




UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
1201 NE Lloyd Boulevard, Suite 1100  
PORTLAND, OREGON 97232

April 29, 2021

**To:** File

**From:** Scott M. Rumsey, Ph.D.   
U.S. Federal Commissioner, Pacific Salmon Commission  
Deputy Regional Administrator

**Subject:** RE: Biological Opinion on the Delegation of Management Authority for Specified Salmon Fisheries to the State of Alaska – Status Update on the Hatchery Production Initiative for Southern Resident Killer Whales

## Introduction

The Pacific Salmon Treaty (PST) provides a framework for the United States and Canada to cooperate on the management of Pacific salmon. A high degree of cooperation is required to prevent overfishing, provide optimum production, and ensure that each country receives benefits that are equivalent to the production of salmon in its waters. In 2019, the National Marine Fisheries Service (NMFS) completed a biological opinion on the effects of domestic actions associated with implementing the 2019-2028 PST Agreement (NMFS 2019). One of the domestic actions associated with implementation of the new PST agreement was the delegation of management authority for specified salmon fisheries to the state of Alaska. Another domestic action was a funding initiative for the conservation of Endangered Species Act (ESA)-listed Puget Sound Chinook salmon (threatened), and Southern Resident killer whales (SRKW) (endangered) (“PST Funding Initiative”). The funding for conservation of SRKW was to increase hatchery production to provide additional prey for SRKW (“Hatchery Production Initiative for SRKW”). NMFS’ 2019 biological opinion describes the PST Funding Initiative as follows:

A preliminary design of the SRKW hatchery production program was developed, and is described below, in order to provide cost estimates and further definition for how the program should be designed and implemented to achieve the “meaningful increase” in prey availability that is intended. The preliminary design should be used as a benchmark for evaluating the program that will presumably be funded and implemented. However, there is flexibility to adjust the design to account for new information so long as the key objective of the program is met. By key objective we focus in particular on the intention to increase prey availability by 4-5 percent in areas that are most important to SRKWs as described below.

The new production should be distributed broadly to supplement prey abundance in Puget Sound in the summer and offshore areas in the winter, times and areas that have been identified as most limiting. The hatchery production program would operate each year at



a cost of no less than \$5.6 million per year, including an adjustments for administrative overhead. The goal of the hatchery production initiative for supplementing prey abundance is to provide a “meaningful” increase in the abundance of age 3-5 Chinook salmon in the times and areas most important to SRKWs. It would be prioritized to increase abundance in inside areas (Puget Sound) in the summer and outside areas (coastal) during the winter where we believe prey abundance is most limiting (Dygert et al. 2018). For the estimated cost per year an additional 20 million Chinook salmon smolts could be expected. Five or six million smolts should come from facilities in Puget Sound with the remainder from the Washington coast and Columbia River. This disproportionate distribution results from the fact that the abundance of Chinook salmon in the ocean is about three times higher than it is in the Puget Sound. Increasing production by 20 million smolts with the above described distribution is expected to increase prey abundance by 4-5 percent in inside areas in the summer and coastal areas in the winter (Dygert et al. 2018).

For purposes of this analysis, we assume that funding for the conservation program for Puget Sound Chinook salmon and SRKW will be forthcoming largely as described, and the program will be implemented during the duration of the new Chinook salmon regime as proposed. The benefits from reduction in harvest in SEAK and other fisheries resulting from the new PST Agreement will be effective immediately. However, it is important to note that the effects assumed in the analysis related to the funding initiative will not take place for at least four to five years into the future as funding is attained, fish from the conservation hatchery programs reach maturity in the oceans and productivity improvements are realized from the habitat mitigation. We recognize that there is a degree of uncertainty regarding whether Congress will provide the funding, in whole or in part, that was agreed to by the U.S. Section in a timely manner. In the event the required funding is not provided in time for actions to take effect during the agreement, or if the anticipated actions are not otherwise implemented through other means (e.g., non-fishing related restoration activities, other funding sources), this may constitute a modification to the proposed action that could result in effects on Puget Sound Chinook salmon and SRKW not considered in this opinion. If this was answered in the affirmative, reinitiation of consultation would therefore be required. See 50 CFR section 402.16(c). We expect this opinion and ITS to remain in place during the interim should reinitiation occur.

