



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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PORTLAND, OREGON 97232-1274

Mr. Phil Anderson, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, Oregon 97220-1384

March 5, 2019

Dear Chair Anderson:

The Pacific Coast Salmon Fishery Management Plan (FMP) requires that the Pacific Fishery Management Council (Council) develop management recommendations for fisheries under the FMP consistent with consultation standards analyzed and/or described in biological opinions on the fishery developed by the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) to protect species listed as threatened or endangered under the Endangered Species Act (ESA). This letter summarizes the consultation standards for salmon and steelhead and provides NMFS' preliminary guidance regarding their implementation for the 2019 ocean salmon fishing season, as in previous years. We will provide guidance for the 2019 season and work related to effects of Council fisheries on endangered Southern Resident killer whales separately in a supplemental guidance letter.

We also use this opportunity to comment on other subjects of general interest and provide additional recommendations for non-ESA-listed salmon stocks of particular relevance to Council fisheries. For the 2019 fishing season, these other subjects include: recommendations for fisheries affecting Sacramento River fall-run Chinook salmon and Klamath River fall-run Chinook salmon, including a proposal for genetic sampling in closed areas; implementing provisions of the new *United States (U.S.) v. Oregon* Management Agreement; and relevant coho provisions for the new Pacific Salmon Treaty (PST) Agreement, as applied January 1, 2019. In this letter, we first address the topics of general interest and non-ESA salmon stocks, followed by guidance related to consultation standards on ESA-listed salmon species.

Guidance related to non-ESA related topics

Coho Provisions under the PST

Background: A new harvest sharing agreement under the PST has been reached between the United States and Canada (provisionally applied January 1, 2019). The coho chapter of the new Agreement contains refinements to the recent management approach and applies to coho stocks in British Columbia, Washington, and Oregon. Retained in the new Agreement is the ability to request increases in any management unit's (MU) annual exploitation rate (ER) cap specified within the chapter, but new, per Section 8(g), is a commitment by both the United States and Canada to "not change the status or associated ER caps for an MU after March 31" in any given year. Therefore, any requests for modifying ER caps necessary to complete a Party's domestic process will need to be exchanged prior to March 31st.



The 2019 preseason planning manager-to-manager meeting between the U.S. and Canada will occur on March 18, 2019. The Parties will exchange preseason expectations of stock status and anticipated fishery structure that can be readily incorporated into model inputs. Canada's Thompson River coho stock remains in critical status under the PST Agreement. Conservation concerns regarding this stock will shape the 2019 Canadian fisheries.

Guidance: U.S. representatives that attend the meeting between the United States and Canada will share information on Canadian fishing levels and structure in 2019 with the Council's Salmon Technical Team (STT) for incorporation into planning U.S. domestic fisheries. Council fisheries, together with other southern United States fisheries, must be managed to stay within the ER caps. In 2017 and 2018, the Council adopted fisheries that resulted in slightly greater impacts on coho stocks in U.S. fisheries than were agreed to under the PST – Queets coho in 2017 and Grays Harbor coho in 2018. Provisions of the coho chapter of the PST allow for exceedance under certain conditions if both countries agree. In 2017, Canada agreed to the exceedance. In 2018, Canada did not agree, but did not object. Canada is unlikely to accept a third consecutive year of exceeding the agreed upon impacts.

Genetic Stock Identification (GSI) Sampling

Background: The West Coast Salmon Genetic Stock Identification (WCGSI) collaboration is a partnership of west coast fishermen's organizations, universities, states, and NMFS that was formed in 2006 to explore potential uses of genetic stock identification (GSI) for west coast salmon fisheries management. Various levels of at-sea tissue sampling have occurred since the inception of the WCGSI, both in open fisheries and in times and areas closed to salmon fishing.

In 2019, WCGSI partners intend to conduct sampling of Chinook salmon off the coast of California to examine fine scale ocean distribution patterns of Klamath River Chinook salmon compared to other stocks of interest, including ESA-listed California Coastal Chinook salmon. A proposal for the 2019 sampling plan has been submitted to the Council for its consideration. The proposed sampling scheme incorporates GSI sampling of Chinook salmon caught in commercial fisheries and non-retention GSI sampling of Chinook salmon in times and areas closed to salmon fishing. Proposed areas for non-retention sampling include part of the Klamath Management Zone that has been closed to commercial salmon fishing for approximately the last 30 years to conserve coho and Chinook salmon stocks from the Klamath River and the northern California coast.

Guidance: We recommend the Council consider the relative merits of implementing the non-retention GSI sampling portion of the project in 2019 and evaluate the proposal through the Council's usual fishery planning process. Impacts associated with hook-and-release mortality in non-retention GSI sampling should be accounted for in the STT's analysis of fisheries impacts. We encourage communication between scientists, advisory committees, and the Council in considering the proposal and to help direct development of GSI technologies that can best serve salmon management over the long term.

If the 2019 proposal is recommended by the Council, the WCGSI partnership would have to submit an application to NMFS' West Coast Region for a scientific research permit authorizing non-retention sampling of Chinook salmon in times and areas closed to commercial harvest.

Sacramento River Fall-run Chinook (SRFC) Salmon

Background: SRFC have declined in recent years to the point that in 2018 the three-year geometric mean of hatchery and natural area adult spawners was lower than the minimum stock size threshold (MSST), thereby resulting in an overfished status determination for this stock. As required in the FMP, the STT and other contributors are working to develop a rebuilding plan for Council consideration in 2019. In the interim, the FMP requires that the Council “structure Council-area fisheries to reduce the likelihood of the stock remaining overfished and to mitigate the effects on stock status” (Section 3.1.1 of the FMP).

Recent information helps inform decisions related to management in 2019. Forecasts of the Sacramento Index and the number of SRFC spawners have been higher than the post-season estimates in each of the last four years, although the 2018 Sacramento Index was relatively close to the preseason forecast (Table 1). The projected exploitation rates have also been consistently lower than the post-season estimates, substantially in most years. Spawner abundance declined by an order of magnitude from 2013 to 2017 from a high of 406,200 in 2013 to just 44,574 in 2017. The escapement in 2017 was near a record low. The post-season escapement in 2018 was a significant improvement but, again, below preseason expectations and remained below the floor of 122,000 associated with the FMP objective. The three-year geometric mean of spawners is 73,994 (2016-2018) and must increase to at least 122,000 to achieve rebuilt status. An escapement of 402,040 would be required to meet the FMP’s criteria for rebuilt status in 2019. It is impractical to expect to achieve rebuilding so quickly, but progress can be made in 2019 toward that end.

