

Key Measures Necessary to Halt the Decline of SRKW and Assure Recovery

Wild Fish Conservancy

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SRKW are in a critical condition, and may be facing imminent extinction:

- absolute population numbers are at critically low levels (<75 total individual)
- recent reproductive failures (spontaneous abortions, deaths of newborns and calves) and deaths of mature females significantly increase the probability that further declines in population numbers will occur in the immediate future.
- Immediate measure must be undertaken to attempt to stabilize the population by slowing the loss of newborns, juveniles, and reproductive-age females. Time is of the essence.
- Measures that need to be taken in the immediate future and sustained for at least two generations of Chinook salmon (10 years) must include:
 - Designation of SRKW feeding refuges in all areas of critical habitat designated under Canada's Species At Risk Act (SARA) and the US Endangered Species Act (ESA) that assure whales the ability to successfully forage in critical feeding habitats without noise, distraction, and disturbance from vessel traffic, combined with
 - Measures to increase the abundance of Chinook salmon in refuge areas and to assure that SRKW have the highest priority for accessing these fish.
- Feeding refuges must include the following SRKW critical habitat areas:
 - Southwest Vancouver Island coastline from Barkley Sound to the mouth of the Strait of Juan de Fuca west to the continental shelf break at the 200 m isobaths, including Swiftsure Bank. This refuge should be in effect from May through October.

- The entrance to the Strait east to Sooke Inlet, Haro Strait and the south and west sides of San Juan Island, and all critical habitat in the approaches to the Fraser. These areas have been clearly described by the Salmon Committee of the Pacific Marine Conservation Caucus (Southern Resident Killer Whale Recovery: Recommendations for 2018 Chinook and Vessel Management, January 2018). Additional refuge areas in US critical habitat areas must also be identified.
- In order to assure the effectiveness of these refuges, fishing and whale watching must be eliminated in refuge areas in order to reduce noise levels and boat interference with foraging and socializing SRKW, and
- To support Chinook recovery in both countries and increase feeding opportunities for SRKW in designated feeding refuges commercial and recreational fishing in mixed stock fisheries along the Washington and Oregon Coasts, the West Coast of Vancouver Island and Southeast Alaska must be reduced, if not eliminated. It is necessary to eliminate fishing mortality on immature Chinook that are feeding in areas targeted by mixed stock fisheries. Chinook mature at multiple ages, ranging from age 2 to age 8. Mixed stock fisheries capture or incidentally kill Chinook that would otherwise mature and return to terminal and near-terminal feeding refuge areas in the following one to four years if they were not caught in the mixed stock fisheries. Reducing or eliminating these fishery impacts and moving fisheries to or near the rivers-of-origin of Chinook would result in more Chinook returning as older fish, with the larger body sizes favored by foraging SRKW, and would increase the numbers of larger, older, and more fecund female Chinook that spawn more successfully than younger, smaller females.
- A particular concern exists for Fraser spring and summer stream-type Chinook populations. These populations are substantially depressed relative to their levels of abundance in the 1980s and 1990s, and are a particularly important component of SRKW diet in the late spring and early summer (May – July). Fisheries are still allowed on these populations despite the fact that they are failing to meet population rebuilding goals. These fisheries should be eliminated.

