



Portland office: 2031 SE Belmont St. Portland, OR 97214 • 503.230.0421; 503.230.0677 fax
Seattle office: 200 1st Ave. W., Ste. 201 Seattle, WA 98119 • 206.286.4455; 206.286.4454 fax
Field offices: 406 Pueblo St. Boise, ID 83702 • 208.245.9067; 208.343.9376 fax
35 W. Main Ave., Ste. 200 Spokane, WA 99201 • 509.747.2030; 509.456.8400 fax
122 C St. NW, Ste. 240 Washington, DC 20001 • 202.266.0466

June 15, 2012

Larry Rutter, Salmon Management Division
National Marine Fisheries Service, Northwest Region
7600 Sand Point Way NE
Seattle WA 98115-0070

RE: Comments on Draft Report: *The Effects of Salmon Fisheries on Southern Resident Killer Whales*

Dear Mr. Rutter,

I write you today on behalf of the six million citizens throughout the Pacific salmon states and across the nation collectively represented by the member groups of the Save Our Wild Salmon Coalition (SOS). SOS is a nationwide coalition of conservation organizations, commercial and sport fishing associations, businesses, river groups, and taxpayer advocates – all joined in a commitment to protect and restore Pacific Northwest wild salmon and the communities that depend on them.

SOS is pleased to offer these comments on the May 3 draft report of the Independent Science Panel on “The Effects of Salmon Fisheries on Southern Resident Killer Whales.” In short, we concur with the overall findings in the report that, while much more work and investigation is needed, it is doubtful that reduced salmon fishing would have much impact on the health and future status of Southern Resident Killer Whales (SRKW). We believe that efforts to increase the availability of salmon for SRKW should focus more on overall salmon recovery, particularly the need to protect and restore Columbia and Snake River salmon.

As the draft report correctly notes, SRKW depend heavily on chinook salmon in the summer and, though winter diet data is less extensive, it indicates that chinook also constitute a sizable proportion of their intake in the rest of the year. In fact, as a recent paper reveals, there is increasing evidence that early spring runs of chinook from the Columbia River may be a crucial part of the diet for orcas at that time of year.¹ For that reason, this paper states that “promoting salmon recovery is vital to the long-term persistence of SRKW. Conservation of early spring salmon runs consumed by SRKW prior to arrival in the Salish Sea may be especially important to

¹ Ayres KL, Booth RK, Hempelmann JA, Koski KL, Emmons CK, et al., Distinguishing the Impacts of Inadequate Prey and Vessel Traffic on an Endangered Killer Whale (*Orcinus orca*) Population. PLoS ONE 7(6), June 2012.

these recovery efforts.”²

In other words, rather than be distracted by the marginal impacts of ocean fishing or sightseeing vessels on SRKW, we should instead be focusing our efforts on increasing the amount of salmon available to orcas in the first place. One of the key ways to do that is to ensure an adequate supply of chinook making their way out of the Columbia-Snake system. Given the increasing evidence cited by Ayres et al. that Columbia-Snake chinook are vital to SRKW, we believe your analysis should acknowledge that we must do more to restore those runs. And as noted in an August 2009 letter to NOAA from 14 prominent SRKW scientists (attached here as Exhibit A), the one measure most likely to restore this critical prey base for SRKW is the removal of the four lower Snake River dams.

Unfortunately, neither the 2008 Biological Opinion for the Federal Columbia River Power System nor its subsequent refinements (all of which have since been ruled illegal by a federal court) dealt adequately with the hydrosystem’s secondary impacts on orca populations due to its degradation of salmon runs. But it is critical moving forward that we direct our attention to those major impediments to the longterm recovery of both SRKW and the chinook on which they depend.

SOS thus concurs with the Science Panel’s skepticism in this draft report that “reduced chinook harvesting would have a large impact on the abundance of chinook available to SRKW.”³ SOS supports wise, science-based management of salmon fisheries, but we cannot pretend that asking fishermen to tighten their belts once again will solve the problem for SRKW. Indeed, salmon fishing has been steadily ratcheted back over the years with no discernible impact on SRKW survival.

The SRKW prey abundance issue is far more profound than mere fisheries management and it demands a much greater commitment to fundamentals of ecosystem management. Restoring the viability of Columbia-Snake salmon populations undoubtedly would have a major effect on the availability of prey for SRKW and we believe that should be prioritized in SRKW protection and research efforts.

However, the discussion of broader ecosystem factors in the draft report fails to mention this kind of influence on chinook availability as prey for SRKW, focusing instead on other chinook predators and similar factors. Although you mention the potential significance of chinook from other river systems at other times of years in one or two places, we would urge you to more clearly and explicitly acknowledge the relevance and importance of this kind of anthropogenic factor in your final report, and more specifically encourage additional study of the impact of such factors on SRKW, as opposed to a continued focus on the impacts of the already-quite-limited chinook fisheries.

² Id. at 10.

³ Draft Report at p. 9.

Thank you for considering our comments, and we look forward to seeing the next iteration of the document. Please feel free to contact me with any additional questions.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Nicole Cordan", followed by a long horizontal flourish line extending to the right.