### **Washington State Funding for SRKW Prey**

In response to recommendations from the Washington State Southern Resident Killer Whale Task Force (2018), and consistent with the Hatchery Production Initiative for SRKW, the Washington State Legislature provided ~\$13 million of funding “prioritized to increase prey abundance for southern resident orcas” (Engrossed Substitute House Bill 1109) for the 2019-2021 biennium (July 2019 through June 2021). In 2020, over 10.8 million additional hatchery-origin Chinook salmon were released to augment the SRKW prey base. More than 10.1 million additional hatchery-origin Chinook salmon are anticipated for release in 2021 (Table 1).

The Washington State legislature also provided funds to increase production of coho and chum salmon in the 2019-2021 biennium budget. With these funds, an addition 2.25 million coho and 2.42 million chum salmon were released in 2020, and an additional 3.11 million coho and 5.43 million chum salmon are expected to be released in 2021.

The Washington State legislature just passed its 2021-2023 biennium budget, and allocated a similar level of funds as under the 2019-2021 biennium for increased hatchery production for SRKW.

### **PST Implementation Funding for SRKW Prey**

For FY20, the U.S. Commissioners allocated \$5.6 million of the PST federal appropriation to complement the state funded hatchery production. Of this \$5.6 million, \$738,509 was reserved by NMFS for administrative costs and the remainder was available for grants.

Proposals for new hatchery production and associated infrastructure were solicited from the Treaty tribes of western Washington and the Columbia River Basin, U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, and other operators of hatchery programs in the region. The following criteria were used to prioritize funding for candidate programs:

- Criteria 1: Increased hatchery production should be for Chinook salmon stocks that are a high priority for SRKW (NMFS and WDFW 2018; Ad-hoc PFMC SRKW Workgroup 2020)
- Criteria 2: Increased production should be focused on stocks that are a high priority for SRKW (NOAA and WDFW 2018), but funding should be distributed so that hatchery production is increased across an array of Chinook salmon stocks from different geographic areas and run timings (i.e., a portfolio)
- Criteria 3: Increased production cannot jeopardize the survival and recovery of any Endangered Species Act (ESA)-listed species, including salmon and steelhead
- Criteria 4: Because of funding and timing constraints, increased production proposals should not require major capital upgrades to hatchery facilities
- Criteria 5: All proposals should have co-manager agreement, as applicable
- Criteria 6: All increased production must be reviewed under the ESA and National Environmental Policy Act (NEPA), as applicable, before NMFS funding can be used

Table 2 describes the hatchery programs that were funded in FY20 with PST funds. This production is in addition to the hatchery production funded by the Washington State Legislature for the 2019-2021 biennium (Table 1). As a result of the FY20 PST funds, 750,000 hatchery-origin Chinook salmon were released in 2020, and 8.25 million are expected to be released in 2021.

For FY21, the U.S. Commissioners increased the allocation of the PST federal appropriation to support the Hatchery Production Initiative for SRKW. In FY21, \$7.4 million of the PST Federal appropriation will be used to increase SRKW prey. The same process and criteria will be used for making decisions in FY21 as were used in FY20. NMFS expects to have a final list of proposals for increased production and infrastructure upgrades by early May 2021. At that time, we can provide an updated table on increased production for SRKW with FY21 funds.

