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VIA HAND-DELIVERY AND U.S. MAIL

November 13, 2018

Mr. Chris Oliver  
Assistant Administrator for NOAA Fisheries  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, MD 20910

Dear Asst. Administrator Oliver:

The purpose of this letter is to update you on the biological and economic urgency of breaching the lower Snake River dams this winter, starting with Lower Granite. In the past 6 months, the controversy over maintaining the lower Snake River dams (LSRD) has garnered massive press attention, with almost daily news coverage (at least 150 articles), including extensive coverage on the front page of the *Seattle Times*.<sup>1</sup>

There are only 74 of the critically endangered Southern Resident Killer Whales (SRKW) remaining. Snake River Chinook and steelhead are at record lows. The collapse of the Snake River and Salish Sea ecosystems is catastrophic for critically endangered species whom NOAA has a duty to protect; for west coast fisheries hard hit by early closures and severe catch limits; and for all human communities of NOAA's West Coast Region. As informed citizens, scientists, and policymakers, we can no longer hope that hatchery production, habitat restoration, or the latest in fish passage technologies will alone be sufficient to aid in the recovery of these endangered salmon and devastated fisheries.

To briefly summarize my background, I am a Civil Engineer, PE, retired from the Corps after a 35-year career. I served at every level of the Corps and while in Washington D.C. for 12 years (nearly all at the GS-15 level). I was asked to sort out complex science, economic and technical issues/programs and detailed to EPA, DOE, NSF and the White House Office of Science and Technology Policy, among others. I also worked for several years in CW Policy in HQUSACE, and was the Deputy District Engineer for Programs at Walla Walla District from 1999 to 2002 while a massive \$33 million, 7-year LSRD Feasibility Study and EIS was in the final stages of development and decision.

It is no secret that NOAA has recognized the ecosystem benefits of breaching the dams for over 20 years. NOAA Fisheries 2000 Biological Opinion for Federal Columbia River Power System operations recognized that breaching the four lower Snake River dams had the greatest potential to improve survival of Snake River salmon, including spring/summer and fall Chinook. As NOAA correctly observed: “breaching the four lower Snake River dams would provide more certainty of long-term survival and recovery than would other measures.” 2000 BiOp at 9-5. The 2002 EIS Summary (at p. 25) echoes NOAA’s conclusion in recognizing that Alternative 4 (dam breaching) “provides the highest probability of meeting the survival and recovery criteria under the PATH analysis.”<sup>2</sup>

NOAA has also recognized the undeniable connection between Chinook from the Snake River watershed and prey availability for the SRKW which scientists identify as the primary cause of these orcas’ decline. NOAA’s tracking data shows that the SRKW travel to the Columbia River basin to feed.<sup>3</sup> NOAA also recognizes that Snake River runs are a priority food source and make up about 25% of the SRKW diet.<sup>4</sup> Countless independent scientists have documented the importance of this food source.

Fisheries and the SRKW are both in collapse. The common element to this collapse is the impending extinction of wild Snake River salmon (protected in their own right) and the rapid decline of all Columbia River basin fish stocks. Washington’s Governor Inslee recently commented “as goes the orca, so go we”. This observation reflects the truth that humanity’s ability to enjoy the resources of an abundant natural world is in dramatic decline.

Federal and state agencies have exhausted all other non-breach alternatives set forth in the 2002 EIS. Dam breaching (Alternative 4) remains as the only way to give critically endangered salmon, SRKW, and several west coast fisheries a realistic chance of recovering.

Dam breaching will restore the economic viability of west coast fisheries and simultaneously save taxpayers billions of dollars in capital improvement and operations and maintenance costs from the aging dam infrastructure and as a result of more redundant studies. The hydropower from the four dams is currently surplus, sold by Bonneville Power Administration (BPA) to California at below market rates. The power, while providing no net benefit to BPA ratepayers, has already been replaced by other sources, hence the surplus.

As former Executive Director of the North Pacific Fishery Management Council, you are aware of the worldwide decline in fish stocks and the resultant need for well thought out fisheries management plans. Breaching the four lower Snake River dams provides a once in a lifetime opportunity to dramatically increase fish abundance based on biologically and economically sound data. We hope that you will cut through bureaucratic waste. We trust that you will have the courage to initiate this legacy action in order to rebuild fisheries essential to the west coast economy and national food security, and to save iconic species of the Pacific Northwest.

