OUR SOUND, OUR SALMON

Comments on Washington Department of Ecology Draft National Pollution Discharge Elimination System Waste Discharge Elimination Permits for Cooke Aquaculture Atlantic Salmon Net Pen Facilities Fort Ward, Clam Bay, Orchard Rocks, and Hope Island.

Our Sound, Our Salmon
02/25/19

On behalf of the undersigned members of Our Sound, Our Salmon, we appreciate the opportunity to provide comments on the content of the four draft permits. We limit our comments to two points: (1) Washington Department of Ecology (DOE, Ecology) should refrain from issuing the permits until the National Marine Fisheries Service (NMFS) and the U.S. Environmental Protection Agency (EPA) have completed formal consultation under Section 7 of the Endangered Species Act (ESA) on EPA's approval of Ecology's sediment management standards for marine finfish rearing facilities, and (2)Ecology must address and include conditions on discharge of various pollutants that affect the designated uses of receiving waters and land adjacent to the four facilities that are not included in the current drafts.

Ecology's Section 7(d) Obligations During ESA Consultation

Under Section 7(d) of the ESA, Ecology should defer issuing the permits until EPA and NMFS complete the ESA consultation on EPA's approval of Ecology's sediment management standards for marine finfish rearing facilities.

ESA consultation on EPA's approval of Ecology's sediment management standards for marine finfish rearing facilities has been contested for several years. Most recently, in 2015, Wild Fish Conservancy (WFC) sued EPA and NMFS for violations of the ESA associated with EPA's approval. As a result of that lawsuit, on October 3, 2018, EPA and NMFS reinitiated formal consultation on EPA's approval. The agencies expect to complete formal consultation by July 11, 2019. This consultation could—and hopefully will—result in recommended alternatives, mitigation measures, or other suggestions regarding the operation of marine finfish rearing facilities that could be incorporated or included in the permits.

Because EPA and NMFS are currently in consultation, Section 7(d) of the ESA applies and prevents Ecology from issuing the permits. Section 7(d) provides:

> After initiation of consultation under subsection (a)(2), the Federal agency and the permit or license applicant shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section.

16 U.S.C. § 1536(d). Ecology, as the applicant for EPA's approval of sediment standards, is subject to Section 7(d) and cannot irreversibly or irretrievably commit resources until EPA and NMFS complete formal consultation. Issuing the permits or otherwise entering into contracts during consultation constitutes an irreversible or irretrievable commitment of resources in violation of Section 7(d). *Pac. Rivers Council v. Thomas*, 30 F.3d 1050, 1056 (9th Cir. 1994); *Nat. Res. Def. Council v. Houston*, 146 F.3d 1118, 1127–28 (9th Cir. 1998). This is true even if the permits are subject to revision. WAC 173-220-190; WAC 173-220-150(1)(d); *see Nat. Res. Def. Council*, 146 F.3d at 1128 (finding violation of Section 7(d) even though water contract had a savings clause to allow for modifications to comply with federal law). Accordingly, Our Sound, Our Salmon requests that Ecology defer issuing the permits until formal consultation is complete, expected by July 11, 2019, so that Ecology can incorporate any reasonable and prudent alternative measures that result from the consultation.

Air and Noise Pollution Impacts to Adjacent Lands

The permits need to address and place limitations on the fouling of the air during net de-fouling and cleaning operations. Residents on shoreline properties near the Fort Ward facility, for example, cannot conduct normal outdoor activities, particularly during warm months, during net cleaning operations due to the foul smell of the air that directly results from the operations. This air pollution causes severe depression of local residential property values, apart from human respiratory impacts. DOE needs to determine appropriate maximum levels of airborne particulates and odor-causing chemicals and require facility operations to monitor and maintain the responsible airborne pollutants below maximum levels.

In addition, light from the net pen operations impairs uses of residential properties as does noise from the operations (e.g. generators for lights and pumps).

To this end, DOE should commission an appropriate sociological survey of resident households within one-half mile of the shorelines of the locations of each of the four farms. The survey should interview residents to assess the degree and frequency (times of day, times of year) that normal and desired residential activities (e.g., outdoor family activities and social events such as dinner parties) are disrupted and/or prevented by each of the three pollutants.

Light Pollution Impacts to the Nearshore Environment + ESA-Listed Species

Light pollution from the lighting of the net pens between the hours of dusk and dawn is a credible threat to ESA-listed salmonids and other native salmonid and non-salmonid fishes, as it acts as an attractant to migrating juvenile and returning adult salmonids such as ESA-listed Chinook salmon, bull trout, and steelhead. It can also increase the risks of predation on juvenile salmon rearing in adjacent nearshore environments by attracting them to the food and feeding fish (rearing farmed Atlantic salmon and others in the net pens) where fish, avian, and marine mammal predators congregate.

Apart from the predation risk, the lighting of the pens at night can delay migration thus impairing normal migratory behaviors, including timely migration through Puget Sound and resting and less energetically demanding night-time migration due to lower predation risk. DOE should restrict and, if necessary, ban the use of lighting of net pens in order to reduce the false attraction and associated risks of night-time lighting.

