

October 15, 2018

Governor Jay Inslee Office of the Governor
P.O. Box 40002 Olympia, WA 98504

Ms. Stephanie Solien, Co-Chair Mr. Thomas (Les) Purce, Co-Chair
Southern Resident Killer Whale Task Force c/o Puget Sound Partnership
326 East D St. Tacoma, WA 98421

Delivered via e-mail and regular mail

Dear Governor Inslee, Co-Chairs Solien and Purce, and Southern Resident Orca Recovery Task Force Members,

We are writing as scientists and researchers with many decades of collective experience and a deep familiarity with the life history and current status of the Southern Resident Killer Whales. We have also been particularly attentive to, and in certain instances directly involved in, the urgent conversations regarding orca protection and recovery strategies and programs. We offer our expertise and insights as the Southern Resident Orca Task Force compiles its initial list of recommendations this Fall.

While we do not specialize in fisheries biology, we know from studying the Southern Resident Killer Whales that increasing the abundance of spring, summer, and fall populations of Chinook salmon in Northwest marine waters is vital to ensure orca survival. We write to emphasize several critical details about Chinook abundance that at this time may be underappreciated by Task Force members but are nevertheless essential to the success of its work.

Because the Southern Residents need access to abundant chinook salmon on a year- round basis, increasing a wide variety of chinook salmon as quickly as possible must be the top priority for the Task Force and regional policymakers. Vessel-related interference and food chain toxins -- threats in and of themselves -- are intensified by the current prey shortage. While both of these threats also demand immediate action, ensuring an abundant supply of prey will help to minimize and mitigate these other recognized causes of decline. For example, when orcas are forced to metabolize their blubber in times of prey scarcity, they mobilize toxins stored in these fats. This increases rates of reproductive failure, compromising the population's ability to grow. While abundant prey does not eliminate these stored toxins, it does help ensure that they remain stored in the orcas' fat reserves. In fact, that may be why transient killer whales are doing so well compared to southern residents. The transient's rich prey source appears to buffer them from toxin impacts, despite having markedly higher toxin loads relative to southern residents.

Put simply, Orca need more Chinook salmon available on a year-round basis, as quickly as possible. Lack of prey has caused a steady increase in mortality and orca pregnancy failure. These two factors in combination have led to the recent decline in the Southern Resident Orca population which today stands at just 74 individual whales – a 35-year low. The low number of reproductive-age females left – 27 – with less than half of these successfully reproducing in the last ten years, underscores just how little time we have to turn this trajectory around with urgent and effective action.

The Orca Task Force may not yet fully appreciate the important role spring Chinook in particular play in the life history of the Southern Resident orcas. Spring Chinook populations in Northwest watersheds

have played a critical role in diet and range of Southern Resident orca due to their historically large numbers, large size, high fat content, and the timing of their return in the winter and early spring months when other Chinook populations are unavailable. These are foremost among the salmon that Southern Residents leave the Salish Sea to hunt for along the west coast in the winter and spring months.

Because spring Chinook require cold, clear, tributary streams to spawn, these salmon have been particularly hard-hit by habitat destruction from human activities like dams, culverts, logging, mining, and urbanization. There are very few watersheds left in the Northwest that support healthy (or potentially healthy) populations of these salmon.

Spring chinook from the Columbia Basin warrant special attention. Once among the largest spring Chinook salmon producing watersheds on earth, the Columbia Basin's spring Chinook have suffered steep declines over the past century from damming and habitat destruction. Despite these impacts, this vast watershed still supports—and has the demonstrated potential to support far more—spring Chinook. Even with the diminished numbers of spring Chinook compared to historic levels, multiple studies demonstrate that the Southern Resident orcas still gather along the Washington State coast and at the mouth of the Columbia River between January and April. Prey event sampling and scat surveys have demonstrated that the orcas are there to feed on the large, fatty adult spring Chinook staging in this area before they return to the Columbia river in search of their natal spawning beds. Rebuilding the spring Chinook population in the Columbia Basin—a fish that we know the Southern Residents depend upon in the winter months—should be a top priority for the Orca Task Force and orca conservation efforts generally. The early spring run also replenishes the whales after a long winter and sustains them until the Fraser River Chinook peak in mid-August.

We recommend two key measures to increase Chinook abundance from the Columbia/Snake system. These measures are described more fully in a recent letter to the Task Force from more than thirty salmon biologists: (1) an immediate increase in spill levels at the federal dams on the Snake and Columbia Rivers to 125% total dissolved gas and (2) permanently restoring the Snake River by removing the lower Snake River dams. These measures will reduce heavy dam-caused salmon mortality for fish throughout the basin and re-establish productive access for Chinook and other salmonids to more than 5,000 miles of upstream stream habitat in the Snake River basin.

Though spring Chinook once inhabited the Columbia River deep into Canada, the Snake River Basin historically produced nearly one-half of all the spring Chinook in the entire Columbia Basin. Unlike many other parts of the Columbia Basin today where habitat restoration is badly needed, the majority of the habitat that supported this abundance—high elevation, cold water streams deep in protected wilderness in central Idaho—remains intact and fully functioning.

