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=BJeUR

May 13, 2020

RE: National Pollutant Discharge Elimination System permit applications from Cooke Aquaculture Pacific requesting to modify its existing water quality permits for 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 rainbow trout (*Oncorhynchus mykiss*) at four of their existing marine net pen sites in Puget Sound. We recognize that the ecological difference between raising rainbow trout and Atlantic salmon are not huge, however, we continue to oppose any use of net pens in Puget Sound because of their contribution of nutrients and chemicals and the potential to expose our wild marine fauna to diseases. Further, we do not feel that the permit conditions put forth by the Department of Fish and Wildlife adequately address these concerns.

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 both nitrogen and phosphorus to the marine environment. These excess nutrients are leading to eutrophication and subsequent hypoxic zones in Puget Sound.[1,2] Research also shows that another ramification of eutrophication is that the rising algae populations are shading out eelgrass and kelp causing a decline of these critical species.[3] Nutrient inputs, therefore, are having a widespread and direct negative impacts 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] The complicated circulation patterns in Puget Sound make it particularly difficult to assess the true impacts of net pens because the pollutants are dispersed and diluted yet continue to bioaccumulate and biomagnify in organisms.[8,9]

While we recognize that the current permit requests are limited to a modification from farming nonnative Atlantic salmon to that of farming native rainbow trout; we continue to oppose the use of *any* type of net pen operation in Puget Sound. They are contributing to the decline of the Salish Sea and making recovery rates slower and more difficult.

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]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.

[9]Roberts, M., S. Albertson, A. Ahmed, and G. Pelletier. 2014b. South Puget Sound Dissolved Oxygen Study: South and Central Puget Sound Water Circulation Model Development and Calibration. Washington State Department of Ecology Publication No. 14-03-015. https://fortress.wa.gov/ecy/publications/SummaryPages/1403015.html.