Our Sound, Our Salmon

The attached comments and documents were joined by 35 organizations and businesses, raising important material that must be addressed in the NPDES permit review.

OUR SOUND, OUR SALMON

Comments on Cooke Aquaculture's NPDES Application to rear *Oncorhynchus mykiss* in Puget Sound open water net pens

Our Sound, Our Salmon
June 8, 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

These comments are joined by the following 35 organizations and businesses, and 10 individuals:

Organizations and Businesses

Bainbridge Beach Naturalists, Bainbridge Island Watershed Council Coastal Watershed Institute, The Conservation Angler, Duke's Seafood, EGM Real Estate, Environment Washington, Exploration Charters, Fly Fishers International, Friends of the Earth, Friends of the San Juans, Global Alliance Against Industrial Aquaculture, Legal Rights for the Salish Sea, Living Oceans Society, Lummi Island Wild, Native Fish Society, North Cascades Audubon Society, North Sound Trout Unlimited, Northwest Watershed Institute, Olympic Environmental Council, Olympic Forest Coalition, Orca Conservancy, Paul J Allen MD PLLC, Project SeaWolf Coastal Protection, Protect the Peninsula's Future, Salish Center for Sustainable Fishing Methods, San Juan Excursions, Sea Shepherd, Sea Shepherd Seattle, Spirit of Orca, Trust Olympus Pest Control and Prevention, Watershed Watch Salmon Society, Whale and Dolphin Conservation, Wild Fish Conservancy, Whidbey Environmental Action Network

Independent

Justin Boucher, Kristine Collins, Rick Doden, Michelle Meyer, Amy Nesler, Mary Rawlins, Thierry Rautureau (The Chef in the Hat), Denny Redman (Writer), Kerrie Tuck, William Williams

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Wild Fish Conservancy

Friends of the Earth

Friends of the San Juans

ORCA CONSERVANCY EST. 1996 orcaconservancy.org

North Cascades Audubon Society

Bainbridge Beach Naturalists

Watershed Watch Salmon Society

Whale and Dolphin Conservation WDC

Lummi Island Wild

Olympic Forest Coalition

Native Fish Society

Living Oceans

Olympic Environmental Council

Environment Washington

Bainbridge Island Watershed Council

Protect the Peninsula's Future

Salish Center For Sustainable Fishing Methods

Whidbey Environmental Action

Coastal Watershed Institute Port Angeles, Washington

Legal Rights Salish Sea

The Conservation Angler

Dukes Seafood

EGM Real Estate, LLC

Northwest Watershed Institute

Sea Shepherd Seattle

global alliance against industrial aquaculture — Salmon Farming and Shrimp Farming Kills

FFI

Seawolf Coastal Protection

Trust Olympus Pest Control & Prevention

Spirit of Orca Whale & Wildlife Tours

OUR SOUND, OUR SALMON

Ms Niewolny:

Wild Fish Conservancy (WFC) and the coalition of groups operating under the banner of Our Sound, Our Salmon (OSOS) have long raised serious concerns about the risks posed by open water net pen aquaculture in Puget Sound. The catastrophic collapse of Cooke Aquaculture's Cypress Island pen in 2017 bore out many of those fears. In response, the state legislature passed legislation which phases out Atlantic salmon aquaculture by 2020. That legislation also charges the Department of Ecology and other agencies regulating these pens: "to eliminate commercial marine net pen escapement and to eliminate negative impacts to water quality and native fish, shellfish, and wildlife" and to implement new rules and standards for achieving that goal. The legislature passed the legislation with language emphasizing that "evidence [has] emerged that marine finfish aquaculture in general may pose unacceptable risks not only to Washington's native salmonid populations but also to the broader health of Washington's marine environment." While that section of the law was vetoed by the Governor, it is clear that the people's representatives have grave concerns about the safety of marine finfish aquaculture, and set a clear expectation that ongoing operation of these pens should be subject to heightened scrutiny.

