Orca Network

Thank you for the opportunity to comment on the City of Everett Water Pollution Control Facility draft permit. Please see attached comments.

Connecting Whales and People
in the Pacific Northwest

January 31, 2024

Tricia Miller, Permit Administrator
WA State Dept of Ecology - NWRO
PO Box 330316
Shoreline, WA 98133-9716
Submitted via web portal

Re: Comments on the Draft permit for the City of Everett Water Pollution Control Facility

Dear Tricia Miller,

Thank you for the opportunity to comment on the Draft permit for the City of Everett Water Pollution Control Facility. Orca Network is a 501(c)3 organization dedicated to raising awareness of the whales of the Salish Sea and the importance of providing them healthy and safe habitats. Our education, outreach and advocacy efforts reach almost 700,000 people through our Whale Sighting Network, social media, education programs, and visitors to our Langley Whale Center on Whidbey Island. We respectfully submit these comments on behalf of our staff and Board of Directors and urge you to implement strong measures to reduce toxic pollution at the Everett plant and set an example that can be followed by other wastewater treatment plants across the country.

Wastewater treatment plants are a primary source of pollutants, including polybrominated diphenyl ethers (PBDEs), per- and poly-fluoroalkyl substances (PFAS, also known as "forever chemicals), and nutrient pollution, all of which present significant health concerns for humans, salmon, and whales. The lower Snohomish River is a known hotspot for these chemicals.

- PBDEs are chemicals used in flame retardants and consumer products. While they are in the process of being phased out in Washington, they are still found in wastewater plant discharges. They are highly bioaccumulative and they biomagnify through the marine food web. PBDEs are known to cause a host of health effects including neurodevelopmental toxicity, thyroid hormone imbalance and cancers.[1]
- PFAS, which come from industrial releases, firefighting foam, and a range of consumer products, are called forever chemicals because they do not break down in the environment and can move through soil to contaminate water. They are associated with several health concerns, including weakened immune system, reproductive impacts, and cancers.[2] PFAS have been detected in a variety of marine life with indications that they persist and bioaccumulate in the marine environment. [3]

[1] Siddiqi et al. 2003. Polybrominated Diphenyl Ethers (PBDEs): New Pollutants-Old Diseases
[2] https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas.
[3] Khan et al. 2023. Occurrence and Bioaccumulation Patterns of Per- and Polyfluoroalkyl Substances (PFAS) in the Marine Environment.

- Wastewater from the Everett plant contains nitrogen and phosphorus which contribute to nutrient pollution. When nutrients reach high levels, they can increase algal growth, causing toxic algae blooms and reducing dissolved oxygen levels, and these impacts can be compounded by climate change.[4]

Salmon

Salmon are an icon of the Pacific Northwest. They are important culturally for local tribes, many of whom hold treaty fishing rights, and they are the most important source of food for the endangered Southern Resident orcas, comprising over 90% of their diet. Salmon are experiencing declines in many parts of their range, and they are susceptible to chemical pollution. Persistent chemicals such as PBDEs contribute to salmon declines by accumulating in the bodies of juvenile salmon, impacting their immune systems, and increasing susceptibility to disease.[5] Scientists have found that salmon in Puget Sound estuaries tested positive for chemicals at levels known to cause adverse health effects. PBDE levels were high enough in 75% of salmon collected from the Snohomish River to alter thyroid hormone production, which play important roles in olfaction and migration. [6] Reduced levels of dissolved oxygen can have significant negative effects on the survival of salmon, including impacts on growth and development in eggs, alevins and fry, and on the swimming, feeding and reproductive ability of juveniles and adults. [7]

Southern Resident Orcas

Southern Resident orcas are a genetically, acoustically, socially, and culturally distinct population of fish-eating orcas. They were listed as endangered under the U.S. Endangered Species Act in 2005 but are continuing to decline despite the protection and recovery actions initiated by this listing. The population is currently at 74 individuals, the lowest number in four decades. [8] Their main threats include a lack of available prey, namely due to a decline in their primary prey, Chinook salmon; environmental contaminants, particularly bio-accumulative organochlorines such as DDT, PBDEs, and PCBs; and vessel effects and sound, as well as increased potential for oil spills and disease. [9] Salmon depletion has led to changes in their social structure, decrease in presence in their core summer feeding areas, an increase in stress hormones and a miscarriage rate of almost 70%.[10] Toxicants, such as PCBs and PBDEs, accumulate in the blubber of orcas through ingestion of their prey. These contaminants are known to cause numerous adverse health effects in multiple species, including endocrine disruption, reproductive failure, immunotoxicity, and cancers. Nutritional stress exacerbates the role of toxicants as metabolized lipid reserves from the blubber move into circulation in the body.[11]