R. Nicole Cordan
Policy and Legal Director
Save Our Wild Salmon Coalition

EXHIBIT A

August 25, 2009

The Hon. Gary Locke
Secretary
United States Dept. of Commerce
1401 Constitution Avenue NW
Washington, DC 20320

Dr. Jane Lubchenco
Under Secretary of Commerce for Oceans and Atmosphere, and
NOAA Administrator
Department of Commerce
1401 Constitution Avenue, NW, Room 5810
Washington, DC 20320

Re: Southern Resident Killer Whales

Dear Dr. Lubchenco:

As scientists familiar with Southern Resident Killer Whales (*Orcinus orca*) (SRKWs), we know that NOAA is taking significant steps towards protecting and recovering this iconic endangered species. For that reason, NOAA's finding in the 2008 Federal Columbia River Power System Biological Opinion (2008 BiOp) that federal hydro dams on the Snake and Columbia Rivers are "not likely to adversely affect" SRKWs, troubles us, and we hope that it will be seriously reconsidered during NOAA's current review of that BiOp. This letter briefly describes our primary areas of concern.

Background: As you may know, NOAA's SRKW Recovery Plan identifies prey shortages as a crucial problem for Puget Sound orcas. Chinook salmon constitutes approximately 70 percent of their diet, and studies have found SRKW population size correlates with Chinook abundance. The Recovery Plan states, "[P]erhaps the single greatest change in food availability for resident killer whales since the late 1800s has been the decline of salmon in the Columbia River basin." (p. 82). More than 200 large dams on the Basin's rivers are the major cause of its salmon extinction crisis, with 13 populations now listed under the Endangered Species Act. The NOAA Recovery Plan anticipates that SRKWs would be considered recovered when they reach about 100 adults, although as you are well aware, a population of that size is normally considered critically endangered. Even this minimal level of recovery would require a doubling in prey availability range-wide.

In addition to increasing numbers, preserving genetic diversity is essential to conservation. SRKWs produce a single offspring at a time, and even successful females in good conditions are unlikely to successfully rear more than four offspring to adulthood over the course of their lifetime. This doubling of population each generation would conserve about 94% of single copy genes for a generation. However, if the population size remains constant, 25% of single copy genes would be lost within a generation. That is, for successful recovery of SRKWs, it is not sufficient to stabilize the population until serious conservation measures are implemented. Improving habitat and prey conditions to support population growth of close to 3% per year is urgent.

Prey shortages worsen other problems facing SRKWs. For instance, high toxin concentrations are associated with impaired reproduction. When prey scarcity requires SRKWs to consume their own lipids, concentrations of fat-soluble toxins increase in the orcas' endocrine systems, where they compromise immunity from common infections and disease. This increases the importance of the continuous availability of adequate food. Another component of the toxin problem is that with the decline of Columbia River salmon, the Fraser River system has become the major source

of prey for SRKWs. These salmon acquire high levels of industrial toxins during the early part of their time at sea spent in the contaminated waters of Puget Sound and Georgia Basin. The Sacramento River was another important source of prey for SRKWs, and SRKWs still carry the agricultural toxins from these fish. So not only is the Columbia Basin the river system with the biggest potential for producing the Chinook salmon needed to recover SRKWs, the fish produced there may be cleaner than fish produced in the Fraser or Sacramento.

Primary Issues of Concern with the 2008 BiOp

First, the 2008 BiOp simplistically relies on a flawed comparative approach to evaluating the dams' impacts on SRKWs. To gauge the effects of the Columbia/Snake hydro system on Southern Residents, the 2008 BiOp asks only whether the percentage of salmon killed by the dams will be offset by the number of salmon produced in the Basin's federally funded hatcheries. After finding that the hatcheries will produce more salmon than the dams kill, NOAA concludes in the 2008 BiOp that the dams "are not likely to adversely affect" Southern Residents. 2008 BiOp, pp. 9-15 to 9-18. The 2008 BiOp does not examine whether the current salmon population is adequate for SRKW recovery, it does not assess whether changes in the spatial or chronological distribution of hatchery fish align with orcas' needs and it does not assess the risks to salmon or orcas posed by long-term reliance on hatcheries.

NOAA takes a very different – and appropriately cautious – approach in its recent Biological Opinion for the Central Valley Project ("2009 BiOp"). There, NOAA first finds that it is not clear whether present salmon abundance in the ocean is sufficient even to sustain the current depleted orca population. (2009 BiOp, p. 165). NOAA explicitly recognizes that the fragility of the depleted SRKW population requires scrutiny of even small effects that could increase in any individual killer whale the risk of mortality or decrease the chances of successful reproduction. It similarly finds that changes in either prey availability or prey density that decrease foraging efficiency, and could thus reduce the reproductive capacity of even one orca, would jeopardize the SRKW population. Significantly, as in the 2008 BiOp, NOAA determines that hatchery production included in the Project would more than offset the number of salmon killed by the Project; however, in the 2009 BiOp, NOAA also finds that reliance on long-term hatchery production poses unacceptable risks to both salmon and orcas. Accordingly, the BiOp concludes that the operation of the dams and water pumps in California's Central Valley and in the Sacramento River/San Francisco Bay Delta does indeed jeopardize SRKWs because those operations threaten the Central Valley's wild salmon populations. (2009 BiOp, p. 573-575).

