

# OUR SOUND, OUR SALMON

## **RE: Comments on Draft Cooke Aquaculture permit modifications to raise steelhead**

Our Sound, Our Salmon

October 26, 2020

Drafted and Submitted by:  
Wild Fish Conservancy

*Our Sound, Our Salmon is a campaign coordinated and overseen by the Wild Fish Conservancy*  
[www.oursound-oursalmon.org](http://www.oursound-oursalmon.org)

### **These comments are joined by the following organizations:**

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Ms. Laurie Niewolny,

Wild Fish Conservancy (WFC) and a coalition of groups operating under the banner of Our Sound, Our Salmon (OSOS) have long raised serious concerns about the environmental impacts commercial open water net pen aquaculture poses to water quality, species listed under the Endangered Species Act (ESA), and the greater ecosystem of Puget Sound.

These concerns are based firmly in the ever-growing scientific and evidentiary record in the Pacific Northwest and around the world that continues to document and demonstrate the environmental risks and consequences of rearing high-densities of highly-domesticated fish in marine open water net pens. In Puget Sound, we have seen these well-documented risks inherent to open water net pens can and do materialize, endangering the health of Washington's waters which support our culture, economy, wild salmon, and killer whales.

In February 2019 and June 2020, Our Sound, Our Salmon submitted comments during the National Pollutant Discharge Elimination System (NPDES) permit review process of Cooke Aquaculture's (Cooke) Puget Sound net pens (Attachment 1). After reviewing the Department of Ecology's (Ecology) modifications to the existing NPDES permits, several major risk factors continue to be absent or inadequately addressed in these permits. The modified permits fail to account for changes in risk assessment imposed by HB2957 and fail to "eliminate commercial marine net pen escapement" and "eliminate negative impacts to water quality and native fish, shellfish, and wildlife" as intended by the Washington state legislature in passing this law. As such, Ecology is incorrect to treat this new project as an extension of an existing practice.

Furthermore, Ecology relies on a failed, faith-based and retroactive approach to enforce the NPDES permits. Relying on any industry to self-monitor and self-report violations that are likely to result in economic penalties or loss is irresponsible and further increases the likelihood environmental harm and catastrophic events will occur. Under this regulatory framework, Cooke has demonstrated a history and pattern of NPDES permit and Clean Water Act violations in Puget Sound; have failed to correct violations when instructed by Ecology and other agencies; and habitually appeal punitive fines and enforcement actions by regulatory agencies. This pattern of violating environmental statutes and reluctance to comply with agency enforcement is consistent with Cooke's record around the world. Ecology has not provided sufficient evidence that the permits can be effectively enforced to prevent catastrophic events before they occur, let alone "eliminate" risks as the legislature intended.

Ecology's decision to conduct the NPDES permitting process and move toward finalizing the modified permits while foundational review processes that provide the legal and scientific basis for the NPDES permits are under review and subject to change is overtly premature with the potential to violate the State Environmental Policy Act (SEPA). We strongly recommend that Ecology delay the permitting process and not issue final permits while the underlying SEPA review of Cooke's new project is being legally challenged, and while federal ESA consultation of the impacts of Puget Sound net pens pose to ESA-listed species is ongoing. Both of these procedures are likely to conclude in the coming months and the results are likely to identify new water quality risks and environmental impacts to ESA-listed species that need to be analyzed and considered by Ecology in the NPDES permitting process. It would be reckless to issue

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permits that could allow the planting of steelhead in Puget Sound net pens when Ecology is well-aware of the ongoing legal and scientific reviews and their potential to unveil new environmental impacts to water quality and the marine ecosystem.

Lastly, we reiterate from our previous comments, that the modified NPDES permit review should not occur without thorough consultation with local, state, federal, and tribal governments.

## **The NPDES Permitting Process Should be Delayed**

### **The Underlying SEPA Review is Being Legally Challenged**

Ecology is violating SEPA by relying on the Department of Fish and Wildlife's (WDFW) legally deficient SEPA analysis. WDFW decided to issue a Mitigated Determination of Nonsignificance (MDNS) in its SEPA review and issue a 5-Year Marine Aquaculture Permit to Cooke without complying with SEPA procedural requirements, without considering alternatives, and without fully analyzing and considering the potential significant environmental consequences of this new net pen aquaculture project, particularly when compared to baseline conditions in Puget Sound. WDFW's decision is currently being legally challenged in Washington Superior Court with a dispositive ruling pending from the judge hearing the case. See *Wild Fish Conservancy, et al. v. Washington Department of Fish & Wildlife, et al.*; King Cty. Superior Ct., No. 20-2-03704-4 SEA. That ruling is expected at any time. Given the magnitude of new scientific evidence and potential environmental impacts to ESA-listed species WDFW failed to consider during the review, it is possible that the Court will find WDFW violated SEPA, invalidating the MDNS and the permit granted to Cooke. In doing so, the Court may require WDFW and/or agencies with jurisdiction (which includes Ecology) to reinitiate the SEPA environmental review process and conduct additional environmental review (environmental impact statement or EIS) before determining if the scientific record supports this new project moving forward.