Table 1. SRFC preseason abundance, escapement, and exploitation rate forecasts for 2015-2018, and comparison to post-season estimates.

Year	Sacramento Index Forecast	Preseason Forecasted Spawning escapement	Preseason Exploitation Rate	Sacramento Index Post Season	Post-Season Spawning escapement	Post-Season Exploitation Rate
2015	651,985	341,017	48%	254,240	112,947	56%
2016	299,609	151,128	50%	205,289	89,674	56%
2017	230,700	133,242	42%	135,500	44,574	68%
2018	229,432	151,000	34%	223,900	105,739	53%
2019	379,632	-	-	-	-	-

The harvest control rule in the FMP specifies an exploitation rate that produces an expected escapement of 122,000 adults, corresponding to maximum sustainable yield (S_{MSY}). The conservation objective for SRFC in the FMP specifies a range of 122,000 – 180,000 adult spawners.

Guidance: Although the 2019 forecast of SRFC abundance is higher than forecasts in the previous three years, we recommend caution given the tendency of the model to over-forecast. A risk-averse management approach is warranted, so the 2019 fisheries should be structured to target an escapement

around the upper end of the SRFC conservation objective range, with at least one of the options adopted for public review and comment at the March Council meeting including a target escapement of 180,000 adult spawners.

Klamath River Fall-run Chinook (KRFC) Salmon

Background: The status of KRFC has also declined to the point that it has been declared overfished. As with SRFC, the STT and other contributors are working to develop a KRFC rebuilding plan for Council consideration in 2019. In the interim, the FMP requires that the Council “structure Council-area fisheries to reduce the likelihood of the stock remaining overfished and to mitigate the effects on stock status” (Section 3.1.1 of the FMP).

Recent information can help inform decisions related to management in 2019. Performance has been mixed over the last four years (Table 2). The ocean abundance forecasts and projected number of spawners have been substantially higher than the post-season estimates in the first two years and substantially lower in the last two years of the data series. The post-season escapement in 2018 was the highest escapement since 2014. However, interim escapements have been much lower. The projected exploitation rate in 2016 was lower than the post-season estimate, but preseason forecasts of exploitation rates were close to or below preseason projections in three of the last four years. The number of natural-area adult spawners since 2014 has declined substantially from the levels of escapement observed during the previous five years, nearing a record low in 2016. The three-year geometric mean (2016-2018), 24,594 is sixty percent of the S_{MSY} escapement objective of 40,700. An escapement of 63,165 would be required to meet the FMP’s criteria for rebuilt status in 2019. Escapements of this magnitude have occurred in the past under ocean abundances greater than 400,000. It may be impractical to expect to achieve rebuilding so quickly given the forecast ocean abundance for 2019 but progress can be made in 2019 toward that end.

Table 2. KRFC preseason abundance, escapement, and exploitation rate forecasts for 2015-2018, and comparison to post-season estimates.

Year	Ocean Abundance Forecast	Resulting Forecasted Spawning escapement	Preseason Exploitation Rate	Post-Season Ocean Abundance	Post-Season Spawning escapement	Post-Season Exploitation Rate
2015	423,753	40,700	59%	171,600	28,112	59%
2016	142,169	30,909	25%	57,500	13,937	37%
2017	54, 246	11,379	8%	73,200	19,904	10%
2018	359, 231	40,700	32%	408,600	53,624	28%
2019	274, 200	-	-	-	-	-

The KRFC harvest control rule specifies maximum allowable exploitation rates that vary with abundance, but generally seeks to provide for an S_{MSY} escapement level of 40,700 *natural-area adults* (i.e., adult fish that spawn in natural areas). The 2019 forecast provides for an expected escapement of

87,893 natural-area adult spawners absent fishing and, under the control rule, would allow for an exploitation rate of 53.7 percent.

Guidance: Given the fact that KRFC have met the criteria for an overfished determination, the status of escapement relative to the FMP conservation objective and the FMP mandate to the Council, we believe that a cautious approach is warranted. We recommend the Council target a natural-area adult KRFC escapement greater than 40,700 for 2019 fisheries to further stabilize the population and promote rebuilding.

Upper Columbia River Summer-run Chinook Salmon ESU

Background: In 2018 the management entities within the Columbia River completed a new *U.S. v. Oregon* Management Agreement for 2018-2027. The new agreement includes provisions for escaping a minimum aggregate of 29,000 Upper Columbia River summer Chinook salmon adults to the mouth of the Columbia River. The agreement also includes provisions about how adult equivalent harvest of non-treaty fisheries in the Pacific Ocean south of the southwesterly projection of the U.S.-Canada boundary between British Columbia and Washington will be counted as part of the total run size for allocation purposes.

Guidance: The FMP recognizes the agreement's determination as the conservation objective and, therefore, in 2019 Council fisheries must be managed to ensure an aggregate escapement of 29,000 adult Upper Columbia River Summer Chinook Salmon to the mouth of the Columbia River.

ESA-listed Chinook Salmon Species

California Coastal (CC) Chinook Salmon Evolutionarily Significant Unit (ESU)

Background: The CC Chinook salmon ESU has been listed as threatened under the ESA since 1999. The current consultation standard for CC Chinook is described in the FMP and is based on a 2000 NMFS biological opinion and additional ESA consultation on the ESU completed in 2005, which specified actions necessary to implement the reasonable and prudent alternatives (RPAs) of the 2000 opinion.

Guidance: The Council fisheries should be designed consistent with the RPA of the 2000 opinion (i.e., limits on the forecast KRFC age-4 ocean harvest rates would serve as the consultation standard to ensure that CC Chinook are not subject to increasing harvest rates in the future) and the 2005 consultation (i.e., management measures shall result in a forecast KRFC age-4 ocean harvest rate of no greater than 16 percent).

Sacramento River Winter-run Chinook Salmon (SRWC) ESU

Background: The SRWC ESU was listed under the ESA as threatened in 1990 and relisted as endangered in 1994. SRWC is one of eight species identified in NMFS' "Species in the Spotlight"

initiative because it is at high risk of extinction. For more information about actions for its conservation and recovery, please refer to its Species in the Spotlight Priority Action Plan¹.

