



## *Orca Salmon Alliance*

*Defenders of Wildlife  
Save Our wild Salmon Coalition  
Washington Environmental Council  
Natural Resources Defense Council  
Endangered Species Coalition  
Whale and Dolphin Conservation  
Center for Biological Diversity  
Earthjustice*

*Orca Network  
Oceana  
Seattle Aquarium  
Toxic Free Future.  
Whale Scout  
Puget Soundkeeper  
Sierra Club*

December 7, 2018

Maia Bellon, Director  
Heather Bartlett, Water Quality Program Manager  
*Department of Ecology*  
P.O. Box 47600  
Olympia, WA 98504-7600

**Re: Scoping Notice for Short-term Modification of Total Dissolved Gas Standards for Federal Dams on the Lower Snake and Lower Columbia Rivers (11.16.2018)**

Dear Director Bellon and Program Manager Bartlett:

The member organizations of the *Orca Salmon Alliance* submit these scoping comments regarding the Department of Ecology's scoping notice (November 16, 2018) for a short-term modification of total dissolved gas (TDG) water quality standards for federal dams on the lower Snake and lower Columbia rivers through 2021. We support a short-term rule change allowing for an increase in spill up to 125% TDG until Ecology permanently changes those TDG standards, whichever occurs sooner.

***Orca Salmon Alliance (OSA)*** was founded in 2015 to prevent the extinction of the Southern Resident orcas by recovering the wild Chinook salmon populations upon which the whales depend for their survival. OSA members include *Orca Network, Defenders of Wildlife, Save Our wild Salmon Coalition, Washington Environmental Council, Oceana, Natural Resources Defense Council, Sierra Club, Earthjustice, Endangered Species Coalition, Whale and Dolphin Conservation, Puget Soundkeeper, Center for Biological Diversity, Seattle Aquarium, Whale Scout and Toxic Free Future.*

Southern Resident orcas were listed as endangered under the United States Endangered Species Act in 2005. After 15 years of recovery efforts, they are continuing to decline and in 2018 the population dropped to just 74 individuals, the lowest number in over three decades. Their main threats include prey availability, namely a decline in their primary prey, Chinook salmon; environmental contaminants; and vessel interference. Of these threats, lack of prey is the biggest limiting factor in their recovery. Salmon depletion has led to changes in pod structure, decreased

presence in their core summer feeding areas, an increase in stress hormones and a miscarriage rate of almost 70%. There has not been a surviving calf in the population for three years.

As you are aware, Governor Inslee's Orca Task Force recommended Ecology "immediately eliminate the current 115% standard" and allow for increased spill up to 125% TDG on a flexible basis in order to deliver near-term benefits to endangered Southern Resident Killer Whales. These whales are nutritionally stressed and rely on adult Chinook salmon from the Columbia and Snake Rivers as an important prey resource at certain times of the year when their preferred prey can be exceptionally hard to find. Whale scientists believe (link to letter below) that increasing prey availability for these whales is crucial to halting and reversing their decline. As they explain, allowing higher levels of TDG, and in turn higher levels of voluntary spring spill, will lead to higher juvenile survival and increased adult Chinook return to the Columbia, especially spring/summer Chinook, a high-fat priority prey resource for the Southern Residents. OSA strongly supports this important advice from the scientific community.

A number of organizations submitted to you a request for a short-term modification of the TDG standards in September. We believe this letter describes the legal and scientific basis for a short-term modification of the TDG standards at the lower Snake and lower Columbia River dams for the "spring spill season" (from approximately April 1 through June 20) beginning in 2019 and continuing through spring of 2020 and 2021.

OSA strongly supports the elimination on a short-term basis of the current 115% forebay TDG limit at each dam and replacement of the existing 120% tailrace TDG limit with a limit of 125% for up to a minimum of 16 hours per day or more starting in 2019. We urge you to include such an alternative in the forthcoming environmental impact statement pursuant to the above referenced scoping notice. We believe that based upon the best currently available scientific information about the effects of TDG levels up to 125% in the dam tailraces, and analysis of any other alternatives you chose to evaluate, that a short-term modification of the TDG standards to 125% starting in 2019 is the best near-term alternative to better protect salmon and other species in the lower Snake and lower Columbia Rivers.

As reflected in your scoping notice, a short-term modification is consistent with requests from the *Washington Department of Wildlife*, the *Columbia River Inter-Tribal Fish Commission* and recommendations from the *Governor's Southern Resident Killer Whale Recovery Task Force*. It could also easily be coordinated with a parallel modification of TDG standards by the State of Oregon that affect the federal dams on the lower Columbia River. Oregon's standards currently allow TDG up to 120% as measured in the tailrace of the lower Columbia River dams on a 24-hour basis (the only dams directly affected by Oregon's standards). We understand that Oregon is in the process of considering increasing this tailrace TDG level to 125% on a flexible basis. Even if Oregon does not complete this change in time for the 2019 spring spill season, we expect it will in time for the 2020 and 2021 spring spill seasons. In any event, a change in the TDG standards in Washington to allow spill up to 125% starting in 2019 on a flexible basis would still benefit juvenile salmonid survival and protect designated uses.