As Ecology is a jurisdictional agency in that SEPA review, the Court's decision will directly impact whether or not the NPDES permits can move forward. As such, Ecology will violate SEPA if it authorizes the NPDES permits or finalizes the permitting process by relying on WDFW's flawed SEPA analysis and determination. Comprehensive review of the environmental impacts posed by Puget Sound net pens, as required by SEPA, has not occurred since the 1990 EIS which never fully considered the environmental impacts of rearing native species or partially-sterile (triploid) fish in open water marine net pens. An EIS based on the current scientific record is likely to unveil significant pollution and water quality risks and harms posed by net pen aquaculture that Ecology will need to address and thoroughly review.

We expect this will require Ecology to initiate either an entirely new NPDES permitting process or to expand the scope of the current review, as the EIS or additional SEPA analysis will investigate environmental impacts associated with rearing steelhead as well as impacts associated with the practice of net pen aquaculture in general.

It would violate SEPA to move forward with the authorization of Cooke's modified NPDES permits by relying on WDFW's deficient SEPA analysis and determination. Our Sound, Our Salmon therefore fully incorporates herein the attached Our Sound, Our Salmon and Wild Fish

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Conservancy comments that explain why WDFW's SEPA analysis is deficient—these comments apply equally to Ecology (Attachment 2).

## **Federal ESA Consultation on Puget Sound Net Pens is Ongoing**

Ecology is violating Section 7(d) of the Endangered Species Act (ESA) by issuing Cooke's NPDES permits before the U.S. Environmental Protection Agency (EPA) and the National Marine Fisheries Service (NMFS) conclude their reinitiation of consultation under Section 7 of the ESA on EPA's approval of Ecology's sediment management standards for marine finfish rearing facilities. On May 29, 2020, EPA released a new analysis of the impacts Puget Sound marine finfish net pens pose to ESA-listed species and critical habitats (Attachment 3). This new analysis came after the EPA considered new information that had not previously been considered in the 2008 and 2010 Biological Evaluations, including:

- Disease transfer from Atlantic salmon net pen fish to Pacific salmon, primarily relying on a letter from NMFS dated January 12, 2016, and accompanying memo.
- An escapement event that occurred on or around August 19, 2017, at Cooke Aquaculture's Site 2 net pen off Cypress Island and the follow up and the associated response actions.
- Updated National Pollutant Discharge Elimination System permitting actions by the Department of Ecology to minimize escapement risk and covers the planned transition at existing commercial net pens facilities to raise steelhead instead of Atlantic salmon, which must be phased out by 2022 per Washington state law.
- The EPA NPDES general permit which currently covers tribal enhancement net pen facilities and the reissuance of the general permit in late 2020. The EPA plans to expand the scope of the general permit to include federal research facilities and to allow for the marginal expansion of tribal enhancement facilities. The tribal enhancement facilities raise and release native salmonids and the federal research facilities will raise native fish (Pacific salmon, sablefish, etc.).

After reviewing this new information, the EPA made an initial species effects determination that Puget Sound's marine finfish net pens "*are likely to adversely affect*" the following ESA-listed fish populations:

- Chinook salmon (Puget Sound ESU)
- Chum Salmon (Hood Canal summer-run ESU)
- Steelhead (Puget Sound DPS)
- Boccaccio (Puget Sound/ Georgia Basin DPS)
- Yelloweye Rockfish (Puget sound/ Georgia Basin DPS)

As a result, NMFS reinitiated formal consultation and is currently preparing a Biological Opinion to analyze and expand upon this initial determination.

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Because EPA and NMFS are currently in consultation, Section 7(d) of the ESA applies and prevents Ecology from issuing Cooke's NPDES 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, is subject to Section 7(d) and cannot irreversibly or irretrievably commit resources until EPA and NMFS complete formal consultation. Issuing Cooke's updated NPDES 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, we request that Ecology defer issuing Cooke's NPDES permits until formal consultation is complete so that Ecology can incorporate any reasonable and prudent alternative measures that result from the consultation.

## **The Modified NPDES Permits Fail to Account for Changes in Risk Assessment Imposed by New Law**

As stated in the June 8, 2020 Our Sound, Our Salmon NPDES permit comments, we continue to urge Ecology to acknowledge and address that the passage of HB 2957 created a new and stricter regulatory regime for marine net pen aquaculture and that the law would have ended net pen aquaculture and all the risks they pose in Puget Sound by December 2022. While the law does not prohibit native fish from being reared in open water net pens, the law does impose a series of other requirements, and establishes the legislature's clear intent that future marine net pen aquaculture be subjected to greater scrutiny. That intent is clear in Section 5 of the engrossed bill, which requires agencies to "continue the existing effort to update guidance and informational resources to industry and governments for planning and permitting commercial marine net pen aquaculture," and mandating: "The guidance must be designed to eliminate commercial marine net pen escapement and to eliminate negative impacts to water quality and native fish, shellfish, and wildlife."

In finding that "marine finfish aquaculture in general may pose unacceptable risks" and mandating guidance to "eliminate" those risks, the legislature overturned the 1990 EIS's determination that Atlantic salmon aquaculture posed acceptable risks, and in doing so, imposed a stricter standard than existed previously. It is clear that the legislature intended to alter the risk assessment framework used for marine finfish aquaculture in general from the status quo.