### **Chinook Production to Date**

As a result of the FY20 PST funding and 2019-2021 Washington State Legislature funding supporting the hatchery production of SRKW prey, over 11.6 million additional hatchery-origin Chinook salmon were released in 2020, and over 18.3 million additional hatchery-origin Chinook salmon are expected to be released in 2021 relative to the base period considered in NMFS' 2019 biological opinion on the delegation of management authority for specified salmon fisheries to the State of Alaska (NMFS 2019; Table 1; Table 2).<sup>1</sup>

### **Conclusion**

Overall, funding for the Hatchery Production Initiative for SRKW has been higher than what was anticipated in the 2019 biological opinion. The PST spend plan for FY21 increased the allocation of funding for the Hatchery Production Initiative for SRKW from \$5.6 million to \$7.4 million. In addition, a smaller proportion of the allocated funds are expected to be needed for infrastructure upgrades such as marking trailers and backup generators after FY21. Therefore, a higher proportion of the funds should directly support production of Chinook salmon in future years. In addition, Washington State has funded a significant amount of additional Chinook production, and is anticipated to continue that funding.

The 2019 biological opinion acknowledged that the benefits of the Hatchery Production Initiative for SRKW would not take place for at least four to five years into the 2019-2028 PST Agreement as funding was attained and fish from the hatchery programs reached maturity in the oceans where they would become available as prey for SRKW. Therefore, at this time, NMFS concludes that the Hatchery Production Initiative for SRKW is on track to provide the biological effects that were anticipated in the 2019 biological opinion (i.e., a 4-5 percent increase in prey abundance in inside areas in the summer and coastal areas in the winter). However, we will continue to monitor fish survival to ensure production increases lead to the anticipated biological effects.

---

<sup>1</sup> In addition to the new Chinook production, an additional 2.25 million coho and 2.42 million chum salmon were released in 2020, and an additional 3.11 million coho and 5.43 million chum are expected to be released in 2021. Although increased production for coho and chum salmon was not included as part of the proposed action evaluated in the 2019 biological opinion, a recent study (Hanson et al. 2021) found that coho and chum salmon are important prey to SRKW during certain periods of the year.

## References

- Ad-hoc PFMC SRKW Workgroup. 2020. Pacific Fishery Management Council Salmon Fishery Management Plan impacts to Southern Resident Killer Whales. Final Draft Risk Assessment. Pacific Fisheries Management Council. February 2020. 164p.
- Dygert, P., A. Purcell, and L. Barre. 2018. Memorandum to Bob Turner (NMFS) from Peter Dygert (NMFS). Hatchery production initiative for increasing prey abundance of Southern Resident Killer Whales. August 1, 2018. NMFS, Seattle, Washington. 3p.
- Hanson, M. B., C. K. Emmons, M. J. Ford, M. Everett, K. Parsons, L. Park, J. Hempelmann, D. M. V. Doonik, G. S. Schorr, J. Jacobsen, M. F. Sears, M. S. Sears, J. G. Sneva, R. W. Baird, and L. Barre. 2021. Endangered predators and endangered prey: seasonal diet of Southern Resident killer whales. PLoS ONE. 16(3): e0247031. <https://doi.org/10.1371/journal.pone.0247031>.
- NOAA and WDFW (National Oceanic and Atmospheric Administration and Washington Department of Fish and Wildlife). 2018. Southern Resident Killer Whale Priority Chinook Stocks Report. June 22, 2018. 8p.
- NMFS. 2019. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response. Consultation on the Delegation of Management Authority for Specified Salmon Fisheries to the State of Alaska. NMFS Consultation Number: WCR-2018-10660. April 5, 2019. 443 p.
- Washington State Southern Resident Orca Task Force – Report and Recommendations. 2018. November 16, 2018. 148 p.