**Below we briefly summarize our basis for asking you to develop and consider an alternative that would eliminate the current forebay TDG standard and allow TDG levels of up to 125% on a flexible basis between 2019 and 2021 to benefit juvenile salmon during their**

out-migration to the ocean – and the critically endangered Southern Resident orcas that rely upon them for their survival and reproduction.

Recent analyses by the *Fish Passage Center* (FPC) confirm that voluntary spring spill at TDG levels of 125% in the tailrace of each dam is safe for downstream migrating juvenile salmon and steelhead and will further improve juvenile survival – and ultimately adult return rates – as compared to the lower levels of spill allowed under the current TDG exemptions. The most recent such analysis is set out in the FPC’s **Comparative Survival Study (CSS) 2017 Annual Report**.

As this analysis explains, allowing TDG of up to 125% in the tailrace of each dam would lead to a significant increase in smolt-to-adult return rates for Snake River spring/summer Chinook. These findings are (a) more robust than similar conclusions Ecology has previously reviewed in connection with requests to modify its TDG standards; (b) have been reviewed by the *Independent Scientific Advisory Board* with suggestions for additional steps to strengthen the conclusions but without any fundamental disagreement with the CSS findings; and, (c) confirm that a short-term modification of Ecology’s current TDG water quality standards for the lower Snake and lower Columbia River dams is scientifically well supported.

We also refer you to the **draft 2018 CSS Annual Report** for additional information. After review of this evidence, we believe you will conclude that the spill volumes allowed by TDG levels up to 125 percent would provide the best and safest route of passage for juvenile and adult salmon and steelhead by allowing them to avoid higher turbine and screen bypass mortalities, reducing passage delay, and dispersing predators. Even though spill *can* increase TDG levels, which can in extreme cases harm fish and other aquatic life, we believe state and federal laws require Ecology to set TDG limits that maximize salmon survival by balancing the benefits of increased voluntary spring spill with the minimal or non-existent risks of harm from Gas Bubble Trauma (“GBT”) to salmonids and other species.

Further, we are not aware of any scientific study in the last ten years or any anecdotal evidence that any non-salmonid aquatic biota in the Snake or Columbia Rivers have suffered harm from TDG levels above 125% even though these levels of TDG occur frequently in the lower Snake and lower Columbia rivers in the spring due to involuntary spill. In the absence of compelling field evidence that the risks of higher levels of TDG, including 125% of saturation, are harmful to non-salmonid aquatic biota, the more robust evidence of the benefits to salmonids of increased spill as a result of a short-term modification of Ecology’s TDG standards to 125% in the tailrace of each dam should lead Ecology to develop and choose an alternative in its SEPA process that approves a short-term modification of water quality standards to allow TDG up to 125% of saturation on a flexible basis during the spring salmon migrations season starting in 2019.

Of course, salmon are not the only anadromous species migrating through the hydrosystem. Pacific lamprey (*Lampetra tridentata*), for example, may also benefit from the short-term modification of the forebay and 120% tailrace TDG standards, a benefit to aquatic biota that Ecology may not have previously fully considered. Pacific lamprey have shown widespread decline since the 1960s in the Columbia River system due to habitat loss, water pollution, ocean conditions, and problems with dam passage. Lamprey decline is of particular concern in the Northwest because of their importance to Native Americans’ cultural heritage and tribal fisheries. In fact, the lamprey’s situation is perilous enough that the *Oregon Natural Resources*

*Council* petitioned the USFWS to list the species under the Endangered Species Act in 2002. Although the USFWS denied the petition, claiming lack of information, the USFWS has continued concern over the status and distribution of Pacific lamprey.

We encourage you to consult with the *FPC* and the Nez Perce and other Tribes about the benefits of increased spill for lamprey as you develop your EIS for a short-term modification of the TDG standards.