The passage of HB 2957 created a new and stricter regulatory regime for marine net pen aquaculture. In reviewing Cooke's submissions and other materials submitted through this public process, we urge that the standard of review be specifically on whether the policies in place achieve the state's goal to "eliminate…escapement and to eliminate negative impacts to water quality and native fish, shellfish, and wildlife."

In light of those new legal mandates, and the different risk profile presented by rearing a domesticated and biologically-altered form of a native species as opposed to a non-native species, this permit application should be considered not as an extension of past practices, but as if these pens were starting anew. HB 2957's new standards require re-examining past decisions, and holding Cooke Aquaculture to that higher standard of eliminating risks.

Ensuring compliance is crucial

In the wake of the Cypress Island collapse, Wild Fish Conservancy sued under the Clean Water Act (CWA). That suit resulted in rulings that Cooke Aquaculture had violated the terms of its permits, including by failing to conduct required inspections of net pen moorings and anchors, to accurately monitor and report the number of fish escaping from pens, to develop operational plans that include necessary procedures for inspecting cages, storing chemicals, disposing of harvest blood, and to track the number of fish in its cages and lost to predation. Cooke's history of CWA violations is important to consider in this process, if nothing else to ensure that the permits are drafted to ensure that violations are detected before catastrophe ensues.

Incidents like the partial sinking of the Orchard Rocks pen in October, 2019 demonstrate that the risks of additional escapes are very real, given the state of the existing pen structures. The response to that incident was conducted by the Department of Ecology, Department of Natural

Resources (DNR), and Department of Fish and Wildlife (WDFW), and the records from that incident and state agencies' documentation of Cooke's inadequate emergency response should be included in this record to ensure that emergency plans incorporate lessons learned, and acknowledge the degraded state of the surviving pens as identified by state inspectors and Cooke's own contractors.

New concerns from the change in species

The change in species poses new and different risks, in addition to the harms open water net pen aquaculture has caused for decades. Some policies which may have been permitted for Atlantic salmon under the pre-2018 status quo, pose additional risks with the proposal to introduce domesticated, biologically-altered, steelhead/rainbow trout. The differences in this circumstance were considered as far back as 1990, when the last comprehensive Environmental Impact Statement (EIS) was drafted. The prior permitting for these pens and their operations all addressed risks associated with a non-native species. In dealing with biologically-altered, 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 NPDES permits. In addition, the assessment of risks from pollution (including diseases) should account for the migration corridors in areas like Rich Passage, which may concentrate wild salmon near the pens.

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, the pollution from the pens may do greater harm to recreationally- and commercially-important hatchery-reared steelhead and to threatened wild Puget Sound steelhead.

New material to review

During the emergency response to the Orchard Rocks partial sinking, Cooke told DNR that they planned to replace some existing net pens in Puget Sound. If indeed that plan is under way, the NPDES review should include engineering data on the new pen structures in order to assess the adequacy of those pens for Puget Sound's dynamic conditions, and the escape risk and other risks the new pens might pose to Puget Sound.

The Mitigated Determination of Nonsignificance (MDNS) issued by WDFW in January 2020, requires Cooke to prepare and submit a plan for marking steelhead in ways that will distinguish

fish from their pens from hatchery-raised fish swimming freely in Puget Sound. That plan is not part of this record, and review of the NPDES permit application should await that filing.

The MDNS also requires Cooke to submit a plan for a “no-recovery response” to escapes. That plan is not part of the escape plan submitted in Cooke’s application, and it is impossible to assess the adequacy of Cooke’s pollution prevention plan until that plan is included in the application.

The State Environmental Policy Act (SEPA) review led by WDFW which produced the MDNS is currently being appealed. That challenge is likely to generate new information pertinent to the NPDES review, and it would be appropriate to delay drafting any NPDES permit until the evidentiary record and ruling can be incorporated into this review.