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The decision for the underlying 2020 SEPA review and associated net pen aquaculture permits to rely on the outdated 1990 EIS and risk assessment (based on best available science thirty years ago) without acknowledging the significant shift in risk assessment mandated by the 2018 law (based on best available science today) is scientifically indefensible.

We continue to urge that the NPDES permits conform with this current law and share the policy's objective to *eliminate*— not mitigate— commercial marine net pen escapement and negative impacts to water quality, native fish, shellfish, and wildlife.

The EPA's acknowledgment that Puget Sound net pens are likely to adversely affect ESA-listed species is based largely on risks associated with escapes events and is just one of the clear indicators that open water net pens are incompatible with the state's objective of eliminating the risks associated with escapes.

In light of these new legal mandates, and the different risk profile presented by rearing a domesticated and partially-sterile (triploid) form of a native species, this permit application should not be considered an extension of past practices, but should rather be addressed as if the proposed replacement of Atlantic salmon with domesticated, partially-sterile steelhead is a new project. HB 2957's new standards require re-examining past decisions, and holding Cooke to that higher standard of eliminating risks.

Many local governments and even state agencies have enacted stricter laws and statutes over the past thirty years since these net pens were grandfathered in that would not allow for new commercial net pen aquaculture projects in 2020. By considering Cooke's new project as an extension of past practices, Ecology is not only failing to meet the new standard set by HB2957, but is directly enabling Cooke to continue benefiting from environmental exemptions that for three decades have protected the commercial net pen industry from complying with local statutes, state conservation plans, and other environmental laws put in place to protect Puget Sound's most sensitive species, habitats, and ecosystems since the early 1990's.

When Cooke's leases expire for these sites in 2022, the Department of Natural Resources (DNR) will not consider the applications as renewals of their previous leases, but brand-new lease agreements that will need to adhere to today's environmental standards.

We encourage Ecology to take a similar approach as DNR to the NPDES permits that correctly assess Cooke's applications as a new project and adhere to the risk assessment imposed by the new law to eliminate escapes, water quality risks, and other environmental harm.

## **The draft NPDES permits must be enforceable.**

Ecology lacks the regulatory authority sufficient to enforce the proposed modified NPDES permits. The regulatory environment described in the modified NPDES permits (and previous NPDES permits) relies almost entirely on the permittee to self-report and self-monitor their own NPDES permit violations. As violations are likely to result in economic loss or penalties, industries have little incentive to report violations, increasing the likelihood environmental harm and catastrophic events will occur.

While operating in Washington's public waters, Cooke has demonstrated a pattern of unscrupulous behavior, violating their NPDES permits, the Clean Water Act, the terms of their

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leases, and other local statutes. Given this history in Puget Sound, Ecology has not provided sufficient evidence that the modified NPDES permits are enforceable to a level necessary to prevent significant environmental impacts to water quality, ecosystem health, and threatened and endangered species before they occur.

The failure of past NPDES permits to address this fundamental regulatory flaw has not only resulted in catastrophic events, but shifts the burden of monitoring and reporting violations onto local landowners, environmental organizations, Tribal Nations, and other members of the public. On two occasions Cooke issued cease and desist letters to members of the public in an attempt to silence environmental advocates.

Examples that this regulatory environment is insufficient include:

- The Cypress Island collapse in August 2017 that resulted in the release of over 250,000 non-native Atlantic salmon into Puget Sound. The collapse was first reported to state officials by a citizen, not Cooke, and the emergency response plan fell largely on the shoulders of Tribal Nations, commercial fishers, recreational fishers, and other members of the public. A multi-agency investigation determined Cooke's failure to adequately maintain and clean their nets and insufficient attention to engineering were responsible. Cooke knowingly underreported the cause of the collapse and the number of fish that escaped in an attempt to mislead the public and agency officials, and to minimize potential fines or penalties.
- Viral testing of escaped fish conducted by nonprofit organization Wild Fish Conservancy and published in *Virology Journal* (Kibenge et al. 2019; <https://doi.org/10.1186/s12985-019-1148-2>) demonstrated nearly 100% of the Atlantic salmon that escaped from Cypress Island were infected with an exotic virus (Piscine Reovirus or PRV) originating from Iceland where Cooke sourced their Atlantic salmon eggs. Prior to the collapse, this virus was never reported by Cooke or discovered by state agencies. As all other Puget Sound net pens were planted with fish from the same egg supplier in Iceland where the virus originated there is a high likelihood other net pens were also infected. However, due to existing monitoring and regulatory rules, state agencies were prohibited from testing fish within the pens without Cooke Aquaculture's permission or without the company first self-reporting the presence of the virus. As a result, agency officials could not intervene even when the reasonable likelihood of a large-scale threat existed, therefore leaving hundreds of thousands of potentially contaminated fish in Puget Sound for months before they were harvested.
- Wild Fish Conservancy sued Cooke for violations of the CWA following the Cypress Island collapse. The lawsuit settled for \$2.75 million, exposed CWA violations never investigated or discovered by Washington state agencies. This included federal rulings that 2012, 2015, April 2017, and October 2017 Pollution Prevention Plans required under the NPDES permits and approved by agencies were deficient and that Cooke's Fish Release Prevention Plan did not include required procedures for tracking the number of fish in the salmon farms and those lost to predation and escapement.