In 2018, Governor Inslee assembled the Southern Resident Orca Task Force with the directive to make recommendations on a suite of actions necessary to prevent the extinction of the Southern Residents. The Task Force

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[4] https://www.frontiersin.org/news/2020/08/17/effects-of-nutrient-pollution-in-marine-ecosystems-are-compounded-by-human-activity/

[5] Arkoosh et al. 2015. Dietary Exposure to Individual Polybrominated Diphenyl Ether Congeners BDE-47 and BDE-99 Alters Innate Immunity and Disease Susceptibility in Juvenile Chinook Salmon.

[6] O'Neill et al. Assessing the threat of toxic contaminants to early marine survival of Chinook salmon in the Salish Sea.

[7] The Effects of Dissolved Oxygen on Steelhead Trout, Coho Salmon, and Chinook Salmon Biology and Function by Life Stage; Carter 2005.

[8] Center for Whale Research Orca Survey data

[9] National Marine Fisheries Service. 2008. Recovery Plan for Southern Resident Killer Whales (Orcinus orca). National Marine Fisheries Service, Northwest Region, Seattle, Washington

[10] Data from the Center for Whale Research; Shields MW. 2023. 2018–2022 Southern Resident killer whale presence in the Salish Sea: continued shifts in habitat usage; Wasser S.K. et al. 2017. Population growth is limited by nutritional impacts on pregnancy success in endangered Southern Resident killer whales (Orcinus orca).

[11] Mongillo et al. 2016. NOAA Technical Memorandum. Exposure to a mixture of toxic chemicals: Implications for the health of endangered Southern Resident killer whales.

final report includes 49 recommendations intended to increase salmon, decrease contaminants, and reduce noise pollution. Several of these recommendations address prey abundance and toxic pollution as priorities, including a recommendation that focuses on nutrient pollution from wastewater discharge.[12]

Gray Whales

Eastern Pacific gray whales undertake one of the longest migrations of any mammal in the world, traveling up to 12,000 miles round trip each year between breeding grounds in Baja, Mexico and feeding grounds in the Bering and Chukchi Seas. Within this population, there is a unique group of around 20 individuals known as the North Puget Sound gray whales, or Sounders. Some of these whales have been returning to Puget Sound each year since 1990 to feed on ghost shrimp around the southern ends of Whidbey and Camano Islands, Saratoga Passage, Port Susan, Gedney/Hat Island, and the Snohomish Delta. They are baleen whales, primarily feeding in shallower water, taking in sediment and filtering out the bottom dwelling organisms such as ghost shrimp.

Gray whales are currently undergoing an "Unusual Mortality Event" (UME) due to an unexpected significant die-off that was declared in 2019. [13] A total of 692 dead gray whales haves stranded along the migration route from Mexico to Alaska, possibly representing only 10% of the actual mortality, and as of June 2023 the population has declined a staggering 46%.[14] Many of the deceased whales were thin or emaciated and appeared to have died of starvation, and this appears to be due primarily to changes in sea ice conditions in their Arctic feeding grounds.[15] The Sounders gray whales however, have remained relatively stable, and feeding on ghost shrimp in Puget Sound has allowed them to survive and better deal with nutritional stress.[16] As the population of Sounders gray whales continues to grow with the introduction of new individuals finding the Puget Sound ghost shrimp, reduction of chemical and nutrient pollution will be an important step in ensuring their prey resource remains stable and healthy.

Conclusion

Pollution from the Everett Water Pollution Control Facility is releasing toxic chemicals and nutrient pollution into Puget Sound which threatens the health of salmon, orcas, gray whales, and the entire marine food web. We urge you to be a leader in environmental protection by implementing stronger requirements and monitoring to reduce pollution and ensure a healthier future for Puget Sound marine life.

Sincerely,

Cindy Hansen Susan Berta Howard Garrett

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[12] https://orca.wa.gov/progress/all-recommendations/
[13] https://www.fisheries.noaa.gov/national/marine-life-distress/2019-gray-whale-unusual-mortality-event-along-west-coast.
[14] Eguchi et al. 2023. NOAA Technical Memorandum. Abundance of eastern North Pacific gray whales 2022/2023
[15] Stewart et al. 2023. Boom-bust cycles in gray whales associated with dynamic and changing Arctic conditions.
[16] Cascadia Research Collective, Orca Network. 2023. A Guide to the Gray Whales of North Puget Sound.