In short, the Snake River basin offers the best potential for large-scale spring Chinook restoration in our region. Protecting and restoring salmon access to and from this habitat will have a significant benefit for spring Chinook and should be a top regional priority for addressing orca prey needs.

Of course, Chinook restoration is needed throughout the orcas' year-round range, but based on what we know about the Southern Resident's historic and current reliance on spring and other Chinook salmon in the Columbia Basin, we believe that restoration measures in this watershed are an essential piece of a larger orca conservation strategy. Indeed, we believe that Southern Resident orca survival and recovery may be impossible to achieve without it.

Based on the science and the urgency of the current threats confronting the Southern Residents, we urge the Task Force to recommend to Governor Inslee that he take appropriate steps to change Washington's water quality standards to allow increased spill to 125% of saturation and also convene a process to recommend steps for lower Snake River dam removal as soon as possible as top priorities for orca protection.

We thank you for the opportunity to submit this letter and for your consideration. If you have questions or we can be of assistance, please contact Deborah Giles, giles7@gmail.com / 916-531-1516.

Sincerely,

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Resources:
NOAA Fisheries, Species in the Spotlight, Survive to Thrive, Recovering Threatened and Endangered Species (2015), http://www.nmfs.noaa.gov/.../d.../noaa_recoveringspecies_report_web.pdf.

Ford, JKB, et al., Linking Killer Whale Survival and Prey Abundance: Food Limitation in the Ocean's Apex Predator? 6 BIOLOGY LETTERS 141 (2010), p. *3,
<http://rsbl.royalsocietypublishing.org/.../.../14/rsbl.2009.0468>. See also NOAA Fisheries, SRKW Recovery Planning and Implementation (2011), p. 2.

Ayres KL, et al. (2012) Distinguishing the impacts of inadequate prey and vessel traffic on an endangered killer whale (*Orcinus orca*) population. PLoS One 7: e36842, <http://journals.plos.org/plosone/article....>

NOAA, SRKW Recovery Plan Recovery Plan for Southern Resident Killer Whales, (*Orcinus orca*), National Marine Fisheries Service, Northwest Region, Seattle, Washington (January 2008), p. II-82.

NOAA Fisheries, (2014) Federal Columbia River Power System Biological Opinion, http://www.westcoast.fisheries.noaa.gov/.../fcrp.../federal_colu_mbia_river_power_system.html.

See e.g., *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 839 F. Supp. 2d 1117, 1131 (D. Or. 2011) (“[T]here is ample evidence in the record that indicates that the operation of the FCRPS causes substantial harm to listed salmonids. . . . NOAA Fisheries acknowledges that the existence and operation of the dams accounts for

most of the mortality of juveniles migrating through the FCRPS.”)

U.S. Fish and Wildlife Service. Species profile for Chinook Salmon (*Oncorhynchus tshawytscha*), <http://ecos.fws.gov/speciesProfile/profile/speciesProfile....>

Hanson et al., Assessing the Coastal Occurrence of Endangered Killer Whales Using Autonomous Passive Acoustic Recorders (November 2013), 3486, 134 *J. Acoust. Soc. Am.* 5, http://oceanwidescience.org/.../wp-content/uploads/2014/12/Ha..._2013.pdf

Ayres KL, et al., supra, <http://journals.plos.org/plosone/article....> 10 Northwest Fisheries Science Center, NOAA Fisheries. 2013 Southern Resident Killer Whale Satellite Tagging, http://www.nwfsc.noaa.gov/.../di.../cb/ecosystem/marinemammal/satellite_tagging/blog.cfm; 2015 Southern Resident Killer Whale Satellite Tagging, http://www.nwfsc.noaa.gov/.../di.../cb/ecosystem/marinemammal/satellite_tagging/blog2015.cfm; 2016 Southern Resident Killer Whale Satellite Tagging, http://www.nwfsc.noaa.gov/.../di.../cb/ecosystem/marinemammal/satellite_tagging/blog2016.cfm.

Ford, Mike, Salmon recovery and southern resident killer whale status. A presentation to the Southern Resident Orca Task Force, NOAA-Fisheries; Northwest Fisheries Science Center, May 2018.

Hanson, Brad et al, Species and stock identification of scale/tissue samples from southern resident killer whale predation events collected off the Washington coast during PODs 2009 cruise on the McArthur II, BB0149, unpublished memo, 2010.

Wasser, Sam et al, Population growth is limited by nutritional impacts on pregnancy success in endangered Southern Resident killer whales (*Orcinus orca*). *PLOS ONE*. June 29, 2017

Lacy, Robert C. et al, Evaluating anthropogenic threats to endangered killer whales to inform effective recovery plans. *Scientific Reports*, 7:14119. October 26, 2017

John K.B. Ford, Chinook salmon predation by resident killer whales: seasonal and regional selectivity, stock identity of prey, and consumption rates. Research Document 2009/101. Fisheries and Oceans Canada, Pacific Biological Station, 2009.

Montgomery, David et al, Scientists Letter to the Southern Resident Orca Task Force, August 2018.

Williams, Richard, editor, Return to the River, 2006.