Second, the 2008 BiOp fails to account for the impacts of climate change on Columbia Basin salmon and steelhead. While the BiOp generally concedes that climate change will likely affect Columbia Basin salmon, it also assumes that the Pacific Northwest's climate conditions will be no worse than conditions experienced in a "base period" of 1980 to 2001. (2008 BiOp, p. 7-12). As you know, this assumption runs counter to the conclusions of scientific bodies ranging from the UN Intergovernmental Panel on Climate Change to the Northwest Power and Conservation Council's Independent Scientific Advisory Board, as well as those in Global Climate Change Impacts in the United States (2009). It also contrasts sharply with NOAA's approach in the 2009 BiOp. In fact, the 2009 BiOp employed detailed Snake River climate scenarios to illustrate the range of potential consequences of climate change on California salmonids:

Crozier et al. (2008) predicted the probability of quasi-extinction in four populations of Snake River spring/summer Chinook salmon using a life-cycle model for the 2040 time frame. They found that mean Chinook salmon population size decreased from 20-37 percent in the more moderate climate scenarios (1.77° C rise in average temperature) to 37-50 percent in the hottest and driest scenarios (2.6° C warming). Lower flows in October and higher temperatures caused parr-to-smolt survival to decline from 18-19 percent in the more moderate scenario to 34-35 percent in the drier scenario. (2009 BiOp, p. 464)

Despite this peer-reviewed study's specific examination of Snake River salmon and its sobering analysis of the significant harm caused by short-term climate change, NOAA does not use it in

the 2008 Columbia River BiOp, simply because the study extended to a date beyond the end date of the BiOp.

Few scientists doubt that the Columbia Basin is already warming and will become even warmer and drier in the next few decades, increasingly threatening coldwater-dependant salmon and steelhead populations. The 2008 BiOp's failure to incorporate into its analysis the effects on salmon populations of on-going and increasing warming renders indefensible its "not likely to adversely affect" conclusion for SRKWs.

Third, the BiOp fails even to look at the one measure most likely to protect and restore SRKWs' prey base: the removal of the lower Snake River dams. As federal scientists have previously recognized, and 300 independent scientists have echoed, removing the lower Snake dams is "the surest means" to recovering at least four endangered salmon runs (two of which are Chinook), and will provide critical ancillary benefits, such as cooler water temperatures, to endangered non-Snake River salmon (e.g., Upper Columbia River spring Chinook). Lower Snake dam removal would restore salmon abundance to 1.5 million acres of high-elevation, low-temperature, largely undeveloped, mostly protected lands. When coupled with sound harvest policies, appropriate land use, and hatchery/aquaculture reform, opening access to this inland habitat would allow Chinook numbers to increase to levels that would again sustain Southern Residents, particularly during crucial winter months when they leave Puget Sound. The 2008 BiOp was flawed in omitting consideration of dam breaching, ignoring sound science and repeated warnings from the federal courts.

The recovery of Southern Resident Killer Whales depends on abundant food, which will be difficult, if not impossible, to provide without restoring productivity from the Columbia Basin. We are heartened that NOAA is reviewing the degree to which the 2008 BiOp conforms to the law and the best available science. We hope the review will lead to real protection for endangered killer whales. Thank you for considering our comments.

Sincerely,

David Bain, Ph.D.
Researcher
Global Research & Rescue
Seattle, WA

Robin Baird, Ph.D.
Research Associate
Cascadia Research
Olympia, WA

Kenneth C. Balcomb III, M.Sc.
Executive Director and Principal
Investigator
Center for Whale Research
Friday Harbor, WA

James C. Ha, Ph.D
Research Associate Professor
University of Washington
Seattle, WA

Richard Osborne, Ph.D.
Research Associate
The Whale Museum
Friday Harbor, WA

Scott Veirs, Ph.D.
President
BeamReach Marine Science and Sustainability
School
Seattle, WA

Val Veirs, Ph.D.
President, Board of Directors
The Whale Museum
Friday Harbor, WA

Samuel Wasser, Ph.D.
Director, Center for Conservation Biology
University of Washington
Seattle, WA

Jason Wood, Ph.D.
Research Curator
The Whale Museum
Friday Harbor, WA

Katherine Ayres, Ph. D. candidate
Center for Conservation Biology
University of Washington
Seattle, WA

Deborah A. Giles, Ph.D. candidate
Research Fellow
The Whale Museum
Friday Harbor, WA

Erin Ashe, B.Sc.
Marine Conservation Biologist
Oceans Initiative
Seattle, WA

Rachael M. Griffin, B.Sc.
Independent Researcher
Aquagreen Marine Research
Victoria, B.C.

Monica Weiland, B.Sc.
Research Associate
The Whale Museum
Friday Harbor, WA