SOUTHERN RESIDENT KILLER WHALE WORKGROUP PROGRESS REPORT

National Marine Fisheries Service (NMFS) announced plans to reinitiate Endangered Species Act (ESA) consultation on the effect of Council-area ocean salmon fisheries on Southern Resident killer whales (SRKW) at the March 2019 Pacific Fishery Management Council (PFMC or Council) meeting. At the April 2019 meeting, the Council formed the Ad Hoc SRKW Workgroup (Workgroup) to reassess the effects of Council-area ocean salmon fisheries on the Chinook salmon prey base of SRKW. The Workgroup provides this update to report on the progress made since the Workgroup's inception.

The Workgroup held its first meeting on May 23-24, 2019 in Portland, Oregon which was open to the public. The primary purpose of this first work session was to review the purpose of the Workgroup, discuss the current status of SRKW, exchange ideas regarding risk assessment (RA) methods and criteria for evaluating Council-area ocean salmon fisheries, and to develop a work plan for the first draft of an RA report.

Workgroup purpose

Initiating the first meeting the Workgroup discussed its primary purpose, approved the agenda, reviewed the membership roster, and considered election of a Chair and Vice-Chair. The Workgroup approved the roster (Table 1), but decided to elect two Co-Chairs (Jeromy Jording NMFS and Phil Anderson PFMC), rather than a Chair and Vice-Chair. The election of two Co-Chairs was thought a beneficial approach in representing equally a Council policy/procedure aspect and a NMFS ESA aspect. In addition, the Workgroup outlined a schedule for anticipated meetings that will be needed in order to complete the assignment by November 2019 (Table 2). NMFS also announced the creation of a new webpage that will house materials used and developed by the Workgroup throughout its term.

Workgroup task

The primary tasks of the Workgroup are to first develop an RA which will, to the best of the Workgroup's ability, determine what the effects of Council-area salmon fisheries are to the Chinook salmon prey base of SRKW. The second task will be to potentially recommend conservation measures or management tools that limit Council-area ocean salmon fishery impacts on Chinook salmon prey availability for SRKW, if necessary, based on the risk assessment. At this first meeting the Workgroup discussed what metrics and methods have been used in past section 7 fisheries consultations, and what would be most appropriate to use present day.

Status review of SRKW

Members in attendance from the NMFS West Coast Region (WCR) and Northwest Fisheries Science Center (NWFSC) presented information on the current status of SRKW. Reviewing the current data indicates the population has declined from a peak of 98 whales in 1995 down to 75 whales in March 2019, and future projections under status quo conditions suggest a continued decline over the next 50 years. Critical habitat for SRKW was designated in 2006 which includes physical and biological features such as (1) water quality to support growth and development, (2) prey species of sufficient quantity, quality, and availability to support individual growth,

reproduction, development, and overall population growth, and (3) passage conditions to allow for migration, resting, and foraging. In February 2015, NMFS issued a 12-month finding to revise critical habitat, and expects proposed final revisions by September or October of this year (2019). Additionally, the delisting and downlisting criteria described in the SRKW Recovery Plan (NMFS 2008) were presented.

Since NMFS' 2009 consultation was completed, there has been a new suite of information on SRKW and their prey that was also presented. This included aerial photogrammetry used to monitor growth and body condition (health) of SRKW and which can reliably indicate pregnancy. Photogrammetry was initiated in 2008, but was only sporadically collected until 2015. Since 2016, data has been collected each year during May and September, which also provides a seasonal component to the monitoring, with September sampling generally reflective of a single pod. Regarding new information on whale diets, scientists from the NWFSC have been collecting diet samples during fall and winter months. These samples suggest that Chinook constitutes the majority of the diet in all months, however samples from inland waters suggest the whales transition to coho and chum stocks during fall and early winter. Samples collected from the outer coast indicate a more diverse diet, including groundfish (halibut, lingcod) and steelhead. In 2018, the WCR collaborated with the Science Centers, Washington Department of Fish and Wildlife, and other partners to develop a priority Chinook salmon stock list. This list was developed to prioritize Chinook salmon stocks as prey using three factors: (1) if a stock was observed in SRKW diet samples; (2) if the prey sample was collected during a period of higher likelihood of reduced body condition or during a period of diversified diet (i.e. October – May); and (3) the degree of spatial and temporal overlap a Chinook stock had with SRKW regardless of being observed in diet samples.

Information relating to statistical relationships between SRKW demography and aggregate indices of Chinook salmon abundance was also presented and discussed. The data indicates that although prior reviews supported correlations between the coastwide index of Chinook salmon abundance and SRKW fecundity and survival, the correlation has weakened substantially over time (for example, many of the coastwide Chinook salmon indices have increased since 2007 – though over the same period SRKW births have declined). From the NWFSC presentations, there are several possible reasons for this decreasing correlation; (1) this is what we expect with any small population as random births and deaths become a greater source of variation than other factors, and (2) this may indicate that other non-prey factors have an influence on the lack of growth.

Additionally, annual distribution and temporal and spatial components were presented which showed the presence of SRKW in Council-managed areas varies throughout the year. Data used to inform this comes from visual sightings, coastal acoustic recorders, and satellite tagging efforts. Each of these datasets has different implicit biases, such as (1) visual sightings are opportunistic, (2) detection of whales from acoustic recorders is difficult if they do not continuously vocalize, and (3) satellite tags have only been deployed in winter months and in limited numbers.