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- From 2018-2020 local landowners have submitted to Ecology video footage of Cooke employees disposing of wild bycatch into Puget Sound during harvest operations. In one video, Cooke employees can be seen using a snow shovel to dispose of bycatch from the harvest vessel into Puget Sound. Cooke reports they have never experienced bycatch during harvest. Disposing of bycatch or any biological material into Puget Sound is a violation of their NPDES permits and has never been enforced by Ecology.
- Citizen complaints in April 2017 reported Cooke was committing water quality violations at a dock near its Bainbridge Island net pens. Over the next 8 months, violations continued to occur despite Cooke receiving two letters from Ecology, a notice of violation, and requests on several occasions from the agency that the violations be fixed. The violations included:
  - Unlawfully discharging polluting matter into state waters
  - Pressure washing equipment, nets, and vehicles over the water and allowing wastewater to enter Puget Sound
  - Changing boat engine oil over the water
  - Failing to put safeguards in place to protect water quality
  - **Failing to correct water quality violations when directed**
- On October 19, 2019, local landowners and off-duty WDFW employees visiting Bainbridge Island were the first to report the partial sinking of the Orchards Rocks net pen in Rich Passage. Records from the incident show Cooke's emergency response was inadequate despite new regulations in place after the Cypress Island collapse and occurred during the SEPA review of Cooke's new project to rear steelhead. If the net pen was stocked at the time this event likely would have resulted in the escape of fish, reconfirming the NPDES permits are not sufficient to eliminate the risk of escapes.

It is worth nothing, this record is not unique to Puget Sound. For example, in 2012, Cooke pleaded guilty to illegally dumping the pesticide cypermethrin at their Bay of Fundy net pen facilities in Canada, endangering nearby lobsters and resulting in one of the largest fines ever levied under Canada's Fisheries Act. In 2019, the U.S. federal government considered a moratorium on the Chesapeake Bay's menhaden fishery after Omega Protein/ Cooke failed to comply with catch limits.

In addition to a pattern of behavior that suggests a disregard for environmental laws, Cooke frequently uses litigation to avoid regulatory enforcement and to influence decision-making. While operating in Puget Sound, Cooke threatened during legislative testimony to sue Washington state under NAFTA if a bill passed banning nonnative commercial marine net pen finfish aquaculture; appealed the State's decision to terminate their Cypress Island lease; appealed the State's decision to terminate their Port Angeles lease and appealed again after a State Court upheld the termination; appealed Ecology's fine holding the company accountable for the Cypress Island collapse until the agency agreed in settlement they could select how a portion of the funds would be used; and used cease and desist letters on multiple occasions in an attempt to silence local environmental advocates, including during the SEPA review public comment period that determined the future of their new project to commercially-propagate steelhead. This habitual use of litigation to avoid accountability for violating environmental laws



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and to influence the decision-making process of legislators, government officials, and members of the public is further evidence self-monitoring and self-reporting is not an appropriate regulatory environment for this company.

Ecology has modified the NPDES permits to avoid catastrophic escape events in the future including clarifying that any fish reared in Cooke's net pens are prohibited from release; adding requirements and details about actions Cooke must take to notify state agencies of events that could potentially lead to fish escape; and adding requirements about how nets must be maintained. Given Cooke's history of failing to self-report and self-monitor violations, failure to correct violations when instructed, and reluctance to comply with enforcement actions are strong indicators that these faith-based standards are insufficient to prevent other large-scale escape or viral outbreaks from occurring; again, inconsistent with HB 2957 and the legislature's intent to eliminate the risk of escapes from marine net pens.

In order to prevent potential adverse impacts to public resources from pollutant and water quality impacts at the operations of each net pen, Ecology must have the authority and capacity to conduct regular and unannounced site visits and to conduct any biological sampling and testing deemed advisable to assure the public that no adverse impacts are occurring. This should include requiring the presence of independent observers on-site during each harvest operation to quantify and describe the species and life stages of all by-caught species.

A history of NPDES permit and CWA violations must be considered in this process so permits are drafted to ensure violations are detected before catastrophic events occur. As long as the permits continue to largely depend on industry self-monitoring and self-reporting, both known and unknown violations are likely to occur with retroactive, punitive fines as the only regulatory control— an ineffective method of protecting water quality and ESA-listed species from harm.

We strongly believe that operating and profiting in public waters is a privilege. If the permits are not enforceable and Ecology cannot provide the public with sufficient evidence that catastrophic events are likely to be prevented before they occur, the permits should not be granted.

## **NPDES Permits Need to Consider Toxic Pollutants**

The modified NPDES permits must consider and address the risk of toxic pollutants including viruses and diseases. Ecology continues to exclude this significant environmental risk factor from the NPDES permits despite Wild Fish Conservancy raising this issue since 2013. Ecology has argued that pathogens like viruses and bacteria do not fall into Ecology's regulatory oversight, however disease-causing agents are defined by the EPA as toxic pollutants and WDFW does not have the authority to issue CWA fines or violations related to the unlawful discharge of toxic pollutants. Monitoring and reporting of sea lice are already included in the NPDES permits and it is far past time that the NPDES permit review consider toxic pollutants as well. The permits must ensure that Cooke's final Pollution Prevention Plan and Fish Escape Plans will eliminate the risk disease-causing agents pose to the Puget Sound ecosystem and the biological integrity of its wildlife, especially ESA-listed species.