**Table 1. Washington State Funded Increased Hatchery Production for SRKW Prey in the 2019-2021 biennium**

| Facility             | Region         | Species | Entity                    | Increased Proposal<br>(# of smolts) | Brood Source  | Release Location | 2019 Release<br>(# of smolts) | 2020 Release<br>(# of smolts) | Anticipated 2021 Release<br>(# of smolts) |
|----------------------|----------------|---------|---------------------------|-------------------------------------|---------------|------------------|-------------------------------|-------------------------------|---|
| Kendall              | Puget Sound    | Sp. CK  | WDFW                      | 500,000                             | Kendall       | Kendall          | 660,527                       | 421,381                       | 500,000                                   |
| Whatcom Cr.          | Puget Sound    | F. CK   | WDFW                      | 500,000                             | Samish        | Whatcom Cr.      | 200,000                       | 670,000                       | 500,000                                   |
| Hupp Springs         | Puget Sound    | Sp. CK  | WDFW                      | 500,000                             | Minter        | Hupp             | 259,873                       | 388,909                       | 500,000                                   |
| Samish               | Puget Sound    | F. CK   | WDFW                      | 1,000,000                           | Samish        | Samish           | 1,089,148                     | 1,217,867                     | -   |
| Wallace River        | Puget Sound    | Sum. CK | WDFW                      | 400,000                             | Wallace River | Wallace River    | -                             | 260,745                       | 500,000                                   |
| Wallace River        | Puget Sound    | Sum. CK | WDFW                      | 100,000                             | Wallace River | Wallace River    | -                             | 34,938                        | 100,000                                   |
| Soos/Palmer          | Puget Sound    | F. CK   | WDFW                      | 2,000,000                           | Green River   | Palmer           | 282,638                       | 1,210,986 <sup>a</sup>        | -   |
| Marblemount          | Puget Sound    | Sp. CK  | WDFW                      | 400,000                             | Marblemount   | Marblemount      | -                             | 203,095                       | 410,000                                   |
| Sol Duc              | WA Coast       | Sum. CK | WDFW                      | 500,000                             | Sol Duc       | Sol Duc          | 500,143                       | 582,479                       | 500,000                                   |
| Sol Duc              | WA Coast       | Sum. CK | WDFW                      | 0                                   | Sol Duc       | Sol Duc          | -                             | -                             | 75,000                                    |
| Humtulpils *         | WA Coast       | F. CK   | WDFW                      | 500,000                             | Humtulpils    | Humtulpils       | -                             | -                             | -   |
| Minter               | Puget Sound    | F. CK   | WDFW                      | 400,000                             | Minter        | Minter           | 763,333                       | 321,497                       | 400,000                                   |
| Naselle              | WA Coast       | F. CK   | WDFW                      | 2,500,000                           | Naselle       | Naselle          | -                             | -                             | 1,400,000                                 |
| Forks Creek          | WA Coast       | F. CK   | WDFW                      | 50,000                              | Forks Creek   | Forks Creek      | 567,560                       | 2,278,497                     | 400,000                                   |
| Wells Hatchery       | Columbia River | Sum. CK | DPUD                      | 500,000                             | Wells         | Wells Hatchery   | 0                             | 541,299                       | 500,000                                   |
| Quinault Lake        | WA Coast       | F. CK   | Quinault Indian Nation    | 500,000                             | Quinault      | Quinault Lake    | -                             | -                             | 500,000                                   |
| Sol Duc/Bear Springs | WA Coast       | Sum. CK | Quileute Tribe            | 75,000                              | Sol Duc       | Bear Springs     | -                             | 70,000                        | 70,000                                    |
| Wilkeson Creek       | Puget Sound    | F. CK   | Puyallup Tribe of Indians | 1,075,200                           | Voights       | Wilkeson Creek   | -                             | 728,587                       | 1,075,200                                 |