NMFS has completed several ESA consultations regarding the impacts of the ocean salmon fishery on SRWC. The most recent and currently applicable opinion was completed in March 2018. That opinion analyzed the Council’s proposed new abundance-based control rule, informed by extensive analysis by the Council’s Ad Hoc Sacramento River Winter-run Chinook Salmon Workgroup (Workgroup), in conjunction with size and season limits previously implemented.

The terms and conditions in the opinion require that the fishery management framework, including the harvest control rule, be reviewed periodically beginning after the fifth year of implementation of the framework, as detailed in the terms and conditions of the 2018 opinion. The purpose of the review would be to assess performance, assumptions, and expectations described in the Workgroup’s analysis².

The 2018 opinion concluded that fisheries managed under this new control rule, and maintaining the fishery season and size restrictions that were part of the previous RPA, are not likely to jeopardize SRWC. The harvest control rule uses a forecast of SRWC age-3 escapement in the absence of fisheries (E_3^0) to determine the allowable impact rate³. If E_3^0 is above 3,000, a maximum impact rate of 20 percent is allowed. If E_3^0 is between 3,000 and 500, then the impact rate ranges from 0.20 to 0.10. If E_3^0 is below 500, then the impact rate has a steeper decline from 10 percent until it reaches zero at an E_3^0 of zero (Figure 1).

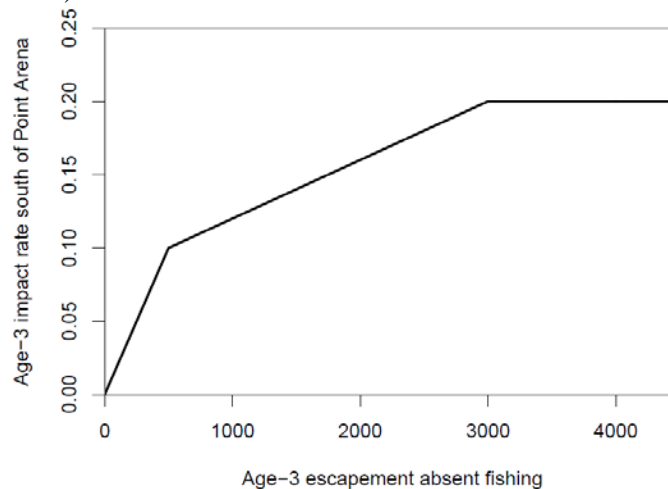


Figure 1. The adopted harvest control rule for management of ocean fisheries that affect Sacramento River winter-run Chinook salmon.

¹ Spotlight Priority Action Plan: <https://www.fisheries.noaa.gov/resource/document/species-spotlight-priority-actions-2016-2020-sacramento-river-winter-run>

² SRWC Workgroup. 2017a. Evaluation of Sacramento River winter Chinook salmon control rules: updated Management Strategy Evaluation analysis, dated August 14, 2017. Pacific Fishery Management Council Briefing Book for September 2017, 24 p. and SRWC Workgroup. 2017b. Further evaluation of Sacramento River winter Chinook control rules, dated October 18, 2017. Pacific Fishery Management Council Briefing Book for November 2017, 9 p.

³ O’Farrell, M., N. Hendrix, and M. Mohr. 2016. An evaluation of preseason abundance forecasts for Sacramento River winter Chinook salmon. Pacific Fishery Management Council Briefing Book for November 2016, 35 pages.

Guidance: The 2019 forecast of SRWC age-3 escapement in the absence of fisheries is 1,924. Applying this abundance forecast to the control rule results in a maximum allowable age-3 impact rate of 15.7 percent in 2019 fisheries south of Point Arena, California. Council fisheries in 2019 should be designed to not exceed 15.7 percent age-3 impact rate on SRWC.

Central Valley Spring-run Chinook Salmon ESU

Background: The Central Valley spring-run Chinook salmon ESU was first listed as threatened in 1999. Effects of the ocean salmon fishery on this ESU were most recently analyzed in NMFS' 2000 biological opinion. That opinion concluded that the fishery, as regulated under the FMP and NMFS' consultation standards for SRWC, is not likely to jeopardize the continued existence of Central Valley spring-run Chinook salmon.

The management framework for SRWC that includes the updated harvest control rule recommended by the Council in 2017 and size and season limits from the previous RPA for SRWC contains equivalent and/or additional restrictions on the fishery to previous management measures and is more responsive than prior management frameworks to information related to the status of Central Valley spring-run Chinook salmon by accounting for changes in freshwater conditions in the Central Valley for SRWC. As a result, NMFS concluded that the current management framework for SRWC, along with other regulatory measures in the FMP, limits impacts to Central Valley spring-run Chinook salmon for the 2019 fishing year in a manner that is more protective than anticipated in the 2000 opinion and, therefore, reinitiation of ESA consultation is not required at this time.

Guidance: Council fisheries in 2019 should be managed to meet the consultation standard for SRWC to be sufficiently protective of the Central Valley spring-run Chinook salmon ESU.

Lower Columbia River (LCR) Chinook Salmon ESU

Background: The LCR Chinook salmon ESU was listed as threatened under the ESA in 1999. In 2011, the Council recommended implementation of an abundance-based framework for limiting fishery impacts on this ESU. NMFS analyzed the effects of using this framework to manage ocean fisheries on LCR Chinook salmon in a 2012 biological opinion. The Council's abundance-based framework and the 2012 opinion provide the basis for our guidance in 2019.