Like any high-density confined animal feeding operations, commercial net pens are known to amplify and spread endemic and exotic viruses, bacteria, diseases, and parasites into the marine environment in large numbers. In 2017, a British Columbia study documented a strong

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correlational connection between disease prevalence in net pens and disease transfer to wild fish populations (Morton et al., 2017; <https://doi.org/10.1371/journal.pone.0188793>). Recent research in British Columbia found novel viruses in endangered salmon, and found evidence that these novel viral infections may originate from farmed salmonids (Mordecai et al., 2019; <https://doi.org/10.7554/eLife.47615>).

A study published in Virology Journal in 2019 (Kibenge et al. 2019; <https://doi.org/10.1186/s12985-019-1148-2>) revealed that nearly 100% of the 250,000 Atlantic salmon that escaped the Cypress Island collapse were infected with an exotic virus originating in Iceland where Cooke purchases their Atlantic salmon eggs. Further, a new paper forthcoming in the peer-reviewed journal Virus Evolution, confirms that the Piscine Reovirus (PRV) found in the fish that escaped during the 2017 Cypress Island collapse and elsewhere in the eastern Pacific is not a native virus, but rather is one whose origin is in the north Atlantic basin. (Siah et al. 2020 Genomes Reveal Genetic Diversity of Piscine Orthoreovirus in Farmed and Free-ranging Salmonids from Canada and USA. Accepted manuscript, Virus Evolution).

At present state agencies do not stipulate minimum distances between the pens and do not take factors like tidal flow (affecting pathogen plumes emitted from the pens) and proximity to salmon bearing streams into consideration, despite decades of work (and catastrophic disease outbreaks costing billions of dollars in the Norwegian and Chilean Atlantic salmon farming industries) that led to the development of guidelines to reduce disease transmission. While international (OIE) guidelines suggest a minimum of 5km between pens, a study in Chile (Mardones et al. 2011; <https://doi.org/10.1016/j.prevetmed.2011.07.005>) suggested that 10km between pens might be a safer guideline (note that there are no native salmon in Chile; this guideline was meant only to protect one salmon farm from infection by an adjacent farm). In those countries, the guidelines were put in place to limit the spread of disease between farms or between farms and wild fish, and were developed to assist the salmon farming industry in protecting their investments.

Under the existing regulatory system in place, the only time WDFW has access to monitor net pen fish for viruses, diseases, or parasites is prior to their release into the net pen environment. During the grow out period (roughly 18 months), state agency officials do not have authority to randomly monitor or conduct agency sampling or testing for disease-causing agents in farmed fish within net pens and must rely on the net pen operator's self-monitoring and reporting to notify state officials if an outbreak or infection has occurred. Even in these instances, state officials must receive permission from the net pen operator before having access to the facilities. As a result of this fundamental breakdown in the regulatory oversight of this industry, known outbreaks or suspected risks of viral infections have been allowed to amplify and spread in Puget Sound net pens with agency officials unable to intervene despite being aware of the threat.

Examples include:

- In 2012, an outbreak of Infectious Hematopoietic Necrosis virus (IHNV) occurred in one of the net pens located in Rich Passage near Bainbridge Island. Despite the net pen operator declaring "quarantine" of the infected pens (which does nothing to prevent the virus being shed from infected Atlantic salmon into the water flushing through the pens), the virus quickly spread to open water facilities at two other locations in Rich Passage, including one within the Orchard Parks Aquatic Reserve. This outbreak occurred in

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April and May when outmigration of juvenile salmon was at its peak. WDFW's Fish Health Supervisor at the time requested access to the net pens to conduct testing and place sentinel cages to monitor viral exposures but was refused access throughout the duration of the outbreak by American Gold, the owner at the time. Under public disclosure, there is no agency record of this event nor was it disclosed in American Gold's annual report to the state, leaving no evidence for the public that an outbreak occurred, let alone what the impacts of the outbreak may have been. This lack of transparency highlights another key issue related to the monitoring and recordkeeping of agencies and the industry around viruses and diseases that needs to be corrected and accounted for.

- Following the Cypress Island collapse viral-testing and genetic sequencing of escaped fish conducted by Wild Fish Conservancy demonstrated that nearly 100% of the over 250,000 fish that escaped were infected with an exotic virus originating from Iceland where Cooke purchased their Atlantic salmon eggs. Cooke never reported an outbreak of PRV. As all other Puget Sound net pens were planted with fish from the same egg supplier in Iceland where the virus originated, there is a high likelihood other net pens were also infected. However, state agencies were prohibited from testing fish within the pens and hundreds of thousands of potentially contaminated fish remained in Puget Sound for months before they were harvested.

It is both reckless and unacceptable for WDFW and Ecology to issue permits that allow for steelhead to be planted in Puget Sound while this fundamental regulatory inadequacy exists. Ecology must rectify this gap in regulatory oversight in the modified ND PES permits. If Ecology does not feel they have the regulatory authority to test for and monitor disease-causing agents, Ecology and WDFW must work together to incorporate monitoring and reporting requirements for disease-causing agents in net pen aquaculture regulatory permits. Agency staff must be authorized to randomly inspect net pens for disease-causing pathogens or any other potential violation. This monitoring should be funded by the industry.