| Facility                     | Region         | Species  | Entity                    | Increased Proposal<br>(# of smolts) | Brood Source            | Release Location             | 2019 Release<br>(# of smolts) | 2020 Release<br>(# of smolts) | Anticipated 2021 Release<br>(# of smolts) |
|------------------------------|----------------|----------|---------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------|-------------------------------|---|
| White River                  | Puget Sound    | Sp. CK   | Muckleshoot Indian Tribes | 200,000                             | White River             | White River                  | -                             | -                             | 200,000                                   |
| Squaxin/South Sound Net Pens | Puget Sound    | F. CK    | Squaxin Island Tribe      | 500,000                             | Deschutes / Green River | Squaxin/South Sound Net Pens | -                             | -                             | -   |
| Lummi Bay Hatchery           | Puget Sound    | Sp. CK   | Lummi Nation              | 500,000                             | Kendall                 | Lummi Bay                    | -                             | 50,000                        | 500,000                                   |
| Skookum Creek                | Puget Sound    | Early CK | Lummi Nation              | 1,000,000                           | Skookum Creek           | Skookum Cr.                  | -                             | 870,000                       | 1,000,000                                 |
| Klickitat Hatchery           | Columbia River | F. CK    | Yakama Nation             | 1,000,000                           | Klickitat/Little White  | Klickitat River              | -                             | 1,000,000                     | 1,000,000                                 |
| Lewis River                  | Columbia River | Sp. CK   | WDFW                      | -                                   | Lewis River             | Lewis River                  | 944,425                       |                               | 316,000                                   |
| <b>TOTAL</b>                 |                |          |                           |                                     |                         |                              | <b>4,323,222</b>              | <b>10,850,280</b>             | <b>10,130,200</b>                         |

<sup>a</sup> Partially funded by PST with FY19 funds

SP CK = spring Chinook; F. CK = fall Chinook; WDFW = Washington Department of Fish and Wildlife

**Table 2. Programs that received FY20 PST funding for the Hatchery Production Initiative for SRKW**

| Facility                                  | Region         | Species     | Entity        | Increased Proposal (# of smolts)            | Brood Source        | Release Location           | 2020 Release (# of smolts) | Anticipated 2021 Release (# of smolts) | Anticipated 2022 Release (# of smolts) | Operating Cost         | Infrastructure Cost | Total Cost  |
|---|----------------|-------------|---------------|---|---------------------|----------------------------|----------------------------|--|--|------------------------|---------------------|-------------|
| Tulalip Bernie Gobin Hatchery             | Puget Sound    | Sum CK      | Tulalip Tribe | 1,000,000                                   | Wallace             | Tulalip Bay                | -                          | 1,000,000                              | 2,000,000                              | \$555,914              | \$783,414           | \$1,339,328 |
| Tulalip Bernie Gobin Hatchery             | Puget Sound    | Sum CK      | RCO overhead  | -   | N/A                 | -                          | -                          | -                                      | -                                      | -                      | -                   | \$55,180    |
| Soos Creek Hatchery                       | Puget Sound    | F. CK       | WDFW          | 2,000,000                                   | Green River         | Green River                | -                          | 2,000,000 <sup>c</sup>                 | -                                      | \$245,559              | -                   | \$245,559   |
| Soos Creek Hatchery                       | Puget Sound    | F. CK       | RCO overhead  | -   | N/A                 | -                          | -                          | -                                      | -                                      | -                      | -                   | \$10,117    |
| Partial funding for NWIFC marking trailer | Puget Sound    | All         | NWIFC         | -   | N/A                 | -                          | -                          | -                                      | -                                      | -                      | \$500,000           | \$500,000   |
| Partial funding for NWIFC marking trailer | Puget Sound    | All         | RCO overhead  | -   | N/A                 | -                          | -                          | -                                      | -                                      | -                      | -                   | \$20,600    |
| Marion Drain Hatchery                     | Columbia River | Sum. CK     | Yakama Nation | 500,000                                     | Entiat/Wells/Chelan | Yakima River               | -                          | 500,000                                | -                                      | \$43,000               | -                   | \$43,000    |
| Select-Area Fishery Enhancement (SAFE)    | Columbia River | Sp. CK      | ODFW          | 1,320,000 <sup>a</sup>                      | Willamette River    | Youngs Bay or Tongue Point | -                          | 1,400,000                              | -                                      | \$600,000              | -                   | \$600,000   |
| SAFE                                      | Columbia River | Sp. CK      | ODFW          | 1,500,000                                   | Willamette River    | Youngs Bay or Tongue Point | -                          | -                                      | 1,500,000                              | \$251,477 <sup>b</sup> | -                   | \$251,477   |
| Umatilla Hatchery                         | Columbia River | F. CK (URB) | ODFW          | 120,000                                     | Little White        | Umatilla River             | 120,000                    | -                                      | -                                      | \$30,000               | -                   | \$30,000    |
| Parkdale Hatchery                         | Columbia River | Sp. CK      | CTWSR         | Not enough BS; Funds need to be reallocated | Hood River          | N/A                        | -                          | -                                      | -                                      | \$31,230               | -                   | \$31,230    |