LCR Chinook salmon includes a spring-run component, a "far-north" migrating bright component, and a component of north-migrating tules. The bright and tule components both have fall run timing. Of nine historical spring-run Chinook salmon populations, two are considered extinct, including the White Salmon and Hood River populations, which were both located in the Columbia River Gorge above Bonneville Dam. Four of the remaining seven populations are targeted to achieve high viability including the Upper Cowlitz, Cispus (a tributary of the Cowlitz), North Fork Lewis, and Sandy River populations. The historic spawning habitat for the Upper Cowlitz, Cispus, and Lewis River populations in Washington is now largely inaccessible to salmon due to impassable dams. These populations are therefore dependent, for the time being, on the associated hatchery programs.

a) Cowlitz and Lewis River Hatcheries populations – The Lower Columbia Salmon and Steelhead Recovery Plan⁴ specifies actions to be taken to facilitate recovery of LCR spring-run Chinook salmon populations in Washington State. The Cowlitz Salmon Hatchery and Lewis River Salmon Hatchery are being used, for example, for reintroduction of LCR spring-run Chinook salmon into the upper basins above the existing dams. The hatchery programs are critical to the overall recovery effort. Given the circumstances, maintaining the hatchery brood stocks for the Cowlitz and Lewis River Hatcheries is essential for implementation of specified recovery actions. The Cowlitz Salmon Hatchery has met its escapement objective in every year since 2002. Lewis River Salmon Hatchery escapements have routinely been above goal, but have been declining in recent years.

b) North Fork Lewis and Sandy River populations – There are two extant natural-origin bright populations in the LCR Chinook salmon ESU: the North Fork Lewis and Sandy River populations. Both populations are considered to be relatively healthy. The North Fork Lewis River population is used as a harvest indicator for ocean and in-river fisheries. The escapement goal used for management purposes for the North Fork Lewis population is 5,700, based on estimates of maximum sustainable yield derived from spawner-recruit analysis. Escapements averaged 10,400 since 2006 and, with few exceptions, have met or exceeded the goal since at least 1980. The Sandy River population is considered to be viable under current harvest conditions in the Lower Columbia River Salmon and Steelhead Recovery Plan (NMFS 2013). Given the long history of healthy returns and management constraints that will be in place this year for other stocks (e.g., tules and upriver brights), NMFS does not anticipate the need to take specific management actions in the ocean to protect the bright component of the LCR Chinook salmon ESU in 2019. NMFS does expect that the states of Washington and Oregon will continue to monitor the status of the LCR Chinook salmon bright populations, and take the specific actions necessary through their usual authorities to deliver spawning escapement through the in-river fisheries they manage sufficient to maintain the health of these populations.

c) LCR tule Chinook salmon – There are twenty-one separate populations within the tule component of the LCR Chinook salmon ESU. Unlike the spring-run or bright populations of the ESU, LCR tule Chinook salmon populations are caught in large numbers in Council fisheries, as well as fisheries to the north and in the Columbia River. NMFS' 2012 biological opinion on the abundance-based management (ABM) framework concluded that fisheries managed under this framework are not likely to jeopardize LCR Chinook salmon. The ABM framework sets the annual exploitation rate limit depending on the abundance of Lower River Hatchery (LRH) tule Chinook salmon (Table 3).

Since implementation of the framework, the preseason forecasts for LCR tule Chinook salmon have been high due in large part to favorable ocean survival conditions allowing for an exploitation rate of 0.41. In 2018, the framework allowed for an exploitation rate of 0.38. The terms and conditions of the 2012 opinion require that a postseason summary of the previous year's Council fisheries shall be provided annually by February 28; however, the estimated post season exploitation rate for LCR tule Chinok salmon in 2018 is not available at this time.

⁴http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/lower_columbia_river/lower_columbia_river_salmon_recovery_sub_domain.html

The 2012 opinion called for a review of the harvest framework every three years which is complimentary to an ongoing review of the recovery strategy. NMFS is finalizing its recommended harvest framework review in March 2019, a draft of which was provided to the Council in November 2018 inviting their review and comment. The harvest framework review concluded that the LRH abundance criteria currently used in the matrix has not been affected by recent changes in hatchery production.

Table 3. Variable exploitation rate limits based on the preseason forecast of LRH Chinook salmon.

Lower River Hatchery Abundance	Total Exploitation Rate Limit
0-30,000	0.30
30,000-40,000	0.35
40,000-85,000	0.38
> 85,000	0.41

Guidance: a) Cowlitz and Lewis River Hatcheries populations – The 2019 forecast for Cowlitz Salmon Hatchery escapement is 1,300 adults which will not meet the minimum hatchery escapement of 1,550 adults. The 2019 forecast for Lewis River Salmon Hatchery fish is 1,600 adults compared to an escapement goal of 1,380. We understand that the States of Washington and Oregon will manage the mainstem Columbia River spring season fisheries to ensure the escapement goal for the Lewis River Hatchery is met and the escapement to the Cowlitz Salmon Hatchery is maximized to the extent the forecast allows. Although additional progress is required to meet the high viability objective for the Sandy River, harvest objectives specified for the population through recovery planning are being met. We expect that the management agencies will continue to manage in-river fisheries, coordinating between mainstem and terminal tributary fisheries management, to meet hatchery escapement goals.

b) North Fork Lewis and Sandy River populations – Given the long history of healthy returns and management constraints that will be in place this year for other stocks (e.g., tules and upriver brights), we do not anticipate the need to take specific management actions in the ocean to protect the bright component of the LCR Chinook salmon ESU in 2019. We expect that the states of Washington and Oregon will continue to monitor the status of the LCR Chinook salmon bright populations, and take the specific actions necessary through their usual authorities to deliver spawning escapement through the in-river fisheries they manage sufficient to maintain the health of these populations.

c) LRH tule Chinook salmon – The preseason forecast for LRH tule Chinook salmon in 2019 is 54,500; therefore, Council fisheries in 2019 should be managed such that the total exploitation rate on LCR tule Chinook salmon in all ocean fisheries and all mainstem Columbia River fisheries below Bonneville Dam combined does not exceed 38 percent.

NMFS will continue to focus on implementing the comprehensive transitional strategy described in the recovery plan that links harvest actions to progress on the suite of actions necessary to achieve long-term recovery. In that regard, it is crucial for fishery managers to continue focusing on all aspects of the overall recovery strategy. Monitoring will be critical to verify that the actions specified in the plan are being taken and that populations are responding as expected. Success on both fronts will be necessary to avoid further constraints on harvest in the future.

Upper Columbia River Spring-run Chinook Salmon, Upper Willamette River Chinook Salmon, Snake River Spring/Summer-run Chinook Salmon ESUs

Background: NMFS has considered the effects of Council fisheries on spring-run Chinook salmon stocks from the Upper Columbia River and Upper Willamette River Basins and spring/summer-run Chinook salmon stocks from the Snake River in several biological opinions. In these opinions we concluded that the expected take in Council salmon fisheries of salmon originating from any one of these ESUs is at most an occasional event; therefore, the fisheries were not likely to jeopardize any of these ESUs.

Guidance: Consistent with the findings of the opinions, management actions designed to limit catch from these ESUs beyond what will be provided by harvest constraints for other stocks in 2019 are not necessary.

