Comments on Proposed Roberts Bank Terminal 2 Project

Many others have expressed their concerns about the numerous short-term effects this project will have on marine life during the construction phases, as well as the longer-term effects this will have on the marine habitat and a fragile marine ecosystem.

This habitat is shared by invertebrates, birds, Fraser River salmon populations (some of which are now endangered), pinnipeds, and cetaceans including the endangered Southern Resident killer whales, threatened Bigg's killer whales, humpbacks and their young calves, plus gray whales occasionally seen in nearby areas.

Any project that degrades the marine environment for these species through noise, increased shipping, increased risk of oil spills, and/or habitat destruction should raise red flags. Of special concern are any negative effects on the Fraser River Chinook salmon runs and the endangered Southern Resident killer whales.

The endangered Southern Resident killer whales may be seen in the Salish Sea at any time of the year. Some of the Northern Resident killer whales make this region part of their winter habitat.

Factors threatening the survival of the endangered Southern Resident killer whales include noise and toxins in the marine environment as well as food supply. This Roberts Bank project has the potential to result in increased noise, both during construction and thereafter due to an increase in shipping activity. The project also has the potential to degrade important habitat for salmon stocks including the Fraser River Chinook stocks

Fraser River Chinook salmon have not fared well in recent years, due in large part to habitat destruction. The Fraser River estuary is especially important to at least some of these stocks.

The Fraser River Chinook stocks have been grouped into 16 "designatable units" or "DUs". After assessments in 2018 and 2020, the status assigned by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) looks like this[1, 2].

- Endangered: 10 DUs
- Threatened: 4 DUs
- Special concern: 1 DU; and
- Not at Risk: 1 DU.

Rebuilding the Fraser River Chinook salmon stocks needs to take priority over additional projects that will only set recovery efforts even farther back.

Furthermore, research has shown that the endangered Southern Resident killer whales rely on Chinook salmon as their primary source of food for many months of the year. In a study based on prey sampling[3],

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[1] 2018 COSEWIC status is here for Fraser River and other BC Chinook stocks: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/chinook-salmon-2018.html

[2] 2020 COSEWIC status updates are here for Fraser River and other BC Chinook stocks: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/chinook-salmon-2020.html#toc0

[3] M. Bradley Hanson, Robin W. Baird, John K. B. Ford, Jennifer Hempelmann-Halos, Donald M. Van Doornik, John R. Candy Candice K. Emmons, Gregory S. Schorr, Brian Gisborne, Katherine L. Ayres, Samuel K.

scientific research conducted during the months of May through September, 2004-2008, revealed that 80-90% of the Chinook salmon consumed by Southern Resident killer whales foraging near the San Juan Islands and off the southern end of Vancouver Island originated from the Fraser River, with only 6-14% originating from Puget Sound rivers.

In a later study based on fecal sampling while the whales were in their core summer habitat[4], results showed 79.5% of the diet to be Chinook salmon, with Coho salmon comprising 15% of the diet. Chinook salmon were more important early in the summer, with Coho salmon comprising more than 40% of the diet in late summer.

Recent research on the body condition of Southern Resident killer whales[5] has shown a strong connection between body condition and Fraser River Chinook salmon abundance for the J pod whales, with declining body condition linked to increased risk of mortality.

The Fraser River is one of only a few rivers on the west coast of the United States and British Columbia that host spring, summer, and fall Chinook runs. Coast-wide, spring and summer Chinook runs are not only fewer in number, but the abundance of spring and summer Chinook salmon is lower than the abundance of fall Chinook salmon. Hence, some priority needs to be given to restoring these runs, and to stopping anu projects that could impede recovery efforts.

There are two endangered species, Fraser River Chinook salmon and Southern Resident killer whales whose future is very much tied to improving their environment, not degrading it.

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Wasser, Kenneth C. Balcomb, Kelley Balcomb-Bartok, John G. Sneva, Michael J. Ford. 2010. Species and stock identification of prey consumed by endangered southern resident killer whales in their summer range. Endang. Species Res. 11: 69–82

[4] Ford MJ, Hempelmann J, Hanson MB, Ayres KL, Baird RW, Emmons CK, et al. (2016) Estimation of a Killer Whale (Orcinus orca) Population's Diet Using Sequencing Analysis of DNA from Feces. PLoS ONE 11(1): e0144956. doi:10.1371/journal.pone.0144956

[5] Stewart, J. D., J. W. Durban, H. Fearnbach, L. G. Barrett-Lennard, P. K. Casler, E. J. Ward, and D. R. Dapp. 2021.Survival of the fattest: linking body condition to prey availability and survivorship of killer whales. Ecosphere 12(8):e03660. 10.1002/ecs2.3660