<u>Workgroup discussion on potential metrics and methodology for RA</u>
NMFS WCR presented the previous (2009) analysis of potential effects from reduced prey availability, both in the short-term and long-term, from Council ocean salmon fisheries. The short-term analysis of effects included estimating percent reductions of Chinook salmon

available and the amount of Chinook salmon available compared to metabolic needs. The long-term effects analysis included (1) assessing the likelihood for localized depletions and long-term implications for SRKW survival and recovery; (2) assessing impacts on salmon recovery and survival; and (3) considering conservation objectives for individual stocks (listed and non-listed Chinook salmon) that aid in the recovery and survival of SRKWs.

NMFS WCR also presented the 2019 Council salmon fisheries analysis also included in the April briefing book, which included: (1) season and location of prey reduction; (2) percent reduction in prey available; (3) analysis of effects to listed and non-listed Chinook salmon in the action area (area where distribution of SRKWs and Chinook salmon overlap); and (4) understanding of impacts to priority prey stocks under good and poor status conditions of both SRKWs and Chinook salmon.

Based on these discussions, the Workgroup was able to reach agreement that additional data are necessary to develop and evaluate metrics that would eventually inform an RA. A workplan was drafted with assignments and due dates through November 2019 (Table 3).

Table 1. **Ad-Hoc Southern Resident Killer Whale Workgroup Members**

Member	Affiliation
Phil Anderson (Co-Chair)	Pacific Fishery Management Council Chair
Jeromy Jording (Co-Chair)	West Coast Region, Sustainable Fisheries
Susan Bishop	West Coast Region, Sustainable Fisheries
Teresa Mongillo	West Coast Region, Protected Resources
Eric Ward	Northwest Fisheries Science Center
Will Satterthwaite	Southwest Fisheries Science Center
LCDR Scott McGrew	United States Coast Guard
Mike Matylewich	Columbia River Intertribal Fish Commission
Nate Tyler	Makah Tribe
Tyler Gross	Quileute Tribe
Tyler Jurasin	Quinault Tribe
Melvinjohn Ashue	Hoh Tribe
Kyle Adicks	Washington Department of Fish and Wildlife
Derek Dapp	Washington Department of Fish and Wildlife
Chris Kern	Oregon Department of Fish and Wildlife
Craig Foster	Oregon Department of Fish and Wildlife
Lance Hebdon	Idaho Department of Fish and Game
Chris Kozfkay	Idaho Department of Fish and Game
Brett Kormos	California Department of Fish and Wildlife
Erica Meyers	California Department of Fish and Wildlife

Updated 05/23/19

Table 2. **2019 Ad-Hoc SRKW Workgroup Meeting Schedule**

Date	Location
May 23-24	Meeting in PDX - Embassy Suites Airport
July 2	Webinar - Council debrief
July 23-24	Meeting in Vancouver, WA
August 6	Webinar if needed
September 4	Webinar if needed SAS/SRKW
September 14-ish	Maybe 2 days at Council Mtg in Boise, ID
October 8-9	Meeting in PDX near Airport
October 29?	Webinar if needed SAS/SRKW
November 16-ish	Maybe 2 days at Council Mtg in Costa Mesa, CA

Updated 05/24/19

Table 3. **2019 Ad-Hoc SRKW Workgroup Schedule for Completing Assigned Tasks**

Date	Task	Assignee
June 5	Distribute a compiled pre-fishery ocean abundance	WDFW
June 6	Distribute PFMC specific fishery exploitation rates	WDFW
June 5-7	Inquire about potential new model availability (Shelton et.al)	SWFSC / NWFSC / WDFW
June 7	Distribute spatial / sighting data for coastal temporal mapping purposes	NMFS, due no later than June 14
June 10	Submit Progress Report	June Supplemental Briefing Book deadline
June 20	SAS/STT briefing	From NMFS at June Council meeting
June 21	Present Progress Report	June 19-23 (Council meeting). No SRKW Workgroup meeting
June 21	Review the priority stock list and provide comments	WDFW / ODFW / CDFW
July 2	Webinar	Review Council direction/comments from June mtg., assign tasks, finalize agenda for next mtg.
July 5	Scope and provide a metric index evaluation recommendation for South of Falcon fisheries	SWFSC / CDFW
July 23-24	Meeting in Vancouver, WA	Update on Orca status, address data gaps, and identify framework/criteria for RA. Assign tasks for RA, Identify fishery evaluation criteria, assign tasks. Begin scoping possible conservation measure(s) or management tool(s) to propose based on the evaluation criteria developed for the risk analysis, *consider including draft, or example Alternatives to help*

Date	Task	Assignee
		illustrate model sensitivity, provide context/sideboards.
August 6	Potential Workgroup webinar	If needed to further discuss topics related to completing the risk analysis by August 15.
August 15	Submit draft Risk Analysis Report	Advanced Briefing Book deadline
Sept. 4	Webinar SAS/SRKW	If RA identifies a risk, then solicit SAS input to help develop alternatives (conservation objectives/management tools) for Council consideration at the September meeting.
Sept. 4	Supplemental documents due	September Supplemental Briefing Book deadline. Additional Alternatives may be submitted.
Sept. 14	Present draft Risk Analysis Report	September 11-18 Council meeting in Boise ID. SRKW/SAS may attend.
Oct. 8-9	Meeting in PDX area	Discuss Council direction. Solicit input from SAS to help shape alternatives. NMFS begins NEPA process.
Oct. 17	Submit Report w PPAs	Advanced Briefing Book deadline
Oct. 29	Webinar SAS/SRKW	As needed - Refine alternatives, finalize work for November Council meeting.
Nov. 16	Present Report w PPAs	November 13-20 Council meeting in Costa Mesa. SRKW/SAS may attend. Council to adopt FPA.

Webpage link:
https://www.fisheries.noaa.gov/west-coast/southern-resident-killer-whales-and-fisheries-interaction-workgroup

PFMC
06/12/19