Snake River Fall-run Chinook Salmon ESU

Background: NMFS completed a biological opinion on the impacts of Council salmon fisheries on Snake River fall-run Chinook salmon in 1996. In that opinion, NMFS concluded that a 30.0 percent reduction in the age-3 and age-4 adult equivalent total exploitation rate in ocean salmon fisheries relative to the 1988-1993 base period standard provided a necessary and appropriate level of protection for Snake River fall-run Chinook salmon. Since this ESU has shown continued progress towards recovery with the 1996 opinion's standard in place, that standard still applies.

Guidance: 2019 Council salmon fisheries must be managed to ensure that the 30.0 percent base period reduction criterion for the aggregate of all ocean fisheries, including Southeast Alaska, Canada, and Council fisheries, is achieved.

Puget Sound Chinook Salmon ESU

Background: The following summarizes guidance for the Puget Sound Chinook salmon ESU. While NMFS is providing guidance for the 2019 Council salmon fisheries, we acknowledge the importance of, and continue to strongly support, the integrated management structure between the Council and North of Falcon planning processes. The FMP describes conservation objectives for each Puget Sound Chinook salmon stock, although these have evolved over time. The consultation standards for Puget Sound Chinook salmon stocks that NMFS includes in this letter are described in terms of total or southern U.S. fisheries (SUS) impacts rather than Council fisheries specific impacts. Under the current management structure, Council fisheries are included as part of the suite of fisheries that comprise the fishing regime negotiated each year by the co-managers under *U.S. v. Washington* to meet management objectives for Puget Sound and Washington Coastal salmon stocks.

Although Council and Puget Sound fisheries are intertwined, it is worth noting that impacts on Puget Sound Chinook salmon stocks in Council fisheries are generally quite low. In 2004, NMFS issued a biological opinion on the anticipated effects of Council fisheries on the listed Puget Sound Chinook

ESU for 2004 and future fishing years (NMFS 2004). The 2004 opinion found that exploitation rates in Council area fisheries within the range observed for brood years 1991-1998 would not jeopardize the continued existence of the species. Exploitation rates on Puget Sound spring- and fall-run Chinook stock aggregates in Council fisheries have been less than two percent and five percent on average, respectively, in recent years.

NMFS has consulted on a series of proposed harvest plans for the Puget Sound Chinook Salmon ESU since the ESU was listed in 1999. NMFS is currently reviewing a new comprehensive, multi-year joint Resource Management Plan (RMP) developed by the Washington Department of Fish and Wildlife and the Puget Sound Treaty Tribes (collectively the Puget Sound co-managers) submitted for consideration in December 2017 for the 2018-2028 fishing years. However, discussions between NMFS and the Puget Sound co-managers regarding the provisions of the RMP are on-going and review of that RMP will not be complete in time for the 2019 fishing season. Therefore, NMFS expects to consult on a Bureau of Indian Affairs proposed action encompassing the 2019 fishing season. We expect to issue the biological opinion for the Puget Sound fisheries by early May 2019. The following guidance reflects NMFS' discussions with the Puget Sound co-managers to date and our best preliminary assessment of appropriate conservation objectives for 2019.

The status of populations in the Puget Sound Chinook salmon ESU varies. However, there is no question that the status of the ESU as a whole has declined over the past 10 years. NMFS' most recent (2016) five-year status review of West Coast ESA-listed salmonids reported negative trends from 1999 to 2014 in natural-origin spawners for 17 of the 22 Puget Sound Chinook salmon populations. The proportion of natural-origin fish on the spawning grounds has decreased steadily over time. Natural-origin escapement of 7 of the 22 populations in the ESU are below their critical thresholds which, for all but one of the populations, means less than 200 natural-origin spawners. Six of those populations are essential to recovery of the ESU. The recent decline in the status of the ESU in general is primarily due to factors other than harvest, but with consideration of the status of the ESU as-a-whole and the critical populations, in particular, our guidance reflects additional conservatism.

Guidance: For the Puget Sound Chinook salmon ESU, consistent with the 2004 opinion, the 2019 Council fisheries should be managed such that exploitation rates on Puget Sound spring- and fall-run Chinook salmon populations do not exceed 3 and 6 percent, respectively. Also, in adopting its 2019 salmon fisheries recommendations, the Council should determine that its fisheries, when combined with the suite of other fisheries impacting the Puget Sound Chinook salmon ESU, meet the management targets set for populations within this ESU. For that reason, we provide detailed guidance below for Council fisheries and describe our expectation for the full suite of SUS fisheries that will affect Puget Sound Chinook salmon stocks in 2019.

Our 2019 guidance for conservation objectives for all Puget Sound Chinook salmon populations is summarized in Table 4. The guidance is a mixture of total and southern U.S. exploitation rates, escapement goals, or noted expectations in place of specific objectives. Primary factors considered in developing the guidance were: the status and trends of the individual populations and their various roles

in recovery of the ESU, NMFS' updated Fishery Regulation and Assessment Model (FRAM) equivalent Rebuilding Exploitation Rates (RERs), the forecast abundance of the population in 2019, and provisions in the proposed RMP.

We understand that the Puget Sound co-managers may provide management objectives to the Council for the 2019 season that are derived from various sources including the proposed 2018-2028 RMP, or that are specific to the circumstances in 2019, but that may differ from some of the guidance presented here. Where the conservation objectives differ, NMFS and the co-managers will continue working together to reconcile some or all of the differences. We may provide additional guidance to the Council in April pending further discussions with the Puget Sound co-managers and based on information developed through the North of Falcon process. This guidance is specific to the 2019 season and is not intended to limit the on-going discussions between NMFS and the co-managers with regard to the longer-term RMP.

