



Coastal Watershed Institute (CWI)

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“Our mission: To protect and restore marine and terrestrial ecosystems through scientific research and local community, place based partnerships.”

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Washington Department of Fish and Wildlife

PO Box 43200

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R.e. Comments MDNS 19- 056: RAISING STERILE ALL-FEMALE TRIPLOID RAINBOW TROUT/STEELHEAD AT EXISTING MARINE NET PEN SITES IN PUGET SOUND

We are writing to respond to the MDNS issues for the SEPA determination titled: MDNS 19-056: RAISING STERILE ALL-FEMALE TRIPLOID RAINBOW TROUT/STEELHEAD AT EXISTING MARINE NET PEN SITES IN PUGET SOUND

<https://wdfw.wa.gov/sites/default/files/2019-10/MDNS%2019-056%20Culturing%20STHD%20in%20Cooke%20Net%20Pens.pdf>.

The Jamestown Tribe and Canadian company Cooke Aquaculture announced a joint fish-farm venture to rear black cod and sterile all-female rainbow trout-steelhead in a press release issued Thursday. The Department of Fish and Wildlife has issued [a mitigated determination of non-significance \(MDNS\)](#) beginning a 21-day comment period. This requires neither a full environmental assessment nor environmental impact statement under the State Environmental Policy Act. Such an assessment would have considered the risks of diseases, pollution, further escapes and collapses, and the potential harm to federally-listed native steelhead as well as other salmon species and forage fish. Our comments on the MDNS include but are not limited to the following. Additional comments may be provided in the future.

The ecosystem impacts of net pens-irrespective of species-are well documented. The Millennium Ecosystem Assessment (2005) clearly identified aquaculture as a major threat, stating: "*The greatest threat to coastal systems is the development-related conversion of coastal habitats... through coastal urban sprawl, resort and port development, aquaculture, and industrialization*" (emphasis added).

Aquaculture, including net pen (irrespective of species), are a significant source of marine plastic debris (Hinojosa and Thiel 2009, Thiel et al 2011, Arthur and Baker 2011). Locally, the current net pen site in Port Angeles harbor was one of the top source of marine debris in early Clallam MRC/NWS Commission derelict gear clean up efforts (Clallam MRC, personal communication).

Net pen ecosystem-scale impacts are significant. They concentrate and propagate parasites and disease for native stocks of salmon and forage fish (Morton et al 2011, Krkošek et al 2013,

Morton and Routledge 2016). Atlantic salmon net pens in British Columbia have recently been documented as the likely point of introduction of piscine orthoreovirus (PRV) into Pacific Salmon ecosystems (Kibenge et al, 2017). They fail regularly and introduce non-native/nuisance species of salmon to wild systems. In September of 2017, a Cooke Aquaculture net pen failed and released hundreds of thousands of non-native species into the Salish Sea. Insecticides, herbicides, antibiotics, and high concentrations of fish feed used as a course of business with net pens all have impacts to the marine ecosystem (Dill 2011).

Salmon farm/net pen impacts to native fish are well documented, and catastrophic. Morton et al. (2017) documented significant infection of wild salmon with deadly piscine orthoreovirus (PRV) associated with net pens. Purcell et al 2018 have documented that PRV is (now) wide spread across our region-but this in no way negates the fact that this as an extremely dangerous disease. PRV is the only aetiological agent required to induce HSMI in Norwegian Atlantic salmon (Wessel et al., 2017). Morton and others are researching what appears to be a PRV related disease event in the Broughton region of BC unfolding this year (Morton unpublished data). Connors et al. (2010) documented negative impact on wild coho production due to net pens. Morton and Symonds (2002) documented negative impact of net pen management practices on killer whales, *Orcinus orca*. Godwin et al 2017 documented significant impact of sea lice from net pens on feeding of juvenile sockeye. Similar impacts are a concern for forage fish (Shaffer et al 2019). Davis (2016) summarizes the link between salmon net pens and the collapse of wild salmon runs in British Columbia. Ford and Myers (2008) document a world-wide impact of net pens on wild salmon.