Immediate dam breaching is necessary for:

- (1) economically and biologically sustainable west coast fisheries
- (2) the survival of critically endangered wild Snake River salmon; and
- (3) the survival of critically endangered Southern Resident Killer Whales

**Immediate dam breaching is necessary for economically and biologically sustainable west coast fisheries.**

Immediate breach of the lower Snake River dams advances NOAA's mission of fostering biologically and economically sustainable fisheries. As NOAA recognized in its November 2017 ESA Recovery Plan, the Snake River Basin was historically the most productive region in the Columbia River Basin, producing 40% of the Columbia Basin's spring/summer Chinook and 55% of its steelhead.<sup>5</sup> However, in both 2015 and 2017, only 11 wild Snake River sockeye made it all the way to the Stanley Basin in Idaho's Sawtooth Mountains. Last year, only 4,100 wild spring/summer Chinook were counted at Lower Granite Dam, and just a few hundred wild B-run steelhead were counted for the 2017-2018 run, about 1% of the wild B-run return recorded in 1962, before the lower Snake River dams were constructed.

States are closing fishing seasons annually across all stocks. In September 2018, most of the Columbia river closed to salmon and steelhead fishing.<sup>6</sup>

By way of further example, Joe DuPont, Fisheries Regional Manager for Idaho reported:

*These are the hatchery fish destined for the Salmon and Snake rivers. At this point in time (8/28/18), typically over 70% of these hatchery stocks of steelhead should have passed over Bonneville Dam. Unfortunately, the information I have for you is not good. If you look at all the steelhead count data at Bonneville Dam, you would have to go back to 1944<sup>7</sup> to find a year with a lower window count (54,704) than we have for this time of year (June 1 through August 27). . . . we are projecting this year's runs of hatchery steelhead to the Salmon and Snake rivers to reach about 14,000 fish . . . which is less than last year's run of 22,500 fish.<sup>8</sup> (italics and footnote added).*

On October 16, 2018, there were 329,959 total Chinook compared to the 10-year average of 781,160, a **58% decline**. Jacks (non-spawners) are **down 68%** (42,403 versus 130,883), and are a key predictor of 2019 returns of spawners.

The table below illustrates the crisis for endangered fish and fisheries:

Lower Granite Dam			
	Compared to 10yr Average		
Fish Returns	2016	2017	2018
Spring Chinook	+6%	-56%	-50%
Summer Chinook	28%	-48%	-58%
Fall Chinook**	+6%	-35%	-66%
Sockeye	-21%	-80%	-76%
Steelhead**	-42%	-54%	-69%
Wild Steelhead**	-47%	-67%	-74%

\*\*As of Oct. 16, 2018  
Data from Columbia Research Basin, <http://www.cbr.washington.edu>

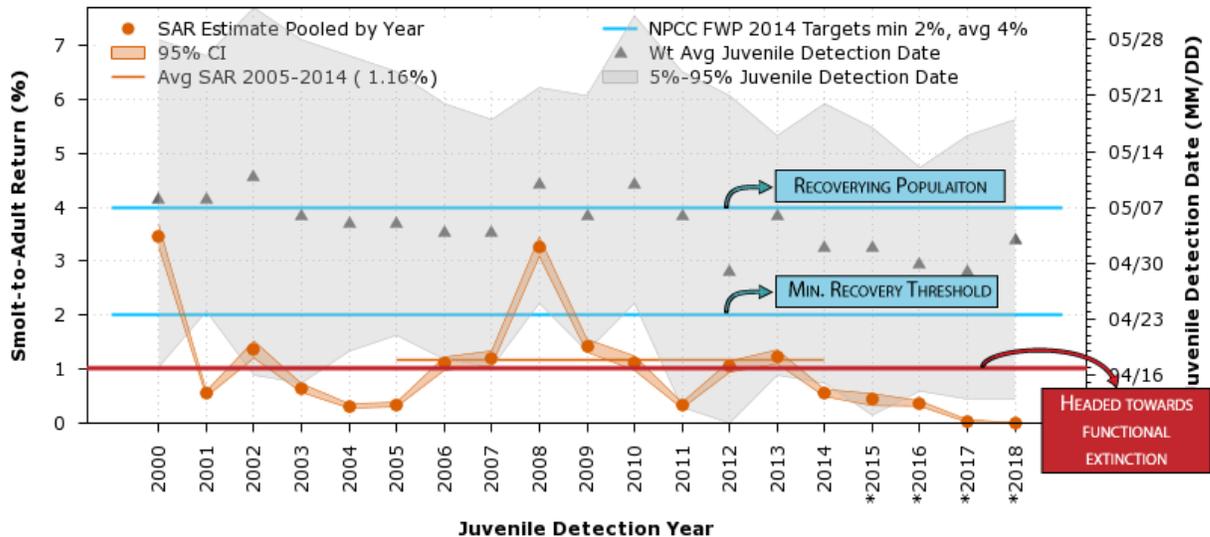
**Immediate dam breaching is necessary for the survival of critically endangered wild Snake River salmon.**