Eliminate negative impacts to water quality

Decades of experience shows real effects on water quality in a plume around the net pens, which the terms of Cooke’s current permit application does not eliminate. This NPDES review should re-examine existing data on effluents from industrial products, medicines, feed, fish waste, and dead and rotting fish to assess whether the current plans eliminate all of those risks. It should also examine new data on antibiotic resistance in protected marine mammals (research discussed in this recent report from High Country News). These risks were discussed in the SEPA comments submitted by WFC and the Our Sound, Our Salmon coalition in 2019, and comments to the previous Atlantic salmon NPDES review. We have attached both documents for reference, and summarize the major concerns below. The review should also draw on the Pacific Northwest National Laboratory’s Salish Sea Model (https://salish-sea.pnnl.gov/) to assess how effluents will flow through Puget Sound and affect sensitive habitats and areas designated as critical habitat for Southern Resident killer whales, salmon, and other threatened and endangered species.

Food effluent

Open water finfish net pens routinely disperse large volumes of feed into public waters within the boundaries of the net pens. Some portion of the feed may not be consumed by penned fish, and thus makes its way into, and has an impact upon, the surrounding marine environment. The high-energy tidal zones in which net pens are located may drive broad dispersal of unconsumed feed and other dietary supplements, including medicines. This dispersal of feed into public waters represents a continuous and constant act of chumming, which attracts native fish species and other wildlife. Divers near net pens have observed large schools of fish swimming in and out of the pens, and reports from British Columbia on bycatch and incidental take of wild species during harvest operations indicate that many native species enter the pens, likely because of the food attraction.

Physically small fish species, such as baitfish and out-migrating 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 food is also likely to draw native species (including ESA-listed Chinook and steelhead) from their protective shallow nearshore habitats to net pens.

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, 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 what species will be attracted to the pens as a food source, and how pollutants in and near the pens will affect Puget Sound's ecology.

Fish waste

Fish waste, excess food, dead fish, and tissue sloughed off of live fish, all flow from net pens into surrounding waters. This nutrient imbalance in the vicinity of pens can be harmful to some wild species, and can cause unhealthy growth of other species, including algal blooms.

On November 15, marine aquaculture net pens in Clayoquot Bay began seeing die-offs due to a bloom of diatomaceous algae (https://thetyee.ca/News/2019/11/20/Algal-Blooms-Tofino/). The concentration of fecal material, excess food, and fish flesh near pens may exacerbate these blooms, and the resulting fish deaths then produce additional pollution as they cannot be extracted from the nets quickly enough. Observers near the recent die-offs report that the waters near the pens turned "a dark brown muddy river-like colour," due to the rotting flesh.

These die-offs are likely to be more frequent in the future, since these algal blooms "have expanded their range and frequency as climate change has warmed, acidified and robbed coastal waters of normal oxygen levels." The inability to quickly empty the pens in the event of massive deaths or a disease outbreak poses significant risks to Puget Sound at large. One such risk is that the weight of the dead fish itself can add stresses to the pens' structure, making a collapse more likely during those emergency operations, and when the contents of the pens pose the greatest risk to the environment.

WFC modeled the additional phosphorus and nitrogen emissions resulting from net pens (https://wildfishconservancy.org/estimation-of-total-phosphorus-and-nitrogen-waste-during-a-20-month-grow-out-period-for-puget-sound-atlantic-salmon-net-pen-aquaculture-facilities-1). The additional pollution is more than the permitted emissions from large communities, and without any of the waste treatment requirements placed on human populations or land-based feedlots.

Open-air salmonid 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 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.

Antibiotic/medical effluent

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. This risk to the public and to wild fish must be addressed in the NPDES review.

The SEPA checklist submitted by Cooke Aquaculture and included in this record refers 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.

Eliminate negative impacts to native fish, shellfish, and wildlife

Concentrated populations raised in what are effectively aquatic animal feedlots face greater risk of disease, parasitic, and viral amplification than free-ranging, especially wild, populations. When viral, bacterial, fungal, or parasitic diseases break out in net pens, the disease-causing

organisms are rapidly amplified in number and leaked to the surrounding aquatic environment in large numbers. Because their conspecifics (and other salmonids of concern, including coho salmon, ESA-listed Chinook salmon and bull trout and as required by WAC 197-11-080) will be swimming in close proximity to the pens, there is likely to be a spread of disease to endangered wild steelhead and other salmonids. In 2017, a British Columbia study documented a strong correlational connection between disease prevalence in net pens and disease transfer to wild fish populations (Morton et al., 2017 DOI: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 eLife 2019;8:e47615).

