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Comments submitted electronically

RE: Scope of Environmental Impact Statement for Short-Term Modification to Adjust Total Dissolved Gas Levels in the Columbia and Snake Rivers.

Dear Ms. Bartlett,

Thank you for the opportunity to provide scoping comments to the Department of Ecology (Ecology) related to the proposed short-term modifications to the state's total dissolved gas (TDG) standards. Increasing these standards will allow for more water to be spilled over dams on the Columbia and Snake rivers, both of which support critical salmon runs that southern resident orcas rely on. Ecology has an extremely important role to play in recovering these endangered orcas by reducing stormwater runoff, regulating emerging chemicals of concern, and increasing spill over these dams. Of these actions, increasing spill will provide the most immediate benefits to both salmon and orcas. Defenders of Wildlife (Defenders) strongly supports increasing the state's TDG standards to 125% to provide additional salmon for the southern residents in the near-term.

Defenders is a national non-profit conservation organization with over 1.8 million members and supporters nationwide, including more than 24,000 members and supporters in Washington state. Founded in 1947, Defenders is a science-based advocacy organization focused on conserving and restoring native species and the habitat upon which they depend. We have a long history of contributing to agency-led recovery for endangered species. This past year, our staff participated in the Orca Task Force's Prey Work Group, which helped develop the recommendation to increase the state's TDG standards. We have also worked with schools, cities, counties, and state agencies on programs to reduce toxic pollution throughout the Salish Sea, helping to recover orcas and the salmon they depend on.

As you know, southern resident orcas are one of the most endangered marine species in the United States. Without bold and immediate actions, they are likely to go extinct within our lifetime. While there are several factors that impact southern residents, the most limiting is a lack of their primary prey: chinook salmon. Years of industrial development on rivers in the Columbia Basin caused the precipitous decline and extirpation of salmon runs throughout the region. The large dams and warm, slackwater reservoirs on the Columbia and Snake rivers have made the salmon's journey much more

difficult, and in some cases impossible. Juvenile salmon rely on natural, cold, free-flowing rivers to carry them safely to the ocean. As dams slowed the rivers, salmon populations in the basin crashed, severely reducing one of the orcas' most critical and abundant sources of food.

Historically, swift river currents in the Columbia and Snake river basins quickly carried smolts (recently hatched salmon) to the ocean, where they matured and migrated further out to sea. Slackwater created by dams has significantly increased the amount of time it takes for smolts to safely migrate to the ocean and increased their exposure to lethally warm water and predators (particularly invasive piscivorous fish). Spilling water over the dam spillways (instead of through turbines to produce energy) more closely mimics the natural flow of big rivers, like the Columbia and Snake, and delivers smolts more quickly and safely to the ocean. The more fish that are 'spilled', the more fish that return to the river as adults to spawn. Scientific research collected annually since the mid-1990s demonstrates conclusively that additional spill significantly increases juvenile salmon survival and subsequent adult returns (CSS, 2017).

Without spill, smolts are sent through dam turbines or elaborate bypass systems. These dams and reservoirs kill as much as 70 percent of the out-migrating smolts and more than 15 percent of the returning adults. Some smolts die further downstream as a result of cumulative stress and injury. The most recent and best available science suggests that the safest route over dams for smolts is through spill. Other strategies that involve handling and collecting juvenile salmon for transportation down river, such as barging, have been ineffective at meeting salmon recovery goals and in some cases introduce additional stress and mortality (McCann et al. 2016; Budy et al. 2002; Scheuerell et al. 2009, Van Gaest et al. 2011).

Washington's current TDG standards are outdated and no longer reflect the best available science. Recent increases in spill show that we have been overly conservative with our standards. The Comparative Survival Study suggests that increasing TDG standards to 125 percent would result in 2 – 2.5 times more adult chinook salmon returning than current levels (CSS, 2017). In the past, Ecology has expressed concerns that spill up to 125 percent would be detrimental to other aquatic wildlife. This concern is not supported by the most recent science. Data collected by McCann et al. (2017) between 1998 and 2016 found “no evidence that high TDG levels were associated with increased mortality rates or reduced survival probabilities” (CSS, 2018).

Increasing salmon runs in the Columbia Basin is essential to preventing the extinction of the southern resident orcas. During the winter and early spring, these orcas forage on chinook salmon from Cape Flattery to Monterey Bay. Historically, the Columbia Basin produced the most chinook salmon on the west coast, providing a large and critical source of food for the orcas over winter. Increasing spill over the Lower Snake and Lower Columbia dams would benefit seven of the fifteen most important salmon runs in the orcas' current diet (NOAA and WDFW, 2018).

This is one of the few actions that the state can take in the near term to increase the amount of salmon available to these orcas. Several recent studies have shown that management of freshwater systems can affect smolt-to-adult returns, even when taking ocean conditions into account (Schaller et al., 2013; Petrosky and Schaller, 2010; Schaller and Petrosky, 2007; Haesecker et al., 2012). Because the state cannot manage or change ocean conditions, the most effective tool managers have to increase adult returns (particularly in the near-term) is to increase spill.

We greatly appreciate your leadership to recover both salmon and orcas. Increasing spill in the Columbia Basin will further mitigate the impact these dams have had on endangered salmon runs and provide more food to orcas in the near-term. We look forward to providing additional comments on this proposal once the Draft Environmental Impact Statement is released.

Sincerely,



Robb Krehbiel
Northwest Representative
Defenders of Wildlife

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