Measures to reduce the amplification and spread of viruses are particularly important as Cooke's new project will rear native steelhead which increases the likelihood that pathogens can be transferred between farmed steelhead and conspecifics in the wild. With Puget Sound's native steelhead ESA-listed and on the brink of extinction, this should be a major concern to Ecology.

Given the frequent presence of marine mammals, birds, and other wildlife falsely attracted to the pens during harvest operations and recent video of orcas swimming nearby as well, it is all the more important to identify pollutants, including antibiotic resistant bacteria, pharmaceuticals, and other emissions, that might do harm to these protected species.

## **Bycatch During Harvest Operations and in Puget Sound Net Pens Needs to be Monitored**

Native fishes—including but not limited to forage fishes such as Pacific herring and potentially migrating or rearing juvenile salmon may be attracted to the net pens due to the presence of feed and the presence of lower trophic taxa drawn to the feed and waste emanating from the

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pens. 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 steelhead.

Ecology's modified NPDES permits currently do not address bycatch of native fish despite Wild Fish Conservancy and local landowners submitting video and photographic evidence of bycatch as early as 2018 and through 2020. These photos and videos document bycatch of non-target fish during Cooke harvesting operations in Puget Sound after being entrained (sucked up) by the harvest operations. In these videos staff can be seen discarding bycatch from the harvest back into the water on the outside of the nets. In one case, the volume of native fish was so extensive an employee uses a snow shovel to scoop bycatch from the landing area on board the harvest vessel and back into Puget Sound. Pinnipeds and birds are routinely observed adjacent to the net pens during the harvest, feeding on the wild fish as they are being discarded, a violation of state and federal laws prohibiting the feeding of pinnipeds and marine mammals.

In response to this evidence, Ecology has continually taken a dismissive approach claiming it cannot be known for sure that the material being discharged by Cooke employees are in fact wild fish and that even if they were, the degree to which bycatch is occurring is "de minimis" (too trivial or minor to merit consideration). Instead Ecology assumes that the materials being discharged are other biological materials resulting from the harvest process, which is a violation of Cooke's NPDES permits and has never been enforced while continuing to be documented. This is another prime example that the NPDES permits are not enforceable. Ecology has never monitored or regulated bycatch and Cooke has never reported bycatch occurs during harvest. For Ecology to consider harvest of native fish that may be ESA-listed as "de minimis" with no data to support that claim is reckless. The NPDES permits must be updated to require comprehensive accounting of the species composition, number of fish, condition of the fish (alive or dead), origin (hatchery or wild), and the age structure of nontarget fishes entrained during each net pen harvest period in which adult farmed steelhead harvest occurs. This data should be collected by independent observers on-site during each harvest operation and should be funded by the net pen industry.

This is required, among other reasons, to account for the potential take of ESA-listed salmon and steelhead. All harassment injuries and mortalities of 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 state agencies and NMFS and available for public review.

It is not surprising that there would be such bycatch, and it is likely that it includes endangered and threatened species. British Columbia requires reporting of bycatch (or what they term "incidental catch") at aquaculture facilities. A complete record of the species captured since 2011 is available from the Canadian Department of Fisheries and Oceans (<https://open.canada.ca/data/en/dataset/0bf04c4e-d2b0-4188-9053-08dc4a7a2b03>). In that dataset, salmon species are recorded for every year on file. In some cases, hundreds of thousands of fish are recorded as incidental catch as part of a rapid depopulation of the pens to control a disease outbreak. Even excluding those incidents, an average of over 35,000 incidental catches in net pens per year are recorded in British Columbia. It is likely that a proportionate amount of bycatch occurs in Puget Sound, and could have serious effects on the Sound's sensitive ecology. Because Cooke has not reported bycatch, the state does not monitor

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their efforts, and because independent observers are not able to view the harvest process in detail, we cannot fully measure the harm this bycatch causes.

Surveys of aquatic diversity at sites near these net pens indicate substantial numbers of threatened and endangered juvenile salmonids, and forage fish. State-funded surveys including “West Sound Nearshore Fish Utilization & Assessment (SRFB Grant: 07-1898)” (2010), “Cypress Island Aquatic Reserve Pilot Nearshore Fish Use Assessment” (2011), “West Whidbey Nearshore Fish Use Assessment” (2007), and the ongoing “Hood Canal Nearshore Juvenile Fish Use Assessment” find substantial populations of threatened coho, Chinook, pink, and chum salmon in near-shore waters at sites near and similar to those where net pens operate.

Those surveys also demonstrate substantial variation in total species diversity and population sizes from site to site (e.g. Figure 3), and between surveys at the same site over time. Salmonid populations could vary by orders of magnitude from month to month, and between years. This highlights the difficulty of monitoring and predicting the potential bycatch that might occur in these pens without active, independent monitoring.