Such pathogens fall within the definition of pollutants, and the NPDES permit review should ensure that Cooke's plans will eliminate the risk of these pollutants harming the integrity of the Sound ecosystem and the biological integrity of its wild species. Given the frequent presence of marine mammals near the pens, including seals and sea lions aggregating near 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.

Eliminate commercial marine net pen escapement

Our SEPA comments (attached) 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. 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 method 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.

The escape of rainbow/steelhead from any of the Puget Sound aquaculture facilities, whether from small scale leakage or catastrophic facility failure, will pose risks to native salmonids rearing in nearshore marine habitats and rivers due to competition for food and foraging space. This 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.

Since escapees would constitute pollutants under the Clean Water Act, escape prevention and the adequacy of Cooke's escape prevention and escape response plans must be carefully considered in this permit process. The SEPA MDNS requires Cooke to develop a "no-recovery" option to be added to their escape response plan, which is not included in these NPDES

application materials. The NPDES review must be based on their full escape plan, not this incomplete record. The MDNS also required Cooke to develop a plan for marking their domesticated stock to distinguish them from free-swimming wild and hatchery steelhead. That marking plan is not included in these NPDES materials, but is an important aspect of escape recovery.

Conclusion

Given the new legal standard established by HB 2957, the pending legal challenge to the MDNS issued in January 2020, the large amount of new information that Cooke's application adds to the public record (including fish mortality data, a new fish escape prevention plan which may be further amended to add a "no recovery" option, and a new escape reporting and response plan which may be similarly amended), and the other new information described above that has come out recently, is expected in the near future, or that ought to be added to the record, and the substantial concerns that arise from when raising a native species as opposed to a non-native species, it would be appropriate to initiate SEPA review of this NPDES application, and potentially draft a new EIS after making a determination of significance.

Ecology's NPDES permit review should not begin until there has been thorough consultation with local, state, federal, and tribal governments. Many tribal nations submitted comments to the SEPA review requesting a full EIS, and initiated government-to-government consultations to express their grave concerns about the harm these pens do to the Sound. In addition, many counties and municipalities have established new rules since the net pens were installed, which would prohibit the construction of new net pens in their waters. While the existing pens are grandfathered in, these communities and nations should have a full and open opportunity to air their concerns and ensure that the continued operation of net pens in Puget Sound honors the concerns and needs of their neighbors.

OUR SOUND, OUR SALMON

Attachments:

Our Sound, Our Salmon, 2/25/19. *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, 11/22/19. *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*

Order on Plaintiff's Motions for Summary Judgement, April 17, 2019. *Wild Fish Conservancy v. Cooke Aquaculture*. 2:17-cv-01708-JCC

Order on Plaintiff's and Defense's Motions for Summary Judgement, November 25, 2019. *Wild Fish Conservancy v. Cooke Aquaculture*. 2:17-cv-01708-JCC

OUR SOUND, OUR SALMON

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

Our Sound, Our Salmon

Submitted 11/22/19

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

Signed by:

Wild Fish Conservancy, Center for Biological Diversity, Surfrider Foundation, Friends of the Earth, The Conservation Angler, Friends of the San Juans, Orca Conservancy, Environment Washington, Native Fish Society, Food & Water Watch, Watershed Watch Salmon Society, Wild Orca, North Cascades Audubon Society, Whale and Dolphin Conservation, Seawolf Coastal Portection, Whale Scout, Recirculating Farms Coalition, Olympic Environmental Council, Duke's Chowder and Seafood, Protect the Peninsula's Future, Moldy Chum, Reel Pure Radio, San Juan Excursions, Friends of Miller Peninsula State Park, Far Away Fly Fishing, Green Justice, Washington Sierra Club Chapter Water and Salmon Committee