Unfortunately, as the crisis escalates, NOAA’s West Coast Region has increased efforts to dispel public concern. For instance, during a webinar on spill held as part of Governor Inslee’s Orca Task Force, Mr. Ritchie Graves of NOAA’s West Coast Region presented the below chart reflecting Smolt-to-Adult returns. The chart can be replicated on the Columbia Basin Research website, which consists of standardized reporting based on fisher ladder counts provided by the U.S. Army Corps and used by state and federal agencies, Tribes, and the public.

Mr. Graves interpreted the chart as meaning “these [Chinook salmon] stocks are doing pretty well”. The chart itself does not support this conclusion. Smolt-to-Adult Returns (SAR) - a metric used to determine if we are recovering threatened salmon species -- show Snake River Chinook are headed toward extinction.

**Smolt-to-Adult Return (SAR) Estimates Lower Granite (Juvenile) to Lower Granite (Adult)  
 PIT-Tagged Snake River Spring/Summer Chinook ESU (All Only)\*  
 Observed as Juvenile at Lower Granite  
 Possible Transport**

*Primary Orca Food!*  
 \*Wild + Hatchery Fish



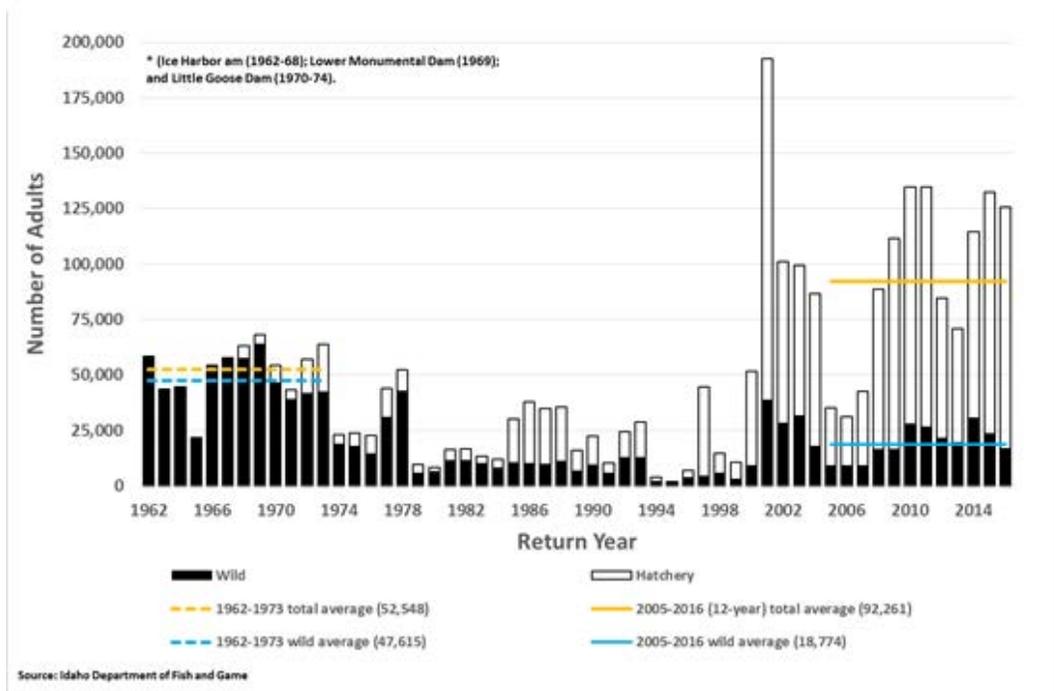
www.cbr.washington.edu/dart

\* SAR for Juvenile Detection Year may be Incomplete

27 Aug 2018 15:57:54 PDT

NOAA's west coast fisheries division has promoted other graphs, such as the one below (from [https://www.westcoast.fisheries.noaa.gov/images/protected\\_species/marine\\_mammals/a\\_bund\\_wild\\_hat\\_sr\\_ss\\_chin\\_lgd.png](https://www.westcoast.fisheries.noaa.gov/images/protected_species/marine_mammals/a_bund_wild_hat_sr_ss_chin_lgd.png)) as evidence that salmon runs are recovering.

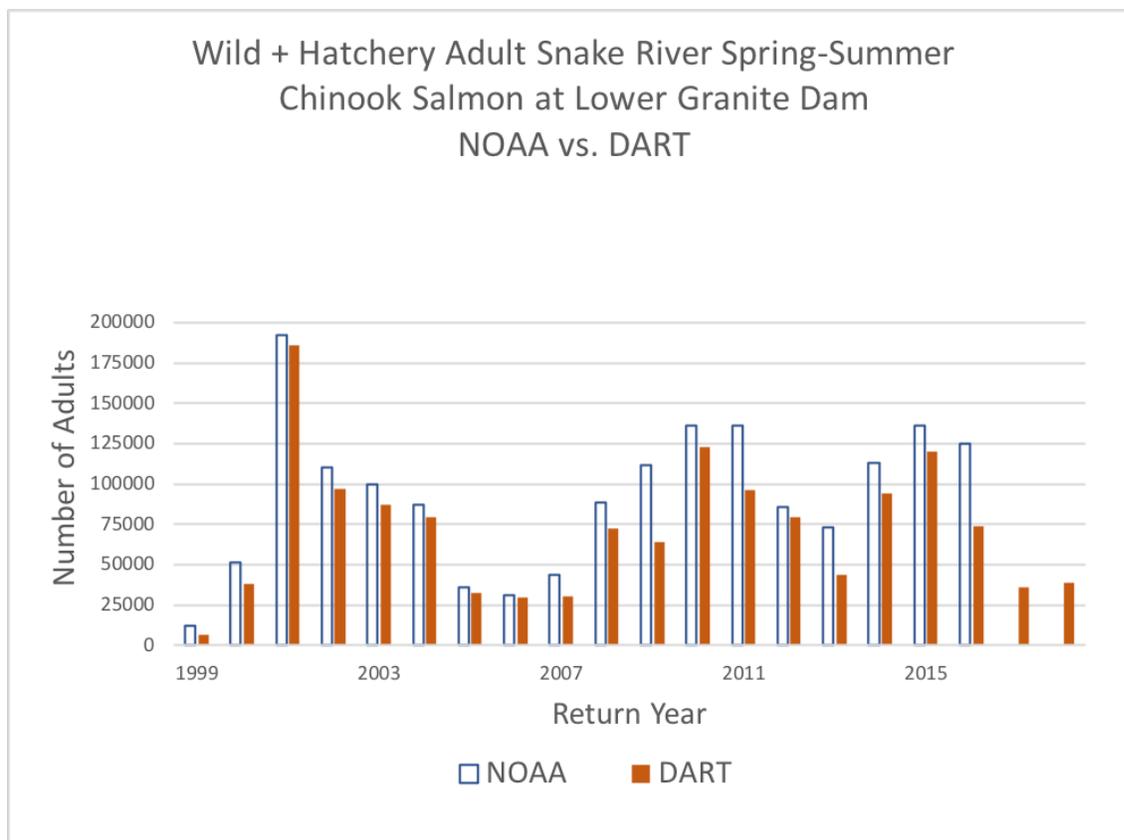
## Abundance of wild and hatchery adult Snake River spring-summer Chinook salmon at Lower Granite Dam



This graph misrepresents Snake River Chinook salmon “abundance.” U.S. Army Corps fish biologists confirm that this chart uses models to predict harvest levels and should not be used to document actual “abundance.” This graph has appeared in several NOAA SRKW fact sheets. Please see enclosed NOAA fact sheets where we have annotated corrections and pointed out errors as we did in our 2016 letter.