Feed Discharge Impacts to Native Fishes

Open water Atlantic salmon net pens routinely disperse large volumes of feed into public waters within the boundaries of the net pens as sustenance for their farmed Atlantic salmon. Some portion of the feed dispersed may not be consumed by Atlantic salmon in the pens, and thus makes its way into, and have an impact upon, the surrounding marine environment. The high-energy tidal zones in which many Atlantic salmon net pens are located may cause wide dispersal of unconsumed feed. This dispersal of feed into public waters represents a continuous and constant act of "chumming", and attracts native fish species.

Physically small fish species, such as baitfish species and outmigrating and rearing salmonids (including ESA-listed Chinook and steelhead), may be attracted by net pen feed to the point where they physically enter a net pen facility and are vulnerable to predation from farmed Atlantic salmon in the pens. The constant dispersal of feed may also cause disruptions in the natural migratory patterns of native salmonids, as the pens provide a constant and unnatural food source that may cause salmonids to occupy a single location for a longer period of time than is typical, and deter rearing or migrating salmonids from developing key feeding strategies which are critical to their early growth and development. This constant source of broadcast feeding, otherwise known as "chumming" is also likely to draw native species (including ESA-listed Chinook and steelhead) from their protective shallow nearshore habitats to net pen

locations located in deep water, increasing their exposure to both avian and aquatic predators within and outside the pens.

Additionally, feed dispersed by the Atlantic salmon net pen industry may have detrimental nutritional impacts on native fish species, as fish competing for survival in the wild may have distinct nutritional requirements from those being grown in an isolated facility.

Attraction, Entrainment, and Discharge of Native Fishes

All native fishes, including but not limited to bait fishes such as Pacific herring and potentially migrating or rearing juvenile salmon (including ESA-listed Chinook salmon and steelhead), may be attracted to the net pens due to the presence of feed and odor of rearing Atlantic salmon. Native fish that have entered the pens attracted by the large volumes of feed may then be entrained in the suction harvest machinery during the harvest of adult farmed Atlantic salmon. There are (at least) two issues that DOE needs to address with regard to this issue in the permits:

1. A comprehensive accounting of species composition as well as total numbers of non-Atlantic salmon fishes entrained during each net pen harvest period in which adult farmed salmon harvest occurs. This is required, among other reasons, in order that any take of ESA-listed salmon and steelhead may be accounted. All harassment injuries and mortalities of all individuals entrained in the vacuum pump harvesting equipment including but not limited to direct mortalities of ESA-listed individuals must be accurately determined and reported to DOE and NOAA and avai,lable for public review.

2. All non-Atlantic salmon entrained (sucked up) by the harvest operations are commonly "disposed of" by being thrown from the upper deck of the harvester ship back into the water on the outside of the nets. The volume of native fish is often so extensive it requires the harvester staff to use snow shovels to scoop them up from the landing area on board the harvest vessel. Pinnipeds and gulls are routinely observed in the water and air adjacent to the net pens, feeding on the native fish as they are being discarded. There are three additional issues here that DOE needs to address in the permits:

    - Indirect predation on ESA-listed juvenile Chinook salmon and steelhead (take).
    - The illegal feeding of pinnipeds, which provides an additional attraction for the pinnipeds that increases the likelihood of their predating on ESA-listed Chinook salmon and steelhead in the vicinity of the pens.
    - The operator of the Atlantic salmon net pen operations must obtain a fishing license or permit that would allow them to harvest native fish as described above. If such a permit is already in place, we have not been able to confirm its existence.

Discharge of Chemical and Pharmaceutical Pollutants

In order to treat specific diseases of fungal occurrences or to prevent infection, chemicals and pharmaceuticals are often applied by the industry to the fish, water, or feed in the net pens. Among the potential and likely harmful impacts to designated uses of surrounding water is the use of these chemical or pharmaceuticals for treating infections, parasites or diseases such as "yellow mouth" where the U.S. Food and Drug Administration (FDA) requires a 30 day waiting period before treated fish may be approved for human consumption. Native fishes in the immediate vicinity of the treated pens may also be exposed to or consume the very same chemicals and pharmaceutical treatments (including fish that may enter the pens attracted by the presence of feed and fish odors). These fish may then be caught in recreational or commercial fisheries and unknowingly be consumed by the public within FDA's required 30 day waiting period.

Similarly, the net pen industry's annual reports acknowledge that Atlantic salmon net pen escapes can and do occur. These escapes have been known to range from a few fish to thousands. The public may also be exposed to health risks any time Atlantic salmon escape the net pens due to the fact that these escapees may have recently, or were in the process of, receiving pharmaceutical or chemical treatments. The fact that the net pen industry has proven that it is unable to prevent such escapes puts the public's health and safety at risk.

Amplification and Discharge of Pathogens and Parasites

Pathogens present in Atlantic salmon net pens may infect native fishes, particularly salmonids, in the vicinity of the facilities. There are many pathogens that can be amplified in the marine environment by net pen facilities. Some notable examples include piscine reovirus (PRV), infectious hematopoietic necrosis virus (IHNv), and viral hemorrhagic necrosis virus (VHNv).