**A short-term modification of WAC 173-201A-200(1)(f)(ii) to allow TDG levels of up to 125% is consistent with the requirements of the regulations that allow such a modification.** First, the modification is short-term: approximately 120 days each year for the next three years at each of the eight lower Snake and lower Columbia river dams. The actual periods of higher and lower TDG (and spill) pursuant to the short-term modification at each dam would depend on the details of the annual Spring Fish Operation Plan (FOP) for these dams developed and adopted in collaboration with the State of Washington and other sovereigns by the relevant federal agencies each year. The short-term modification would provide the flexibility for longer periods of spill to the higher 125% TDG level and other, shorter, periods of lower spill, likely during peak electricity demand hours. In addition, and in accordance with WAC 173-201A-410(2), the duration of the short-term modification would only be for the spring juvenile salmon migration season, which may run from about March 1 to about June 30 each year depending on the details of the Spring FOP, and the modification would only be in place for three years or until Ecology adopts any permanent modification of the requirements of WAC 173-201A-200(1)(f)(ii), whichever occurs sooner.

Second, a modification of the TDG standards to allow spill up to 125% is necessary to accommodate the essential activity of securing beneficial dam passage conditions for migrating juvenile salmon and steelhead in the spring while also allowing appropriate hydropower generation. Most of the salmonids that pass the dams and would be affected by the short-term modification have been listed as threatened or endangered under the Endangered Species Act for many years. As described above, increasingly robust scientific evidence indicates that increased spill, up to at least 125% TDG, increases salmonid survival. For this reason, a short-term modification also is in the public interest.

Third, a short-term modification to allow TDG levels up to 125% is conditioned to minimize or eliminate any degradation of water quality, existing uses, and designated uses in the affected waters. TDG levels in the tailrace of each dam are often 125% or higher already during spring juvenile salmon migration due to involuntary spill resulting from high spring runoff and low electricity demand. We are not aware of any field evidence that these annually occurring high levels of TDG—which vary from year-to-year depending on weather, snowpack and other factors—have significantly harmed water quality or existing or designated uses.

Fourth, a short-term modification to allow TDG levels up to 125% in the dam tailraces would not reduce or remove the Corps' responsibility to otherwise comply with Washington's water quality standards at all times not subject to the short-term modification or alter the Corps' obligations and responsibilities under other federal, state, or local rules and regulations. In fact, such a short-term modification may help facilitate dam operations over the next few years under a biological opinion developed pursuant to the federal Endangered Species Act in order to avoid jeopardy to species of salmon and steelhead that are protected by that Act.

## CONCLUSION

Voluntarily spilling water over the dams on the Snake and Columbia rivers during the spring juvenile migration season delivers important near-term benefits to Chinook salmon that, in turn, are critically important to Southern Resident orcas. Improving salmon survival directly benefits the orcas by increasing prey availability during lean winter months when the orcas forage on chinook from the Snake and Columbia Rivers. Biological monitoring conducted over the last decade and more demonstrates that tailrace TDG levels of 125% do not negatively impact migrating salmonids, resident fish, or invertebrates. The TDG levels currently allowed under Washington's water quality standards, however, unnecessarily limit the benefits of spill for juvenile salmon and steelhead migrating downstream in the spring. We urge you to develop and carefully consider in your EIS a short-term modification of water quality standards to allow TDG levels up to 125% of saturation in the tailrace of each of the eight dams on the lower Snake and lower Columbia Rivers during the spring juvenile salmon migration season beginning in 2019 and continuing through at least 2021, while permanent changes to TDG standards are developed. Thank you for your consideration of these scoping comments. Please contact Robb Krehbiel (rkrehbiel@defenders.org), if you have questions or we can be of assistance in any way.

Sincerely,

*Robb Krehbiel, Washington State Representative  
Defenders of Wildlife  
Seattle, WA*

## RESOURCES:

***2017 Comparative Survival Study Annual Report***

[http://www.fpc.org/documents/CSS/CSS\\_2017\\_Final\\_ver1-1.pdf](http://www.fpc.org/documents/CSS/CSS_2017_Final_ver1-1.pdf)

***Draft 2018 Comparative Survival Study Report***

<http://www.fpc.org/documents/CSS/DRAFT2018CSSReportv1-1.pdf>.

Close, D.A., M. Fitzpatrick, H. Li, B. Parker, D. Hatch & G. James. 1995. ***Status report of the Pacific lamprey (Lampetra tridentata) in the Columbia River Basin.***

*Id.*; see also Nez Perce, Umatilla, Yakama and Warm Springs Tribes. 2008. ***Tribal Pacific Lamprey Restoration Plan for the Columbia River Basin.*** Formal Draft, p. 4.

**Orca Scientists' Letter to the Southern Resident Orca Recovery Task Force (Oct. 2018)**

<https://www.documentcloud.org/documents/5002547-Orca-Scientists-Letter-10-15-18-Final.html>

**Salmon Biologists' Letter to the Southern Resident Orca Recovery Task Force (Aug. 2018)**

<http://www.wildsalmon.org/images/factsheets-and-reports/2018-Scientist-Ltr-Orca-TF-Aug27.pdf>