- Chinook must be managed in accordance with these measures for at least two generations (10 or more years) during which time monitoring and research should be conducted to determine relationships between Chinook indices (forecasts, preseason, and in-season estimates) and indicators of SRKW health; monitoring results should be incorporated into adaptive management decisions.
- By undertaking these measures management will have significantly reversed the burden-of-proof concerning appropriate conservation measures, from SRKW and their conservation advocates to the fishing and whale watching industries and commercial vessel industries. The burden will appropriately be placed on those who argue that the above measures are too drastic and/or unnecessary to fund the necessary data gathering and independent analyses that may demonstrate such contentions.
- The Pacific Salmon Treaty (PST) between the US and Canada has been renegotiated and is being considered for approval by year's end by both parties. The new treaty must adequately address the threats posed to SRKW by the mixed stock ocean fisheries under the jurisdiction of the Treaty. If the new treaty fails to provide this, it should be rejected by both countries. Should the Treaty be signed, the US National Marine Fisheries Service (NMFS) will have to issue a Biological Opinion (BiOp) on the US' signing of the treaty that evaluates whether doing so jeopardizes ESA-listed species, including SRKW. If the new treaty fails to incorporate a significantly revised harvest management regime that is properly protective of resident killer whales and depressed Chinook salmon stocks, the BiOp should conclude jeopardy and require the US to reject the Treaty.
- Increasing production of hatchery Chinook to "help save" SRKW is not a biologically or ecologically credible action. Washington's fishery co-managers and several state legislators and sports fishing advocacy organizations have recently advocated for increased production of hatchery Chinook to "save" SRKW. While seemingly logical at first, such an idea is utterly without technical merit. Increased production of hatchery Chinook in Puget Sound and elsewhere in the state (or in British Columbia) would have two results harmful both to SRKW and to the recovery of the wild, ESA-listed, Chinook

that will sustain SRKW in the decades to come. First, it would increase the numbers of uncaught hatchery Chinook that stray onto the spawning grounds of wild fish where they drive down the fitness (productivity) of already impaired wild populations, delaying or even preventing recovery. Even at current levels of hatchery production, the proportion of hatchery origin Chinook on wild fish spawning grounds (proportion of hatchery origin spawners, or pHOS) in most Washington rivers exceeds “biologically acceptable” levels set by the independent Hatchery Scientific Review Group. This indicates that current fisheries management is incapable of harvesting all hatchery Chinook produced for harvesters. Increasing Chinook hatchery production above current levels would simply result in further increases in pHOS levels, thereby imposing further harm to the productivity of wild Chinook populations. Second, increased returns of hatchery Chinook would also result in increased pressure from sports and commercial fishers (tribal and non-tribal) for increased fishing opportunities, thus further increasing boat traffic and associated noise and activity levels already known to be harmful to SRKW, as well as increasing incidental harvest mortality on depressed wild Chinook stocks.

- In order that any such increase in production of hatchery Chinook not have these adverse effects, the configuration of commercial and sports fisheries would have to be changed in the direction described above for current fisheries in relation to SRKW refuge areas. Consequently, any consideration to increase the production of hatchery Chinook *in order to help SRKW survival and recovery* is dependent first on reconfiguring fisheries as described and providing the necessary SRKW foraging refuges. Unless and until this is done, there should be no increase (and probably some reductions) in the numbers of hatchery Chinook produced in these areas.
- In the longer term more and better information is needed regarding SRKW foraging locations and Chinook populations preyed on by SRKW during the months of November to April when SRKW are absent from the Salish Sea (or only present in much reduced numbers). It is known that Columbia River spring Chinook are very probably an important prey item in late winter and early spring immediately prior to the return of SRKW to their Salish Sea foraging refuge/critical habitat areas. Fisheries targeting and

otherwise affecting these and other populations along the Pacific Coast from Monterey Bay to the entrance to the Strait of Juan de Fuca will need to be reconfigured in similar ways to those proposed for the Salish Sea.

- Removal of the Snake River dams would also provide significant help to SRKW in the longer-term and we certainly support efforts to remove them. But this is not going to happen in the immediate future, and even were removals to be scheduled and funded, removals would not begin in the next five years or more and benefits to the recruitments of affected Snake River Chinook populations would not likely accrue to foraging SRKW for one or more Chinook generations (4 -5 years) thereafter. *SRKW do not have this long to wait for these probable benefits!* While dam removal is a critical component to SRKW (and Chinook) recovery, it alone is insufficient.

Immediate actions that reduce commercial and recreational fishing and vessel noise from fishing and whale watching activities in the Salish Sea are required NOW! In addition, fisheries must be managed to prioritize the returns of mature Chinook to all proposed SRKW foraging refuge areas described above (and to all additional such areas that may be recognized as a result of future research and monitoring).