



February 23, 2018

Rich Doenges  
Washington State Department of Ecology  
PO Box 47600  
Olympia, WA 98504

RE: Draft National Pollutant Discharge Elimination (NPDES) and State Waste Discharge (SWD) on Water Quality Individual Permits

Dear Mr. Doenges,

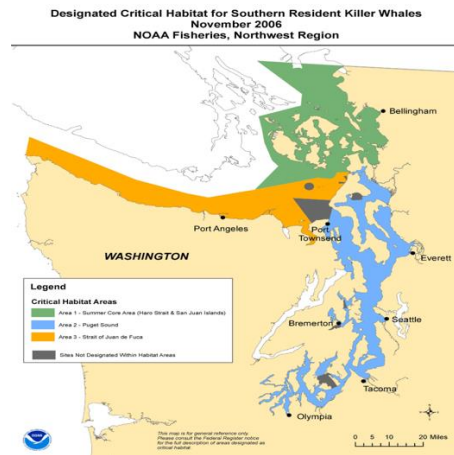
Thank you for the opportunity to comment on decisions regarding Washington's Department of Ecology's (Ecology) efforts in developing Draft National Pollutant Discharge Elimination (NPDES) Permits on Atlantic Salmon Net Pen Aquaculture. Please accept the following as the official filing from Orca Conservancy and our 20,000+ members and supporters.

Orca Conservancy is a 501c3 Washington State nonprofit working on behalf of *Orcinus orca* the killer whale, and protecting the wild places on which it depends. Our urgent attention is on the 75 remaining critically endangered Southern Resident killer whales (SRKWs) that inhabit the inland waters of Washington State and rely on healthy, wild Chinook salmon populations for their survival. Orca Conservancy continues its work towards increasing prey resources, reducing the accumulation of marine toxins, and the destruction of salmon spawning and nearshore habitats; nurseries of the Salish Sea.

We know Congress passed the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," 33 U. S. C. §1251(a); see also PUD No. 1, 511 U. S., 700, 714, the "national goal" being to achieve "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." 33 U. S. C. §1251(a)(2).

Existing guidelines clearly state that open net fish farms should not be sited within 300 feet of habitat for threatened or endangered species. Puget Sound Chinook and steelhead, both endangered species, regularly swim through existing salmon net pens without separation. That is defined as an unaccounted for 'take' under the Endangered Species Act. Furthermore, all four existing open net fish farms are within endangered Southern Resident critical habitat, specifically Area 2 – Puget Sound. (see image A).

Image A:



Joint NMFS/FWS regulations for listing Endangered and Threatened species and designating Critical Habitat at Section 50 CFR 424.12(b) state that the agencies “shall consider those physical and biological features that are essential to the conservation of a given species and that may require special management considerations or protection. Pursuant to the regulations, such requirements include, but are not limited to, the following: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally; (5) habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.<sup>1</sup> Killer whales frequent a variety of marine habitats that do not appear to be constrained by water depth, temperature, or salinity.<sup>2</sup> Observations of killer whales suggest that the resident pods (J, K, and L) can be spread over hundreds of kilometers at any given point, require open waterways that are free from obstruction to move between important habitat areas, find prey and fulfill other life history requirements. Individual knowledge of productive feeding areas and other special habitats is probably an important determinant in the selection of locations visited and is likely a learned tradition passed from one generation to the next.<sup>3</sup>

Existing guidelines recommend that large facilities, in this case Cooke Aquaculture, are subjected to environmental monitoring on a regular basis so impacts are at the forefront. Given the potential impact on ESA-listed species and state trust resources, the core planning team needs agency staff responsible for the protection of ESA-listed species from both federal and state agencies. This should include scientists knowledgeable in juvenile salmonid use of nearshore habitat, scientists with expertise in marine mammal protection, sea bird ecologists, and scientist with expertise in shellfish resource protection<sup>4</sup>. Existing

<sup>1</sup> NMFS (National Marine Fisheries Service). 2006. Designation of Critical Habitat for Southern Resident Killer Whales. Biological Report. Available from: [http://www.nwr.noaa.gov/publications/protected\\_species/marine\\_mammals/cetaceans/killer\\_whales/esa\\_status/srkw-ch-bio-rpt.pdf](http://www.nwr.noaa.gov/publications/protected_species/marine_mammals/cetaceans/killer_whales/esa_status/srkw-ch-bio-rpt.pdf)