Considerations for several Puget Sound Chinook populations, specific to circumstances in 2019, where we expect based on these considerations that the final objective that is produced during the preseason planning process will meet the conservation needs for the populations:

1. Puget Sound preseason run size information for 2019 indicates that the North and South Fork Nooksack early-run, Mid-Hood Canal, and the Stillaguamish populations will be at very low abundance in 2019. One or more of these stocks will likely have a limiting impact on some Puget Sound pre-terminal fisheries, such that full attainment of the exploitation rate ceilings as proposed by the co-managers, may not occur for several Puget Sound populations.
2. For the Skagit summer/fall run, the co-managers proposed exploitation rate ceiling of 48 percent (%) for the summer/fall aggregate population is higher than the NMFS' updated RERs for two of the three component populations—Upper Skagit (45%) and Lower Skagit (36%)—but lower than the 49% RER for the Lower Sauk population. Given the following conditions, we expect that the final objective that is produced during the preseason planning process will meet conservation needs for the population:
 - a. the likely constraints on 2019 SUS pre-terminal harvest due to the low abundance status of several Puget Sound stocks (as described above);
 - b. the recent status and trends of the natural-origin components of these Skagit populations—5 and 10-year natural-origin escapement average shows all three populations well above critical abundance levels and two of three above rebuilding abundance levels, with the third very near rebuilding levels;
 - c. recent 5-year average total exploitation rate below 40%; and
 - d. the 2019 natural-origin forecast is near the recent 5-year average.
3. Similarly, for the Skagit River spring run, the co-managers proposed exploitation rate ceiling (37.5%), on the aggregate spring run, is higher than NMFS' updated RERs of 24%, 32%, and 36%, respectively, for the Upper Sauk, Suiattle, and Cascade populations. Given the following

conditions we expect that the final objective that is produced during the preseason planning process will meet conservation needs for the population:

- a. the likely constraints on pre-terminal harvest due to the low abundance status of several Puget Sound stocks (as described above);
 - b. the recent status and trends of the natural-origin components of these populations—5 and 10-year natural-origin escapement average shows all three populations above rebuilding abundance levels;
 - c. recent 5-year average total exploitation rate below 20%; and
 - d. the 2019 natural-origin forecast above the recent 5-year average.
4. For the Stillaguamish River, the co-manager's proposed exploitation total rate ceiling (24%), on the summer/fall run, is higher than NMFS' updated RER of 22%. As mentioned in the text above, the Stillaguamish run is forecast to be at very low abundance this year and has been proposed to be managed for a SUS exploitation rate of no greater than 8%. This 8% SUS limit could be further reduced if northern exploitation rates in 2019 exceed 16% (the total rate cannot exceed 24% under the RMP). The recent 5-year average total exploitation rate for the Stillaguamish population has been 23%, with 9.2% of this occurring in the SUS and 13.8% in northern fisheries. The co-manager's proposed SUS critical exploitation rate (maximum 8%) combined with the recent years' northern exploitation rates as a reasonable assumption for this year's fishery would result in an exploitation rate at or below the NMFS RER. We expect that the final objective that is produced during the preseason planning process will meet conservation needs for the population.
5. For the Snohomish River, the co-manager's proposed exploitation ceiling (21%), on the summer/fall run aggregate, is higher than NMFS' updated RERs of 19% and 20%, respectively, for the summer and fall components. Given the following conditions we expect that the final objective that is produced during the preseason planning process will meet conservation needs for the population:
- a. the likely constraints on pre-terminal harvest due to the low abundance status of several Puget Sound stocks (as described above);
 - b. the recent status and trends of the natural-origin components of these populations—5 and 10-year natural-origin escapement average shows both populations above rebuilding abundance levels; and
 - c. recent 5-year average total exploitation rate below 20%.
6. For the Mid-Puget Sound fall Chinook populations—Green River, Puyallup River and Lake Washington— based on discussions with the co-managers, we have developed interim conservation objectives for the 2019 fishing season. These objectives represent recent-year average natural-origin spawner escapement, in the Green and Puyallup Rivers, and a natural-origin spawner escapement goal in the Cedar River (Lake WA) which looks to maximize spawner productivity. These interim objectives conserve recent gains in natural-origin escapement, consistent with these populations' role in recovery of the ESU. In all three of these

systems, hatchery broodstock collection goals are additional, important objectives that can limit the overall attainable harvest rates. Additionally, in the Green and Puyallup River systems, natural-origin adults can be captured at the hatchery facilities. These natural-origin fish are utilized in the hatchery program broodstock but adults that are in excess of that need can be transported to spawning reaches in the rivers to contribute to the natural-origin spawning objective. We expect that the co-manager's fishery management actions, in the case of Lake Washington, and fishery management actions and hatchery broodstock actions in the Green and Puyallup Rivers, for 2019 will result in spawning ground escapements that meet the objectives outlined in Table 4. We anticipate that these objectives will meet conservation needs for the populations.

If, during the North of Falcon process, circumstances are inconsistent with our expectations, we will work with the co-managers to develop appropriate measures.

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Table 4. NMFS' guidance for Puget Sound Chinook salmon conservation objectives for the 2019 fishing year.

Management Unit/Population	NMFS' Exploitation Rate Ceilings or Escapement objectives (Grayed/Bolded cells are agreed-to by NMFS and the Puget Sound Co-managers)		Puget Sound Co-manager's Proposed Exploitation Rate Ceilings	
	Total	Southern U.S. (SUS)	Total	Southern U.S. (SUS)
Nooksack spring NF Nooksack SF Nooksack	-	10.5%	-	10.5%
Skagit Summer/Fall Upper Skagit Lower Skagit Lower Sauk	See Bullet 2 above	-	48%	-
Skagit Spring Suiattle Upper Sauk Cascade	See Bullet 3 above	-	37.5%	-
Stillaguamish^a NF Stillaguamish SF Stillaguamish	See Bullet 4 above	-	24%	8%
Snohomish Skykomish Snoqualmie	See Bullet 5 above	-	21%	
Lake Washington Cedar River	500 NOR spawners in the Cedar River (bullet 6 above)	-	500 Escapement (13% PT SUS)	
Green	A combination of fishery and NOR broodstocking actions taken to achieve a minimum of 1,200 NOR spawners (bullet 6 above).	-	2,003 Escapement (13% PT SUS)	
White River		22% ^b	22%	
Puyallup	A combination of fishery and NOR broodstocking actions taken to achieve a minimum of 750 NOR spawners (bullet 6 above).	-	1,170 Escapement (13% PT SUS)	
Nisqually^c	49% (47% base +2% for experimental selective fishery)	-	49% Total (47% + no more than 900 fish experimental selective fishery)	
Skokomish^d	50%	-	50%	
Mid-Hood Canal	-	12.0% PT SUS	-	12% PT SUS
Dungeness	-	10.0%	-	10% SUS
Elwha	-	10.0%	-	10% SUS

^a Provisions of the 2018 RMP state that the total exploitation rate (including AK and Canadian salmon fisheries) cannot exceed 24%. If northern fisheries exceed 11%, Southern U.S. impacts will be lowered to maintain Natural Origin Recruit impacts to not exceed a 24% exploitation rate.