In reality, salmon runs are not recovering. Accurate and official fish count information is made available by Columbia Basin Research and the Fish Passage Center after they receive the final daily counts from the U.S. Army Corps NWP Fish Unit. The actual counts of wild and hatchery adult Snake River spring-summer Chinook salmon at Lower Granite have been: 2013 (43,000); 2014 (94,000); 2015 (120,000); 2016 (74,000); 2017 (36,000); 2018 (38,000).<sup>9</sup> The data for 2018 Chinook Adult Passage (Aug-Nov) shows marked decreases with the 10-year average, which itself is a post-dam baseline.<sup>10</sup>

The following graph illustrates the extent to which NOAA has overstated fish abundance when compared side by side with Columbia Basin Research DART (Data Access in Real Time) information:



Of even greater significance is the incorrect impression given by combining wild and hatchery fish in talking about “abundance”, masking the decline of Endangered Species Act listed salmon.

In 2009, NOAA created an Adaptive Management Implementation Plan (AMIP), which it describes as an “insurance policy” for threatened and endangered salmon and steelhead affected by the Federal Columbia River Power System (FCRPS). The AMIP describes an early warning indicator, a significant decline indicator, and an abundance trend trigger for certain endangered fish. Fish biologists have criticized the triggers set by AMIP as being too low.<sup>11</sup> Regardless, even these low triggers have been hit for wild Snake River steelhead. Columbia Basin Research data shows that the number of wild steelhead over Lower Granite declined 28% in 2018 -- from 12,528 in 2017 to 9029 in 2018. This brings the 10-year average to an extremely low number of 35,061.<sup>12</sup> Yet, NOAA has not issued a notification to the Corps. Instead, NOAA’s West Coast Region insists that it must wait for a basin-wide report, the completion of which is still months away, to verify the critically low numbers of returning steelhead. However, there is no need or time to wait because it is nearly impossible for the verification process to show more returns than the fish ladder counts that have been available for months.

As evidenced by the actual fish count numbers and as highlighted by decades of court orders ruling against NOAA<sup>13</sup>, NOAA’s plans to recover endangered Snake River

salmon are not working. NOAA's "ESA Recovery Plan for Snake River Spring/Summer Chinook Salmon & Snake River Basin Steelhead" (Nov. 2017) acknowledges as much: "This recovery plan contains an extensive list of actions to move the ESU and DPS toward viable status; however, **the actions will not get us to recovery.**"<sup>14</sup> This conclusion is evitable since breaching the lower Snake River dams is not among the actions discussed in the recovery plan. It also begs the question of why so much time and money is being spent on extensive measures that still cannot come close to replicating the benefits of breaching the lower Snake River dams.<sup>15</sup>

In sum, while the public message promoted by NOAA's West Coast Region might be designed to quell panic or display optimism, the indisputable facts call for immediate action at the top level. The foregoing Smolt-to-Adult return data shows that the U.S. Corps' \$1 billion effort to improve juvenile fish passage over the four lower Snake River dams has, as NOAA biologists recognized years ago, been a waste.

The Corps' Northwestern Division fails to accept responsibility to take immediate action pending a strong statement from NOAA to breach. However, the Northwestern Division has influenced NOAA's West Coast Region with its incorrect position that the Corps is mandated to operate the dams. Unfortunately, NOAA's West Coast leadership has repeated the Corps' misinformation, incorrectly concluding that NOAA cannot issue a breach recommendation. These closely-knit offices have created a circular argument of deadly consequences for salmon, SRKW, and west coast fisheries with its own economic impacts. To this end, I have enclosed a paper that outlines the five policy, funding, and engineering means that make breaching the four lower Snake River dams a possibility in a matter of months, not years. The Corps can use existing guidelines to place the dams in non-operational status, and start breaching them as a fish mitigation action by Bonneville Power Administration using existing debt reduction and credit mechanisms.

**Immediate dam breaching is necessary for the survival of critically endangered Southern Resident Killer Whales.**

The Southern Resident Killer Whales (SRKW) population has dwindled to 74 total – with 3 deaths in the past 4 months. The SRKW effective breeding population is now less than 30. Only 1 male and 5 females have produced any offspring in the last 5 years.