<sup>2</sup> Baird, R. W. 2000. The Killer Whale: foraging specializations and group hunting. Pages 127-153 in J. Mann, R.C. Connor, P.L. Tyack, and H. Whitehead, editors. Cetacean societies: field studies of dolphins and whales. <sup>4</sup> Ford, J.K.B., G.M. Ellis, L.G. Barrett-Lennard, A.B. Morton, R.S. Palm, and K.C. Balcomb III. 1998. Dietary specialization in two sympatric populations of killer whales (*Orcinus orca*) in coastal British Columbia and adjacent waters. *Canadian Journal of Zoology* 76:1456-1471.

<sup>3</sup> Ford, J.K.B., G.M. Ellis, L.G. Barrett-Lennard, A.B. Morton, R.S. Palm, and K.C. Balcomb III. 1998. Dietary specialization in two sympatric populations of killer whales (*Orcinus orca*) in coastal British Columbia and adjacent waters. *Canadian Journal of Zoology* 76:1456-1471.

<sup>4</sup> Wild Fish Conservancy, 2017

guidelines also recommend only antibiotics licensed by the FDA for ‘fish food’ be used. That said, *ememectin benzoate* (SLICE) was used at the Port Angeles facility to ‘control’ an outbreak but had not been approved by the FDA at the time. Use of *ememectin benzoate* in nearshore and offshore finfish aquaculture is a best, questionable, and can be highly toxic if swallowed. While *ememectin benzoate* is the only product in the U.S. labeled for treatment of sea lice infestation, there is documented evidence of sea lice that are resistant to this treatment.<sup>5</sup> Animal studies have also shown that the ingestion of *ememectin benzoate* can result in acute oral toxicity or death and release toxic byproducts that make the surrounding environment toxic.

While additional ‘objective’ monitoring of existing Atlantic salmon finfish pens in Puget Sound are imperative for restoration, until we take bold action towards strong, enforceable regulations, not only with the permit process, but also the potential existence and until the complete phase out in 2022, we risk even further detrimental impacts to our waterways and the ecosystems within them.

Sincerely,



Shari L. Tarantino  
President  
Orca Conservancy

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<sup>5</sup> F. Lees, M. Baillie, G. Gettinby, and C. W. Revie, “The efficacy of emamectin benzoate against infestations of *Lepeophtheirus salmonis* on Farmed Atlantic Salmon (*Salmo salar* L) in Scotland, 2002-2006,” PLoS One, vol. 3, no. 2, pp. 2002–2006, 2008. This study focuses on the known treatment of sea lice, Emamectin Benzoate (SLICE) on *Lepeophtheirus salmonis* (a species of sea lice) over the years 2002- 2006 in Scotland. The study shows that treatments of *Lepeophtheirus salmonis* with SLICE was not always effective and the authors have indicated that there was reduced efficacy of SLICE over time. [29] S. M. Aaen, K. O. Helgesen, M. J. Bakke, K. Kaur, and T. E. Horsberg, “Drug resistance in sea lice: a threat to salmonid aquaculture,” Trends Parasitol., vol. 31, no. 2, pp. 72–81, Feb. 2015. This study describes compounds used to treat sea lice and the species of sea lice that are significant within the aquaculture industry. The study shows side-by-side layouts of treatment options and the mechanisms of action. The authors also show trends of resistance within sea lice populations and discuss available treatment options. [30] A. W. Bateman et al., “Recent failure to control sea louse outbreaks on salmon in the Broughton Archipelago, British Columbia,” Can. J. Fish. Aquat. Sci., vol. 73, no. 8, pp. 1164–1172, Aug. 2016. This study describes increasing populations of sea lice following largely successful control efforts over the previous decade. Resistance to treatment regimens was noted within juvenile pink and chum salmon in the Broughton Archipelago in British Columbia. The authors believe that the outbreak of resistant sea lice may be due to the following reasons: 1. Poor timing of treatment 2. Evolution of resistance 3. “anomalous environmental conditions” that propagated sea lice growth or 4. High number of wild pink salmon returns.