area closure was added in 2007 to the permanent salmon regulations (50 CFR 660.405) as part of NMFS regulations to implement Amendment 16-4 to the Groundfish FMP (71 FR 78638, December 29, 2006.). The closure prohibits commercial salmon trolling 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. The area also overlaps part of the "C-Shaped" yelloweye rockfish conservation area (YRCA), designated as an area for salmon trollers to voluntarily avoid, which has been in place since 2003.

9.2 Recreational

Option I allows a combination of Chinook directed, coho directed, and all-species fisheries south of Cape Falcon. Option II allows only for a coho directed fishery in the region between Cape Falcon and Humbug Mountain. Option III is closed to all recreational salmon fishing south of Cape Falcon. The exception to these season structures is the early fishery that commenced in Fort Bragg on February 16 and is scheduled to close on March 31. It is therefore included in each of the three Options.

From Cape Falcon to Humbug Mountain, a Chinook directed fishery is proposed from April 15 – June 15. Following this fishery, a mark-selective coho fishery in the region between Cape Falcon and the Oregon/California border would be open from June 22 – August 31, or until the attainment of a 10,000 marked coho quota with a two fish bag limit. In the Oregon portion of the KMZ, Chinook retention would be allowed May 24 – 26, July 4 – 6, and August 28 – 31, with no more than one Chinook allowed per day. Note that the July and August Chinook openings in the Oregon portion of the KMZ run concurrently with the coho mark-selective fishery, but the May 24 – 26 opening prohibits coho retention.

South of the Oregon/California border, recreational fishing opportunities under Option I would occur surrounding only holiday weekends. In the California portion of the KMZ, Fort Bragg, and San Francisco areas, this includes May 24 – 26, July 4 – 6, and August 28 – 31, with a two fish per day bag limit. In the Monterey area and south to the U.S./Mexico border, Option I would allow for one opening from May 18 – 26, with a two fish per day bag limit.

Option II has a mark selective coho only fishery in the Cape Falcon to Humbug Mountain area June 22 - August 31, or until a quota of 6,000 marked coho is reached. Regulations include four days per week with no more than one weekend day. No other recreational salmon fisheries would be allowed south of Humbug Mountain under Option II. The proposed regulations are intended to provide limited coho opportunity with minimal impacts on SRFC.

Option III is closed to all recreational salmon fishing south of Cape Falcon. This Option reflects the Salmon FMP requirement to close all Council area fisheries that have a significant impact on stocks that trigger a Conservation Alert. This option also does not allow any fishery openings in 2009 prior to May 1.

North of Cape Falcon, Options I and II provide for Chinook-directed fisheries in all four management areas beginning in May with coho non-retention. The intent of these early season fisheries is to provide opportunity for Chinook, recognizing that coho quotas will be unusually small in 2008 and may limit access once the all-species fisheries open. The Westport subarea has options for both seven days per week and five days per week; the other three areas have options only for seven days per week during the Chinook-directed fisheries.

In the all-species recreational fishery, all four subareas north of Cape Falcon have options for five days per week only. The intent of the five day per week option is to prolong the season.

Option II has an area 4B add on fishery of 5,000 marked coho due to the increased likelihood of North of Falcon recreational fisheries exhausting allowable coho impacts prior to Labor Day.

9.3 Treaty Indian

Options are generally similar in structure as in recent years, although coho quotas are substantially lower, reflecting both the reduced abundance of OPI stocks in general, and specifically the more conservative standard for lower Columbia River natural coho specified in the NMFS guidance for 2008.

10.0 SOCIOECONOMIC IMPACTS OF PROPOSED OPTIONS

The short-term economic effects of the proposed options for non-Indian fisheries are shown in Tables 9 and 10. Table 9 shows troll impacts expressed in terms of estimates of potential exvessel value. Table 10 shows recreational impacts in terms of trips generated and coastal community personal income impacts associated with the recreational fishery under each option. The exvessel values provided for the troll fishery options in Table 9 and income impact values provided for the recreational fishery options in Table 10 are not directly comparable. Long-term social and economic effects are dependent on the impacts of this year's harvest on future production. In general the Council manages the fishery to meet

escapement objectives for salmon that are expected to achieve optimum yields and rebuild endangered stocks.

The primary purpose of the economic tables is to illustrate how relative economic opportunity varies under each option, as compared to the other options and the previous year. Therefore, the modeling of the recreational estimates used 2007 seasons and effort patterns rather than a longer term average. Where no 2007 effort was available for a particular month and area, effort from a previous year was substituted. The Oregon south of Cape Falcon recreational selective coho fishery was modeled assuming the effort will respond to take the entire available quota. To the degree that this effort response does not occur, the values provided will be an over estimate. Additionally, for the troll fishery, last year's prices were assumed to be the best estimator of prices expected in the coming season. The 2007 commercial prices were at record high levels, along with 2006 prices. Because 2008's management options are proposed to be more restrictive than last year, prices will tend to be similar to or higher than 2007 prices. Therefore, the estimates provided may understate expected salmon exvessel revenue; however, because of the restricted seasons, total exvessel revenue could be at historical lows. Additionally, escalated fuel prices would be expected to cut into per pound profits that may be associated with higher exvessel prices.

Figures 1 and 2 show estimated coastal community income impacts for the commercial troll and recreational options, respectively, compared to historic impacts in real (inflation adjusted) dollars. In general, income impact estimates provide information on the amount of income associated with a particular activity. Reductions in income impacts may, but do not necessarily, reflect net losses to a community but likely correlate with losses to those businesses and individuals with income dependence on the activity. In some cases reductions in ocean harvest may also result in either greater inside fishing opportunity or escapement, which may contribute to future production, depending on the carrying capacity of the system to which the stocks are escaping.

In past years the KMZ has benefited from the landing of commercial fish caught in the area between Cape Falcon and Humbug Mountain. In 2005 and 2006, it appears that about 10 percent of the fish caught off the central Oregon coast (Cape Falcon to Humbug Mountain) were landed in a KMZ port. These landings accounted for the large majority of the landings in the KMZ, primarily in the Brookings port area. However, due to the restricted options for the 2008 season, the area South of Cape Falcon are predicted to show much lower landings compared to 2007 and especially compared to the recent five year average (03-07). Under Option II there would be some opportunity for vessels to earn money hiring out as scientific charters for an experimental GSI study. Fish caught during the study would not be retained.

It is assumed that the north of Cape Falcon recreational fishery will be quota limited (as opposed to being limited by season length). Option II provides 5,000 fish for an Area 4B add-on fishery in state waters and reallocates some of the ocean quota from Neah Bay to ports to the south. Table 8 includes expected harvests in the Columbia River estuary Buoy-10 fishery. Neither of these inside fisheries were included in the economic results for ocean harvest displayed in Table 10. Options for recreational fishing south of Cape Falcon in 2008 are highly limited. The least restrictive (Option I) provides minimal fishing in all areas, with projected effort ranging from 6 percent to 22 percent of 2007 effort, depending on the management area.