RE SOURCES

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To: Laurie Niewolny
Water Quality Program
Washington State Department of Ecology
PO Box 47600, Olympia, WA 98504

Submitted online: http://wq.ecology.commentinput.com/?id=HEdBM

Oct 23, 2020

RE: Draft Cooke Aquaculture permit modifications to raise steelhead in four Puget Sound net pens.

Dear Laurie Niewolny,

Thank you for taking the time to consider our comment on the proposal put forth by Cooke Aquaculture Pacific, LLC to modify their existing NPDES permit from raising Atlantic salmon to raising steelhead (*Oncorhynchus mykiss*) at four of their existing marine net pen sites in Puget Sound. We recognize that changing the species from Atlantic salmon to rainbow trout will not result in significant changes to water quality, however we continue to oppose net pen aquaculture of any type because of their contribution of nutrients and toxic chemicals. We feel that net pens pose a significant threat to the marine ecosystem including threatened and endangered species.

RE Sources is a non-profit organization located in northwest Washington and founded in 1982. We work to protect the health of northwest Washington's people and ecosystems through the application of science, education, advocacy, and action. Our priority programs include Protecting the Salish Sea, Freshwater Restoration, Climate Action, and Fighting Pollution–all critical issues affecting our region. Our North Sound Baykeeper is also a member of the Waterkeeper Alliance, with over 300 organizations in 34 countries around the world that promote fishable, swimmable, drinkable water. RE Sources has thousands of supporters in Whatcom, Skagit, and San Juan counties, and we submit these comments on their behalf.

Fish net pens, regardless of species, contribute considerable organic waste including uneaten fish food, fish feces, and dead fish. These waste products result in excess nutrients that lead to eutrophication and subsequent hypoxic zones in Puget Sound.[1,2] Research also shows that eutrophication is leading to a rising algae population that is shading out eelgrass and kelp causing a decline of these critical species.[3] Nutrient inputs, therefore, are having a widespread and direct negative impact on the Puget Sound ecosystem, including the food web that is critical to our endangered orca whale.[2]

Growing any species of fish in high densities can lead to more parasites and diseases than would occur in the natural environmnent.[4,5] Sea lice, viruses, and other emergent diseases all have the potential to further stress our dwindling native salmon populations.[5,6] Furthermore, the use of fish food, pharmaceuticals, and

antifoulants to maintain the health of the salmonids and net pens contribute toxic chemicals and are additional stressors.[7]

In fact, a new study that identified pathogen environmental DNA in relation to salmon net pens found that net pens are potential reservoirs for infectious agents.[8] This research suggests that native salmon and other fish that swim in proximity to net pens are at an elevated risk of contracting an infectious disease. This study not only highlights the potential danger net pen operations have on our native fauna but also illustrates that we are still learning about the potential dangers from net pen operations.

The National Pollutant Discharge Elimination System (NPDES) is intended to regulate point source pollution discharged to waters of the United States so that the discharge does not hurt water quality or people's health. The Cooke Aquaculture net pens are strategically situated in areas that are deep, well flushed, and have complicated circulation patterns. Therefore, this makes it impossible for the Department of Ecology to accurately measure and regulate the amount of discharge emitted by these net pens. These pollutants are continually released into the Puget Sound where they are dispersed and diluted yet continue to bioaccumulate and biomagnify in organisms.[9,10]

We need to prioritize the recovery of our native salmon species over propagating farmed ones. Native salmonids will not benefit from net pens and could be adversely affected by them through worsening water quality. We strongly encourage all fish aquaculture operations be moved inland where pollutants can be measured and regulated before being discharged into waters of the state. Wastewater Treatment Plants will soon need to regulate their nutrient discharges and it only makes ecological sense for net pens to be required to do the same.

Net pens are contributing to the decline of the Salish Sea and are making recovery rates slower and more difficult, for this reason we oppose any type of net pen operation in Puget Sound. Thank-you for reading our comments and taking our concerns into consideration.

Sincerely,

Kirsten McDade
Pollution Prevention Specialist

Eleanor Hines
North Sound Baykeeper, Lead Scientist

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[1]Ahmed, A., G. Pelletier, M. Roberts, and A. Kolosseus (2014) South Puget Sound Dissolved Oxygen Study: Water Quality Model Calibration and Scenarios. Retrieved from: https://fortress.wa.gov/ecy/publications/documents/1403004.pdf

[2]Washington State Department of Ecology. Marine Water and Sediment Monitoring. Retrieved from: https://ecology.wa.gov/Research-Data/Monitoring-assessment/Puget-Sound-and-marine-monitoring

[3]Washington State Department of Natural Resources Aquatic Science. Retrieved from: https://www.dnr.wa.gov/programs-and-services/aquatics/aquatic-science

[4]Walker, Peter & R Winton, James. (2010). Emerging Viral Diseases of Fish and Shrimp. Veterinary research. 41. 51. 10.1051/vetres/2010022.

[5]Bateman, Andrew W, and S.J. Peacock, B. Connors, Z. Polk, D. Berg, M. Krkosek and A.

Morton. 2016 Recent Failure to Control Sea Louse Outbreak on Salmon in the Broughton Archipelago. Canadian Journal of Fisheries and Aquatic Sciences

[6]Krkošek, M., J.S. Ford, A. Morton, S. Lele, R. A. Myers, and M.A. Lewis. 2007. Declining wild salmon populations in relation to parasites from farm salmon. Science 318:1772–1775.

[7]Guide to using Drugs, Biologics, and Other Chemicals in Aquaculture. (2016). American Fisheries Society Fish Culture Section. Retrieved from: https://www.syndel.com/downloads/dl/file/id/112/

[8]Shea, D. et al. 2020. Environmental DNA from multiple pathogens is elevated near active Atlantic salmon farms. Proceedings of the Royal Society B.Retrieved from: https://doi.org/10.1098/rspb.2020.2010

[9]Khangaonkar, T., W. Long, W. Xu. 2017. Assessment of circulation and inter-basin transport in the Salish Sea including Johnstone Strait and Discovery Islands pathways. Ocean Modelling, 109:11-32. Retrieved from: https://www.sciencedirect.com/science/article/abs/pii/S1463500316301408.

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