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Wild Fish Conservancy NORTHWEST

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WILD ORCA

North Cascades Audubon Society

WDC WHALE AND DOLPHIN CONSERVATION

SEAWOLF
COASTAL PROTECTION

WHALE SCOUT

RECIRCULATING FARMS COALITION

Olympic ENVIRONMENTAL Council

SEAFOOD dukes

PROTECT THE PENINSULA'S FUTURE

MoldyChum

REEL PURE RADIO

San Juan EXCURSIONS

Friends of Miller Peninsula State Park

FARAWAY Fly Fishing

GREEN JUSTICE LEGAL

Overarching Comments:

In addition to and as explained by the detailed technical comments below, the groups listed above—under the banner of the Our Sound, Our Salmon campaign—provides these overarching comments to highlight that the State's mDNS and SEPA process is legally flawed in many respects, including but not limited the following:

- The State improperly relinquished its SEPA duties by delegating its primary responsibilities for evaluating the environmental impacts of Cooke's proposed net pens farms to Cooke. Cooke is clearly biased in favor of allowing its proposal, and all analysis and documents that Cooke or its consultants prepared are therefore unreliable.
- The net pens will have significant adverse impacts on the environment, and the State failed to prepare an environmental impact statement to fully consider and evaluate reasonably foreseeable consequences from these impacts. For example, and as detailed in these technical comments, escaped steelhead from the net pens will adversely affect wild salmonids by competing for food and forage space with native salmonids and by amplifying and transmitting diseases and parasites. The State did not fully consider this, instead relying on an outdated EIS and a paragraph from Cooke that incorrectly minimizes impacts on wild salmonids without citing any support for its assertion.
- A new EIS is required because there are significant adverse effects that are not addressed in the prior EIS and because there is substantial new information and changed circumstances. For example, the outdated EIS relied upon by the State addressed rearing of a different species—Atlantic salmon—and not the steelhead currently proposed for Puget Sound net pens and was prepared before the listing of various species in Puget Sound under the Endangered Species Act, including Puget Sound steelhead, Puget Sound Chinook, and the Southern Resident Killer Whale. Further, there is an abundance of new science informing the risks net pens pose to

the environment since the 1990 EIS. The cursory additional information and analysis is insufficient to update an entirely stale EIS. These comments detail some of the many ways the EIS and checklist fail to consider best available science that has come out in the last 30 years.

- The SEPA documents are neither complete nor accurate, failing to disclose many risks and harms associated with the net pens. Relatedly, the State failed to gather necessary additional information and failed to consider reasonably foreseeable consequences. For example, the State has not supplemented the decision documents with information from the recent Orchard Rocks incident. Regardless of whether the State considers the incident, the State has not provided the public with an evaluation of this incident and an opportunity to comment on the reasonably foreseeable risks posed by pen sinking.
- The State failed to disclose and consider all direct, indirect, and cumulative impacts of the net pens, and accordingly failed to provide an accurate and complete analysis.
- The State narrowed the project scope, improperly limiting its effects analysis and failing to consider many impacts posed by net pen farming in the State of Washington.
- The State failed to articulate and analyze updated objectives or purposes, making it impossible to consider and evaluate reasonable alternatives. The 1990 EIS articulates an objection/purpose of assisting in resolution of conflict by evaluating the environmental impacts of fish farms on the biological and build (human) impacts. This objective/purpose is clearly outdated and based on the political climate at the time. The update in Attachment D does not provide any updated objectives/purposes, but simply states a "proposed action" of permitting steelhead/rainbow farming. This failure to articulate objectives or a purpose makes it impossible for the public to understand what reasonable alternatives are available that the State failed to consider.