The Washington coast, including the Salish Sea, and in particular the Strait of Juan de Fuca are extremely important migratory, rearing, and feeding corridor-for many of the region's critically endangered and declining salmon and forage fish stocks. These include sockeye, Chinook, coho, sockeye, chum, cutthroat, steelhead, and bull trout, surf smelt, sand lance, herring, and eulachon. A number of critical forage fish, including herring, surf smelt, and sand lance, also spawn on the beaches here (Fresh 2006, Quinn, 2009, Melnychuk et al 2010, Moore et al 2010, Shaffer et al 2012, Parks et al 2013, Wefferling, 2014, Fresh et al unpublished data). Ecto-parasitic copepods are observed regularly on juvenile herring and sand lance along the central Strait nearshore (Shaffer et al 2019), indicating that impacts from existing net pen facilities across the region are already occurring not only for salmon, but also forage fish.

Ecosystem services analysis have repeatedly proven that protecting and restoring intact natural capital systems-which when functioning don't cost a penny, and do not contaminate our marine ecosystems but instead contribute to the economic efficiency of our communities- are the only meaningful way to sustain our highly valued region (Flores 2014). In the context of salmon farms, protection means total avoidance of marine waters and ecosystems. This is possible through upland and closed systems.

Because of the importance of our region's fish and ecosystems they depend on, the state of Washington and federal government have spent literally billions of dollars over the last two decades to restore the ecosystem and fisheries resources of Puget Sound. In 2015, the top 12 proposed restoration projects alone of Washington state's Puget Sound Partnership were estimated to cost \$173 million dollars (Dunagan 2015). Projects have included hundreds of millions of federal and state dollars for the Elwha dam removals, the largest dam removal in the world, and ongoing efforts to restore and protect the Dungeness River and Dungeness Bay to restore and protect salmon and forage fish species. This project is exactly in the middle of both of these littoral cells.

Given the investment in restoring and conserving the Salish Sea, the extremely high value of the fish resources and ecosystem services of our region, the damage net pen/salmon farm facilities do to these exact same resources, it is absolutely contra indicated to allow the region's salmon and forage fish resources to be exposed to the large scale harm that occurs due to in-water net pens.

It is also unnecessary.

All of these impacts are completely avoidable by the system being redesigned to a land based/upland, closed design. The technology for closed system aquaculture has been proven to be cost effective, and environmentally sound (Tal et al 2009). Given the environmental impact of in water salmon farms, clearly upland contained/closed systems are a logical and reasonable option. For these reasons, the existing aquaculture net pens should not be allowed to build a new in-water facilities. The existing net pens should be removed from Washington waters, and replaced only with upland and contained closed system aquaculture.

Net pens are banned in Alaska- the world's last remaining strong hold for wild salmon, as well as Oregon and California. It is over time for Washington state to follow suit. In fact, citizens of Washington state have been trying to for literally decades.

Bottom line: we KNOW these industrial aquaculture activities are dangerous to our coastal systems and must NOT continue. We further know that that there is a win-win alternative: UPLAND CONTAINED. If it costs the industry a bit more to develop the technology, so be it. The tax payers of Washington state have invested enormous public dollars to restoring and preserving our native ecosystem.

The issuance of this MDNS is an error and must be rescinded, and the application for this regional proposal rejected until it is modified to upland contained facility.. The State of Washington including the Governor's office, the WDFW, DoE, and DNR representatives, need to be the leaders they were hired and /or elected to be, stand up, and follow all other west coast states of Alaska, Oregon and California, and immediately limit net pens to upland contained facilities only. This should be done in a timely manner, with a designated, prompt real time sunset deadline. Doing so will allow the marine environment to provide critical rearing and migratory ecosystems for a number of struggling and restoring species that are the focus of national, federally funded restoration and protection actions.

Respectfully,



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Executive Director, Lead Scientist

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