^b NMFS expects Canadian fisheries to remain constrained similar to the recent 5 years. Therefore, the total exploitation rate for White River Chinook salmon in 2019 is expected to be 28% or less.

^c Implementation of experimental selective fishery in 2019 is dependent on NMFS receipt of rationale for 2% increase to the 47% ceiling and detailed implementation plan for the experimental fishery prior to completion of the biological opinion.

^d Skokomish LAT is escapement of 800 natural spawners and 500 escapement to the hatchery. Anticipated hatchery or natural escapements below these spawner abundances trigger specific additional management actions. Contingent on continued implementation of the provisions of the Addendum to 2014 Plan for Management of Fall Chinook salmon in the Skokomish River (October 31, 2015).

In summary, while the primary purpose of this document is to provide guidance for the Council salmon fisheries in 2019, we acknowledge the importance of the integrated management structure between the Council and North of Falcon planning processes. Because impacts on Puget Sound Chinook salmon in Council fisheries are low, management actions taken to meet the above-described conservation objectives will occur primarily in Puget Sound fisheries. However, since impacts in both fisheries are considered in meeting the objectives, any delay in reaching the necessary agreements through the North of Falcon process by the end of the April 2019 Council meeting will complicate NMFS' ability to approve regulations for Council area fisheries and to complete the biological opinion for Puget Sound fisheries by May 2019. To avoid such complications, we strongly recommend that the Council provide assurance that the final option adopted at its April 2019 Council meeting, when combined with Puget Sound fisheries negotiated during the North of Falcon process, results in harvest impacts that are consistent with the conservation objectives for each Puget Sound Chinook management unit included in Table 4 based on the anticipated 2019 abundances.

ESA-listed Coho Salmon Species

Oregon Coast (OC) Coho Salmon ESU

Background: The ESA listing status of the OC coho ESU has changed over the years. Since February 2008, the OC coho ESU has been ESA-listed as threatened. Regardless of its listing status, the Council has managed OC coho consistent with the terms of Amendment 13 of the FMP as modified by the Council's 2000 ad-hoc OC Natural Coho Workgroup. NMFS concluded in its 1999 ESA section 7 consultation on Amendment 13 to the FMP that management of fisheries consistent with the Amendment was not likely to jeopardize this ESU. The 2000 modifications to the framework in Amendment 13 added management tiers to address lower marine survival and parent brood conditions. With these modifications, the framework has provided equivalent and/or additional restrictions on the ocean salmon fishery for OC coho salmon when compared to the provisions of the 1999 opinion. Therefore, reinitiation of consultation was not required.

Prior to FMP Amendment 13 (January 1999), coho originating in coastal Oregon streams from the Necanicum River in the north to the Winchuck River in the south were managed as one aggregate stock, Oregon Coast Natural (OCN) coho. Amendment 13 disaggregated OCN coho management into four sub-aggregates: northern (Necanicum River to Neskowin River), north central (Salmon River to Siuslaw River), south central (Siltcoos River to Sixes River), and southern (Elk River to

Winchuck River). Three of these (northern, north central, and south central) comprise the OC coho ESU. The southern sub-aggregate is within the Southern Oregon/Northern California Coastal coho ESU (SONCC coho), discussed below. Additionally, under Amendment 13, allowable fishery impact rates for OC coho are set based on measures of parental escapement and marine survival. Impact rates are set for each of the three OC coho sub-aggregates, with the ocean impacts rate being limited by the lowest of the three.

Guidance: For the 2019 season, the spawner status for the northern sub-aggregate is high, the north-central sub-aggregate is low, and the south-central sub-aggregate is medium. The marine survival index is in the low category. Under these circumstances, the 2000 Workgroup report⁵ requires that the total exploitation rate in 2019 marine and freshwater fisheries be limited to no more than 15 percent for all three of the OC coho sub-aggregates. Although the south sub-aggregate is included in the harvest matrix described in Amendment 13 as modified by the 2000 Workgroup, as described above the south sub-aggregate is part of the Southern Oregon/Northern California Coastal coho ESU and is managed subject to provisions that are described below for that ESU consistent with the 1999 opinion referenced above.

For 2019, fishery managers should continue to coordinate ocean fishery impacts with desired terminal fishery opportunities for wild coho salmon to ensure that the impacts for each of the sub-aggregates remain within the overall limits specified for the sport fishery consistent with the Fishery Management and Evaluation Plans for the rivers and lakes of the OC coho ESU⁶. For 2019, the ocean fisheries plus the specific river sport fisheries are subject to a limit of 15 percent in each sub-aggregate.

Lower Columbia River (LCR coho) Coho Salmon ESU

Background: The LCR coho ESU was listed as threatened under the ESA in 2005. In 2014, the Council recommended a harvest management matrix for managing impacts to LCR coho. NMFS completed a biological opinion concluding that Council fisheries managed using this matrix are not likely to jeopardize LCR coho. The matrix and the 2015 opinion provides the basis for our guidance in 2019.

The total exploitation rate limit for LCR coho is set each year based on measures of parental escapement and marine survival (Table 5). The total exploitation rate on LCR coho salmon in all marine area fisheries and fisheries in the mainstem Columbia River below Bonneville Dam must not exceed the year-specific exploitation rate limit.

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⁵ OCN Work Group Report, dated October 12, 2000: https://www.pcouncil.org/bb/2000/1100/B3b_OCN_WGR_Nov00BB.pdf

⁶ NMFS. 2009. Letter from Barry Thom, NMFS, to Ed Bowles, ODFW, dated September 1, 2009, concurring with ODFW's "Oregon Coastal Coho, Coastal Rivers Coho Sports Fishery" Fisheries Management and Evaluation Plan under limit 4 of the 4(d) rule.

Table 5. Harvest management matrix for LCR coho showing allowable fishery exploitation rates based on parental escapement and marine survival index.