As NOAA recognizes, Chinook from the Columbia Basin are an important food source for SRKW.<sup>16</sup> The importance of Snake River runs for SRKW prey availability has increased with the virtual collapse of the Fraser River runs.

Breaching the four lower Snake River dams – well-studied in the operable 2002 EIS - offers the quickest and largest impact on prey availability. Approximately 20 million juvenile Chinook enter the lower Snake River annually. Each Snake River dam and reservoir kills 10% each year. This means that the immediate breaching of two dams would prevent the death of nearly 4 million Chinook smolts. Half would die passing the remaining dams and estuary, but at least 500,000 would survive to a suitable prey size for SRKW and allow a viable fisheries harvest.<sup>17</sup> According to world renowned Southern Resident Killer

Whale researcher, Ken Balcomb of the Center for Whale Research, “the Washington coast/Columbia/Snake contribution is vital. IF the Snake became a big wild Chinook producer again, that would be a huge benefit.”

## **Conclusion**

We are simultaneously briefing the U.S. Army Corps of Engineers on the need to, and feasibility of, immediately breaching the four lower Snake River dams. We ask for your support in this request so that future generations may experience the Southern Resident Killer Whales and enjoy the benefits of well managed recreational and commercial fisheries.

Sincerely,

James Waddell

James Waddell, PE, Civil Engineer  
USACE, retired

Enclosures

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<sup>1</sup> Mapes, L. (2018, Oct. 15th) “Orca survival may be impossible without Lower Snake River dam removal, scientists say”. Available at <http://www.seattletimes.com/seattle-news/environment/orca-survival-may-be-impossible-without-lower-snake-river-dam-removal-scientists-say/>; Mapes, L. (2018, Sept. 22nd) “Controversy heats up over removal of Lower Snake River dams as orcas suffer losses”. Available at <https://www.seattletimes.com/seattle-news/environment/controversy-heats-up-over-removal-of-lower-snake-river-dams-as-orcas-suffer-loses/>

<sup>2</sup> “Summary - Improving Salmon Passage, Final Lower Snake River Juvenile Salmon Mitigation Feasibility Report/Environmental Impact Statement”, available at [www.nww.usace.army.mil/portals/28/docs/environmental/lrsstudy/Summary.pdf](http://www.nww.usace.army.mil/portals/28/docs/environmental/lrsstudy/Summary.pdf).

<sup>3</sup> See NOAA satellite tagging data of SRKWs off the mouth of the Columbia, available at

[www.nwfsc.noaa.gov/research/divisions/cb/ecosystem/marinemammal/satellite\\_tagging/index.cfm](http://www.nwfsc.noaa.gov/research/divisions/cb/ecosystem/marinemammal/satellite_tagging/index.cfm)

<sup>4</sup> See “Southern Resident Killer Whale Priority Chinook Stocks Report”, available at [www.westcoast.fisheries.noaa.gov/publications/protected\\_species/marine\\_mammals/killer\\_whales/recovery/srkw\\_priority\\_chinook\\_stocks\\_conceptual\\_model\\_report\\_\\_list\\_22june2018.pdf](http://www.westcoast.fisheries.noaa.gov/publications/protected_species/marine_mammals/killer_whales/recovery/srkw_priority_chinook_stocks_conceptual_model_report__list_22june2018.pdf); see also Center for Whale Research, See Salmon Orca Survival <https://www.whaleresearch.com/orcassalmon>

<sup>5</sup> “Recovering Snake River Spring/Summer Chinook Salmon & Snake River Basin Steelhead”, available at: [www.westcoast.fisheries.noaa.gov/publications/recovery\\_planning/salmon\\_steelhead/domains/interior\\_columbia/snake/Final%20Snake%20Recovery%20Plan%20Docs/9.29.2017\\_recovering\\_snake\\_river\\_salmon\\_steelhead\\_facts\\_reduced.pdf](http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/interior_columbia/snake/Final%20Snake%20Recovery%20Plan%20Docs/9.29.2017_recovering_snake_river_salmon_steelhead_facts_reduced.pdf)

<sup>6</sup> See “Much of Columbia River closing to salmon, steelhead fishing”, (Sept. 12, 2018)

<http://www.spokesman.com/stories/2018/sep/11/much-of-columbia-river-closing-to-salmon-steelhead/>

<sup>7</sup> The year 1944 was before the LSRDs, but it was also before any meaningful regulations on commercial fisheries, resulting in near decimation of the fish populations.