In addition to harvest operations, additional issues related to bycatch that need to be addressed include:

- Indirect predation by net pen steelhead on ESA-listed juvenile salmonids
- Net pens which rear high-densities of farmed fish act as an unnatural false attraction for both wild fish and marine mammals. Disposing of bycatch during harvest further exacerbates this dynamic that may result in unnatural levels of predation of ESA-listed fish populations by marine mammals attracted to the pens and bycatch. This false attraction also increases the likelihood that marine mammals and fish will be exposed to harmful pathogens amplified and spread by net pens; that wild fish and marine mammals will ingest feed or farmed fish treated with chemicals, medicines, or pharmaceuticals; and that marine mammals (especially ESA-listed species) may experience boat strikes, harassment, or entanglement.
- The harvester crew and/or net pen operator must obtain a fishing license or permit that would allow them to harvest native fish as described above.

## Change in Species

Without an EIS, Ecology’s analysis that transitioning from Atlantic salmon to steelhead “is not likely to change the effect to water quality” is only an assumption. This was a major concern raised by DNR (another jurisdictional agency to the SEPA review) in their comments to WDFW which concluded the SEPA materials “did not adequately address how the proposal from Cooke might impact the already declining population of Puget Sound steelhead.” This is a major argument in the pending lawsuit over the underlying SEPA review.

The escape of partially-sterile (triploid) steelhead from any of the Puget Sound aquaculture facilities, whether from small scale leakage or catastrophic facility failure, constitute pollutants

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under the CWA and may pose significant environmental impacts to native salmonids rearing in nearshore marine habitats and rivers due to competition for food and foraging space, spread of disease-causing pathogens, and genetic introgression.

Competition for resources will be particularly true in the case of triploid individuals because, as noted in Cooke's materials, they will have appetites that are likely to be considerably greater than wild juvenile salmon and steelhead due to the faster inherent growth rate of these triploid fish. This means escapees may outcompete wild steelhead, or indeed predate upon them.

Our attached SEPA comments provide a detailed analysis of the risks to the genetic integrity of threatened Puget Sound steelhead stocks in the event of an escape. While the limited data from Troutlodge indicates an average triploidy failure rate of 0.17%, the true rate may be substantially different, and higher. Furthermore, a random sample of several hundred thousand fish may contain a larger proportion of fertile females by random chance. In the event of an escape on the scale of Cypress Island, that could mean thousands of fertile females entering Puget Sound, potentially diluting the genetics of threatened wild populations, and competing with wild females for redds.

Our attached SEPA comments detail methods of assessing those risks that allows an assessment of not only median-case scenarios, but the worst-case scenarios demanded by WAC 197-11-080.

An additional related concern is the absence of specific details regarding how the replacement steelhead stock is to be marked so as to distinguish an aquaculture-raised steelhead from conventional hatchery-raised steelhead and from wild, natural-origin, steelhead. It is critical that aquaculture-raised steelhead be provided with an externally visible mark that is distinct from the adipose clip used to identify conventional hatchery-reared steelhead. This is necessary in order that recovered escaped aquaculture-raised fish can be distinguished from hatchery and wild steelhead, in order to assure that such fish are removed from public waters and that native steelhead (with an intact adipose fin) not be killed due to suspicion that such a fish captured following an escape is one of the escapees.

The prior permitting for these pens and their operations all addressed risks associated with a non-native species. In dealing with partially-sterile (triploid), domesticated *O. mykiss* and Puget Sound's federally-listed steelhead population, different risks apply, and standards laid out in the 1990 EIS have not been met for these purposes.

In particular, "a minimum distance of separation between farms and river mouths" has never been considered and adopted in state policy, as section 5.7.2.2 of the 1990 EIS would require for aquaculture involving native fish (and as is required in other nations). Since escapes, and their risks to threatened conspecifics, constitute pollution and are within the scope of Ecology's review, this guidance and an analysis of the proximity of pens to steelhead spawning rivers should be included in Ecology's review of these modified NPDES permits. In addition, the assessment of risks from pollution (including toxic pollutants, i.e. viruses) should account for the migration corridors in areas like Rich Passage, which may concentrate wild salmon near the pens.

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Furthermore, the behavioral response of wild steelhead to a large aggregation of conspecifics may be different than it was to Atlantic salmon. If wild schools are attracted to the captive domesticated steelhead in pens as are other native fish, the pollution from the pens may do greater harm to recreationally- and commercially-important hatchery-reared steelhead and to threatened wild Puget Sound steelhead.

## **Eliminate negative impacts to water quality**

Several significant environmental impacts previously raised in the attached 2019 and June 2020 NPDES permit comments by Our Sound, Our Salmon are not addressed by the modified NPDES permits. Decades of experience show real effects on water, which the modified NPDES permits do not eliminate. We encourage Ecology to reconsider the following concerns:

- Daily untreated Phosphorous (P) and Nitrogen (N) emissions discharged into Puget Sound by open water net pens far exceed what is legal for any other industry in Washington. In 2017, WFC estimated the total discharge of N and P waste from Atlantic salmon net pen aquaculture farms when each was at estimated maximum production based on Cooke's NPDES reports to Ecology. These numbers were updated in 2020 based on the most recent reports as P and N pollution is likely to be similar for steelhead (Attachment 4). For the Bainbridge Island and Hope Island net pens currently under consideration in these modified NPDES permits, these permits allow an estimated 2,334 lbs of untreated N and 492 lbs of untreated P to be discharged into Puget Sound every day. If Cooke Aquaculture is successful in obtaining valid leases for Port Angeles and Cypress Island as well, the NPDES permits will allow an estimated 4,326 lbs of untreated N to be discharged daily, roughly equivalent to the N treated by the cities of Bellingham, Everett, Port Angeles, and Tacoma combined. For P, the pens will discharge 924 lbs daily roughly equivalent to the P discharged and treated by the city of Tacoma every day.
- Open-air salmonid net pens chronically discharge particles of decaying fish flesh that are often consumed by native fish, birds, and other wildlife. These particles may be contaminated with pathogens, parasites, pharmaceuticals or chemicals that may be ingested by native fishes, including conspecific steelhead and other salmonids. Studies have shown that these particles are potential vectors for pathogens. While Cooke now is required to recover dead fish and transport them upland for disposal, there is currently no mandate that those mortalities be submitted to the state for testing before disposal.
- There is no mechanism to prevent antibiotics, pharmaceuticals, and other medicines applied in feed from being consumed by native fish in the immediate vicinity of the treated pens (including fish that may enter the pens attracted by the presence of feed and fish odors). In addition to the potential adverse impacts of medicines on wild fish, the public may unknowingly consume chemicals that are not safe for consumption if native fish that have consumed treated feed are caught in recreational or commercial fisheries. For example, the U.S. Food and Drug Administration requires a 28-day waiting period before farmed fish treated for "yellow mouth" are approved and considered safe for

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human consumption. This risk to the public, wild fish, and other wildlife has not been addressed in the modified NPDES permits.

- In the SEPA checklist submitted by Cooke, they refer to the use of unspecified probiotic supplements. These unspecified introduced microbes are likely to colonize the microbiome of native fish and the environment near net pens. Given the growing scientific appreciation of the role of the microbiome in health and development of fish and other animals and plants, these supplements should be detailed, and a plan for monitoring surrounding areas and fish populations for colonization or excess growth of these bacteria should be required. This monitoring should also test for growth of antibiotic resistance in nearby areas, and in wildlife found in and near the pens.
- Ecology should not limit the scope of monitoring impacts of discharged pollutants to the area directly below and surrounding the net pens as this is not consistent with tidal physics. These net pens are all located in high-energy areas and therefore to adequately determine the scale and scope of the ecosystem impacted by pollutants, Ecology must consider how pollutants of varying size and buoyancy travel under different tidal energies. The Salish Sea Model (<https://www.pnnl.gov/projects/salish-sea-model>) was developed by the Pacific Northwest National Laboratory in collaboration with scientists within Ecology to simulate hydrodynamic and water quality processes. This model can be used to effectively assess how discharged pollutants flow and are distributed through Puget Sound. This is critical to effectively assessing how pollutants discharged from net pens affect sensitive habitats and areas designated as critical habitat for Southern Resident killer whales, salmon, and other threatened and endangered species. These assessments need to also include disease-causing agents/ toxic pollutants when known outbreaks occur.

## Conclusion

It is obvious that the current NPES permit process must be delayed until the Court issues a ruling in the lawsuit challenging the underlying SEPA review as an EIS may be required and would need to be considered in order to comply with SEPA. Similarly, Ecology should delay the permitting process until federal ESA consultation of the impacts Puget Sound net pens pose to ESA-listed species is complete and Ecology can incorporate any reasonable and prudent alternative measures that result from the consultation.

The modified permits fail to account for changes in risk assessment imposed by HB2957 and to “eliminate commercial marine net pen escapement” and “eliminate negative impacts to water quality and native fish, shellfish, and wildlife” as intended by the Washington legislature in passing this law. In adhering to this standard, we continue to encourage Ecology to treat Cooke’s applications as a new project, not an extension of an existing practice.

Lastly, the faith-based and retroactive regulatory framework currently used to enforce the NPDES permits cannot be effectively enforced to prevent catastrophic events before they occur and must be addressed before the permits are granted. Ecology must have the authority and



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capacity to conduct regular and unannounced site visits and to conduct any biological sampling and testing deemed advisable to assure the public that no adverse impacts are occurring.

## Attachments

*Submitted as separate files with this document via Ecology online comment portal (<http://wq.ecology.commentinput.com/?id=HEdBM>)*

- Attachment 1:** Comments on Cooke Aquaculture's NPDES Application to rear *Oncorhynchus mykiss* in Puget Sound open water net pens, Submitted by Our Sound, Our Salmon June 8, 2020 with original attachments.
- Attachment 2:** Comments on Washington Department of Fish and Wildlife State Environmental Protection Act Review of Cooke Aquaculture Proposal to Commercially Propagate and Harvest *Oncorhynchus mykiss* in Puget Sound net pens: SEPA #19056, submitted by Wild Fish Conservancy November 11, 2019
- Attachment 3:** May 29, 2020 Letter from the U.S. Environmental Protection Agency to the National Marine Fisheries Service which includes the Addendum to the Updated Biological Evaluation (December 13, 2010), A Clean Water Act Action on Washington's Marine Finfish Rearing Facility Provisions Contained in Sediment Management Standards at Washington Administrative Code 173-204-412
- Attachment 4:** Estimated municipal equivalent daily Nitrogen and Phosphorus discharge from all 7 Puget Sound salmon farms at maximum production, Wild Fish Conservancy, 2020