| Facility  | Region         | Species       | Entity | Increased Proposal (# of smolts)                     | Brood Source               | Release Location   | 2020 Release (# of smolts) | Anticipated 2021 Release (# of smolts) | Anticipated 2022 Release (# of smolts) | Operating Cost     | Infrastructure Cost | Total Cost         |
|---|----------------|---------------|--------|--|----------------------------|--------------------|----------------------------|--|--|--------------------|---------------------|--------------------|
| Round Butte Hatchery                              | Columbia River | Sp. CK        | ODFW   | Not enough BS. Funds reallocated to Bonneville tules | Deschutes River            | N/A                | -                          | -                                      | -                                      | \$0                | -                   | \$0                |
| Bonneville Hatchery                               | Columbia River | F. CK (tules) | ODFW   | 200,000  | Bonneville Pool            | Columbia River     | -                          | 200,000                                | -                                      | \$25,000           | -                   | \$25,000           |
| Wells Hatchery                                    | Columbia River | Sum. CK       | DPUD   | 500,000  | Wells                      | Columbia River     | -                          | 500,000                                | -                                      | \$170,000          | -                   | \$170,000          |
| Little White/Willard National Fish Hatchery (NFH) | Columbia River | F. CK (URB)   | USFWS  | 630,000  | Little White               | Little White River | 630,000                    | -                                      | -                                      | \$200,000          | -                   | \$200,000          |
| Little White/Willard NFH                          | Columbia River | F. CK (URB)   | USFWS  | 650,000  | Little White               | Little White River | -                          | 650,000                                | -                                      | \$165,000          | \$140,000           | \$305,000          |
| Spring Creek NFH                                  | Columbia River | F. CK (tules) | USFWS  | 2,000,000  | Columbia River Gorge tules | Columbia River     | -                          | 2,000,000                              | -                                      | \$360,000          | \$515,000           | \$875,000          |
| Spring Creek NFH                                  | Columbia River | Sp. CK        | USFWS  | 400,000  | Spring Chinook             | Columbia River     | -                          | -                                      | 400,000                                | \$160,000          | -                   | \$160,000          |
| <b>TOTAL</b>                                      |                |               |        |  |                            |                    | <b>750,000</b>             | <b>8,250,000</b>                       | <b>3,900,000</b>                       | <b>\$2,585,703</b> | <b>\$1,938,414</b>  | <b>\$4,861,491</b> |

<sup>a</sup> Tag codes will be available after the fish are tagged. <sup>b</sup> Additional funding will be needed in FY21 to complete rearing and release of these fish. <sup>c</sup> Partially funded by WDFW RCO = WA's Recreation and Conservation Office; CTWSR = Confederated Tribes of the Warm Springs Reservation of Oregon; DPUD = Douglas Public Utility District; USFWS = United States Fish and Wildlife Service; ODFW = Oregon Fish and Wildlife Service; NWIFC = Northwest Indian Fisheries Commission; BS = broodstock; URB = Upriver Bright fall Chinook salmon; NFH = National Fish Hatchery; SP CK = spring Chinook; F. CK = fall Chinook