<sup>8</sup> See <https://idfg.idaho.gov/blog/2018/09/steelhead-update-joe-dupont-82818>.

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<sup>9</sup> See Columbia Basin Research, “DART Adult Passage Daily Counts for All Species”, available at [http://www.cbr.washington.edu/dart/query/adult\\_daily](http://www.cbr.washington.edu/dart/query/adult_daily).

<sup>10</sup> See Columbia Basin Research website [http://www.cbr.washington.edu/dart?fbclid=IwAR1cfUa4euGPR3S3RrDou-viShjq1ixRs\\_jCf5hBVV66-FyDF1jSZr4htVs](http://www.cbr.washington.edu/dart?fbclid=IwAR1cfUa4euGPR3S3RrDou-viShjq1ixRs_jCf5hBVV66-FyDF1jSZr4htVs).

<sup>11</sup> The ongoing federal litigation, *National Wildlife Federation et al. v. NMFS, et al.*, Case No. 3:01-cv-00640-SI, has also challenged the effectiveness and sufficiency of the AMIP.

<sup>12</sup> Unfortunately, NOAA has attempted to dismiss the triggers by claiming that there is “an overall upward trend in adult returns of salmon and steelhead through 2014”, and by isolating a 5-year period that included one year of higher returns. See

[https://www.westcoast.fisheries.noaa.gov/publications/col\\_basin\\_partnership/3.22.2018\\_fcrps\\_triggers\\_fact\\_sheet.pdf](https://www.westcoast.fisheries.noaa.gov/publications/col_basin_partnership/3.22.2018_fcrps_triggers_fact_sheet.pdf).

<sup>13</sup> See *National Wildlife Federation et al. v. NMFS, et al.*, Case No. 3:01-cv-00640-SI.

<sup>14</sup> “ESA Recovery Plan for Snake River Spring/Summer Chinook Salmon & Snake River Basin Steelhead” (Nov. 2017), at p. 241, available at

[https://www.westcoast.fisheries.noaa.gov/publications/recovery\\_planning/salmon\\_steelhead/domains/interior\\_columbia/snake/Final%20Snake%20Recovery%20Plan%20Docs/final\\_snake\\_river\\_spring-summer\\_chinook\\_salmon\\_and\\_snake\\_river\\_basin\\_steelhead\\_recovery\\_plan.pdf](https://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/interior_columbia/snake/Final%20Snake%20Recovery%20Plan%20Docs/final_snake_river_spring-summer_chinook_salmon_and_snake_river_basin_steelhead_recovery_plan.pdf).

<sup>15</sup> Among those is the recent proposal to capture steelhead that have already spawned, truck over 130 miles back upriver, re-apply their destroyed coating, nurse them back to health, get them to spawn a second time, then raise the eggs, feed their smolt and release the offspring back into waters above the same dams and reservoirs that kill off approximately 10% of all Salmonid smolt. See proposed “*Nez Perce Tribal Hatchery (NPTH) Operations and Snake River Steelhead Kelt Reconditioning Project*”, available at <https://www.bpa.gov/applications/publiccomments/OpenCommentListing.aspx> (comment period ending Nov. 12, 2018).

<sup>16</sup> See endnote 4.

<sup>17</sup> This number is calculated based on NOAA data. NOAA’s estimated mortality averages 10% per dam and reservoir. See NOAA Memo, dated Sept. 19, 2018 from Richard Zabel to Ritchie Graves, at Table 2. The total estimated number of hatchery Chinook released into the Snake River above Lower Granite is over 20 million. See [http://www.fpc.org/hatchery/misc\\_docs/SnakeRiverHatcheryReleases.pdf](http://www.fpc.org/hatchery/misc_docs/SnakeRiverHatcheryReleases.pdf). Ten percent of 20 million equals 2 million Chinook smolts killed at Lower Granite; ten percent of the remaining 18 million equals 1.8 million Chinook smolts killed, therefore, breaching 2 of the dams results in an estimated 4 million additional Chinook smolts.