Parental Escapement (rate of full seeding)		Marine Survival Index (based on return of jacks per hatchery smolt)					Allowable exploitation rate
		Very Low (≤ 0.06%)	Low (≤ 0.08%)	Medium (≤ 0.17%)	High (≤ 0.40%)	Very High (> 0.40%)	
Normal	≥ 0.30	10%	15%	18%	23%	30%	
Very Low	< 0.30	≤ 10%	≤ 15%	≤ 18%	≤ 23%	≤ 30%	

The 2015 opinion called for a review of the abundance-based management framework every three years or as needed to consider new information. NMFS is finalizing its recommended harvest framework review in March 2019, a draft of which was provided to the Council in November 2018 inviting their review and comment. The harvest framework review included information about, forecast methods, natural-origin spawner escapement, proportion of hatchery-origin spawners, marine survival, and other information used in the Beamesderfer et al. (2014) risk analysis⁷. Results of the harvest framework review did not suggest changes to the approach at this time. However, a longer time series of data is needed to allow for a more comprehensive review that would include comparisons of the estimates of exploitation rates from FRAM to independent exploitation rate estimates derived from coded-wire tag groups.

Guidance: For the 2019 season, parent escapement is in the normal category. The marine survival index is in the high category. Therefore, Council fisheries in 2019 should be managed such that the total exploitation rate in all fisheries on LCR coho below Bonneville Dam does not exceed 23 percent.

Southern Oregon/Northern California Coastal (SONCC) Coho Salmon ESU

Background: The SONCC coho ESU has been listed as threatened under the ESA since 1997. The current consultation standard for SONCC coho, described in the FMP, is from a 1999 NMFS biological opinion. The Rogue/Klamath coho hatchery stock is used as an indicator of fishery impacts on SONCC coho.

Guidance: 2019 fisheries should be consistent with the consultation standard, which requires that management measures developed under the FMP achieve an ocean exploitation rate on Rogue/Klamath coho hatchery stocks of no more than 0.13.

⁷ Beamesderfer, R., S. Ellis, J. Jording, C. Kern, C. LeFleur, D. Milward, E. Patiño, A. Rankis, and J. Whisler. 2014. Allowable Fishery Impacts To Lower Columbia River Natural Coho. A Review of the 2006 Harvest Control Rule for Possible Policy Reconsideration. Pages 53 p in PFMC, editor. Lower Columbia River Natural Coho Workgroup.

Central California Coastal (CCC) Coho Salmon ESU

Background: The CCC coho ESU was listed as threatened under the ESA in 1996 and relisted as endangered in 2005. The current consultation standard for CCC coho is from a 1999 NMFS biological opinion. Information on past harvest or non-retention mortality rates is lacking for CCC coho. In the absence of more specific information, the consultation standard requires that directed fishing for coho and retention of coho in Chinook salmon-directed fisheries be prohibited off California.

CCC coho are one of eight species identified in NMFS' "Species in the Spotlight" initiative because it is at high risk of extinction. For more information about actions for its conservation and recovery, please refer to its Species in the Spotlight Priority Action Plan.⁸

Guidance: 2019 fisheries should be consistent with the consultation standard to prohibit directed fishing for coho and retention of coho in Chinook salmon-directed fisheries off California.

ESA-listed Chum Salmon Species

Hood Canal Summer-run Chum Salmon ESU

Background: Chum salmon are not targeted and are rarely caught in Council salmon fisheries. However, the FMP requires fisheries to be managed consistent with NMFS' ESA standards for listed species, which includes the Hood Canal summer-run chum salmon ESU. The Summer Chum Salmon Conservation Initiative⁹, approved by NMFS under Limit 6 of the ESA 4(d) Rule describes the harvest actions that must be taken to protect listed Hood Canal summer-run chum salmon both in Washington fisheries managed under the jurisdiction of the Council and Puget Sound fisheries managed by the state and tribal fishery managers.

Under the terms of the Conservation Initiative, chum salmon must be released in non-treaty sport and troll fisheries in Washington catch Area 4 from August 1 through September 30. The Conservation Initiative does not require release of chum salmon in tribal fisheries in catch Area 4 during the same period, but does recommend that release provisions be implemented. As in previous years, tribal managers will discuss implementation of these provisions during the North of Falcon planning process.

Guidance: 2019 Council fisheries should be managed consistent with the terms of the Chum Salmon Conservation Initiative.

⁸ <https://www.fisheries.noaa.gov/species/coho-salmon-protected/spotlight>

⁹ Washington Department of Fish and Wildlife and Point No Point Treaty Tribes. 2000. Summer Chum Salmon Conservation Initiative: An Implementation Plan to Recover Summer Chum in the Hood Canal and Strait of Juan de Fuca Region. Dated April 2000. 797 p.

ESA-listed Sockeye Salmon Species

Snake River Sockeye Salmon and Ozette Lake Sockeye Salmon ESUs

Background: Sockeye salmon are rarely caught in Council salmon fisheries. In previous biological opinions, NMFS determined that Council fisheries were not likely to adversely affect Snake River or Ozette Lake sockeye salmon.

Guidance: Management constraints in the 2019 ocean fisheries for the protection of listed sockeye salmon are not considered necessary.

ESA-listed Steelhead Species

Background: One Distinct Population Segment (DPS) of steelhead is currently listed as endangered, and ten DPSs are listed as threatened in Washington, Oregon, Idaho, and California. All eleven ESA-listed DPSs have been considered in NMFS' biological opinions on the effects of Council fisheries. Steelhead are rarely caught in ocean fisheries and retention of steelhead in non-treaty commercial ocean fisheries is currently prohibited.

Guidance: Based on currently available information, we conclude that no additional measures are required at this time to avoid effects not already considered in prior opinions. The Council and states should continue to prohibit the retention of steelhead with intact adipose fins in ocean recreational fisheries and we encourage the same in treaty tribal fisheries to minimize the effect of whatever catch may occur.

The NMFS West Coast Region looks forward to working with the Council to develop 2019 ocean salmon fisheries consistent with the conservation and management objectives of the FMP, the Magnuson-Stevens Fishery Management and Conservation Act, and the ESA. We are committed to working with the Council to address the issues outlined in this letter. If you have questions, please contact Ryan Wulff, Assistant Regional Administrator for Sustainable Fisheries at 916-930-3733 or Ryan.Wulff@noaa.gov.

Sincerely,



Barry A. Thom
Regional Administrator

cc: Chuck Tracy, Executive Director, Pacific Fishery Management Council
Ryan Wulff, Assistant Regional Administrator for Sustainable Fisheries, NMFS WCR