The physical and biological nature of all commercial net pens, including Atlantic salmon net pens, create an environment highly suitable for the spread and amplification of native or exotic parasites and viruses due to the large density of animals in small confined locations for extended periods of time.

Parasites and viruses can be spread from one animal to another through physical contact or through waterborne transport. While it is not uncommon for wild fish to contract harmful native viruses and parasites, infected wild fish are subject to natural selection and are therefore often consumed by predators that seek out fish with diminished physical or behavioral capacities. This exposure to predators (natural selection) significantly helps control the spread of infection to large numbers of fish in the wild. On the other hand, fish infected within the confines of a net pen are not subject to natural predation of any sort, which allows for parasites and viral pathogens to spread rapidly to large numbers of fish within the pen. This scenario can create an environment where the volume and distribution of viruses or parasites within and outside the pens can far exceed natural background levels. Such an environment can exceed nature's ability to suppress viral or parasitic outbreaks and can lead to epidemic conditions.

This amplification can be further exacerbated through waterborne tidal transport or by physical contact with native fish small enough to enter in and out of the net pens through the netting. These factors can create amplification scenarios that far exceed natural background levels and create a harmful discharge zone extending significant distances beyond the parameters of the physical pen.

The amplification of parasites or pathogens as we have described in this matter should be considered a dangerous discharge.

Fish Flesh Discharge

Atlantic salmon net pens chronically discharge particles of decaying fish flesh that are often consumed by native fish and birds. These particles may be contaminated with pathogens, parasites, pharmaceuticals or chemicals that may be ingested by native fishes, including salmonids. Studies have shown that these particles are potential vectors for pathogens such as PRV.

Discharge Pollution from Improper Net Cleaning Practices

DOE should require that net cleaning operations take place on land where removed waste materials and a multitude of aquatic organisms can be removed and properly disposed of on land (including the application of appropriate pre-disposal treatment of wastes). Net cleaning operations currently occur via high-pressure remote power-washing in/under the water (i.e., *in situ*) which occurs without any appropriate state or federal permitting and thus violates state and federal law.

Revised Pollutant Reporting Requirements

Currently, the monthly NPDES Reports provide data for the following:

- Total biomass of fish in the pens (in lbs. and kg.), total feed fed (lbs., kg.), regular feed (lbs., kg.).

In order to calculate the discharge of organic pollutants such as phosphorus and nitrogen from feeding operations, the following data should additionally be provided in monthly NPDES reports:

- Food conversion ratio (FCR), each month, including data and method(s) used to estimate FCR, separately for each pen.

- Food composition of feed fed; including protein, lipid, and carbohydrate content of the feed. Minimally, %phosphorus and %protein in the feed.

- Monthly fish loss (numbers and lbs./kg.) and estimated monthly mortality rate

- Daily Water temperature data

DOE must require the information needed to obtain a full understanding of the likely patterns of distribution of chemical, pathogen, and organic wastes (both solid and liquid) from occurrence in the net pens to the surrounding ("downstream") environment via patterns of current circulation. DOE thus needs to employ one or more currently available tidal circulation models that are capable of estimating with high precision the distribution of particles of various sizes and specific gravities. This is essential to determining the habitats outside of the net pens and their limited benthic boundaries that are likely to receive doses of harmful pathogens, parasites, pharmaceuticals, chemical, and organic nutrient wastes discharged from the farm operations.

Transition to Closed-Containment

Several of the pollution discharges listed above are difficult, if not impossible, to address from a regulatory framework perspective. Many of the described discharges are not currently required to be reported under NPDES reporting guidelines. To rightfully address these discharges, all of which present credible and substantial risks to the health of the marine environment in Puget Sound, substantial resources would need to be dedicated. Most of these discharges, even if attempts at mitigation are made, are impossible to fully eliminate due to the fundamental operational nature of open-water Atlantic salmon net pens. Discharges that can never be reliably fully eradicated include:

- the amplification of pathogens and parasites

- dispersed feed impacts to native fishes

- the attraction, entrainment, and discharge of native fishes

- nuisance attraction

- chemical and pharmaceutical pollutants

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A transition of the industry to land-based closed-containment operations is the only way to fully eliminate these discharges. Land-based closed-containment facilities, by definition, would not allow for the marine environment to be impacted by the discharges listed above. Until such a transition is made, discharges from open-water Atlantic salmon net pens will continue to negatively impact Puget Sound and its native species.

These comments are supported by the undersigned members of Our Sound, Our Salmon:

Audubon Washington

Center for Biological Diversity — Because life is good.

Friends of the Earth

Friends of the San Juans — Celebrating 40 Years

Olympic Environmental Council

Olympic Forest Coalition

ORCA Conservancy — Est. 1996

Puget Soundkeeper

Surfrider Foundation

WDC Whale and Dolphin Conservation

Whale Scout

Whidbey Environmental Action

Wild Fish Conservancy

Our Sound, Our Salmon is coordinated by Wild Fish Conservancy