- The State failed to consider and evaluate reasonable, safer alternatives to raising the rainbow trout/steelhead at existing marine net pen sites in Puget Sound. For example, the State should have considered an alternative requiring all salmon farms to be self-contained land-based facilities. As another example, the State should have considered an alternative regulation that restricts the number of steelhead/rainbow that may be farmed in the pens. These alternatives would significantly lessen the risks and impacts of salmon farming on the environment while still allowing Cooke to run a profitable salmon farming business.
- The no action alternative in the 1990 EIS is outdated and does not make sense because the "existing regulations and guidelines," as well as the laws of the State of Washington related to net pens, that would form the basis for a no action alternative have changed in the last 30 years.
- The State must prepare an EIS because of the significant negative environmental and health impacts from the net pens, examples of which are detailed in these comments.
- The mitigation measures included in the decision documents are unenforceable; fail to address all significant adverse impacts on the environment; will not reduce impacts to a nonsignificant level; and otherwise do not comply with SEPA.
- The regulatory agencies lack sufficient regulatory controls to allow the proposed action to go forward. As demonstrated by disease outbreaks—like the 2012 outbreak of IHNv and the PRV outbreaks—as well as equipment failure—like the 2019 Orchard Rocks incident and the collapse of Cypress Site 2 and its aftermath—the regulatory agencies are ill-equipped to mitigate any adverse impacts.

Under the State Environmental Protection Act (SEPA), this review requires a threshold determination of whether an action is likely to have a "significant adverse environmental impact." The State's current threshold determination of Mitigated Determination of Non-Significance (mDNS) is inadequate as an environmental review and fails to address many well-documented risks associated with farming salmonids in these exact pens. Industrial-scale,

open-water finfish aquaculture poses significant environmental risks, and the transition from Atlantic salmon aquaculture to rainbow/steelhead trout aquaculture adds significant risks that cannot be adequately mitigated. The State has violated SEPA by not preparing a new Environmental Impact Statement (EIS). Below, we detail some but not all of the significant environmental impacts that compel a determination that this proposal poses significant adverse environmental impacts, and reasons why the mitigations proposed are not reasonably certain to address those risks. In evaluating the proposed actions, the State failed to properly consider all available alternatives, or the cumulative impacts of the many risks posed by this proposed action.

The State should withdraw the Mitigated Determination of Non-Significance (mDNS), issue a Determination of Significance, and draft an EIS to assess the full impacts of this transition. Furthermore, that EIS should incorporate into its no-action alternative the cessation of operation of the pens (and cessation of any environmental risk) after the legislative non-native aquaculture phaseout takes effect in 2022.

The public comment period was flawed

The initial 21-day comment period was too short to allow adequate public comment. That period was first extended by 10 days, and again by 21 days. These extensions were announced near the end of each comment period, meaning that commenters could not budget their time to conduct the depth of analysis and consideration that might have been possible had the comment period been announced at full length to begin with.

When first announced, the comment period ended before the deadline for a legislatively-mandated report from state agencies to the legislature regarding best practices on aquaculture licensing and practices. That report was mandated by HB 2957, the law which also phased out Atlantic salmon aquaculture and mandated stricter regulations of marine net pen aquaculture in general, and was supposed to be filed on November 1. The first extension of this comment period ended on that same day. Unfortunately, that report has still not been filed as we

complete these comments, meaning the public has not been able to draw on the guidance of State agencies on how "to eliminate commercial marine net pen escapement and to eliminate negative impacts to water quality and native fish, shellfish, and wildlife." Proceeding with review of this proposal before completing the mandated report to the legislature puts the cart before the horse, and makes it likely that the clear will of the legislature and voters will not be reflected in the State's response to Cooke's request.

Even with the extensions the State has granted, there is a great deal for the public to evaluate. The filing covers over 400 pages, including a lengthy bibliography that requires review and in some cases rebuttal, as well has hundreds of references within the text to review. In addition, it references and discusses material developed by two sources who are expert witnesses for Cooke Aquaculture currently preparing to testify in ongoing litigation regarding these net pens. Understanding their statements here requires consideration of expert testimony rebutting their claims from that ongoing litigation. Furthermore, the 1990 EIS (Environmental Impact Statement) on which the State is relying is woefully outdated, and addressing the environmental effects of this policy requires the public to integrate decades of new information regarding Puget Sound, wild salmonids and other native fish in the Sound, its endangered marine mammals, the physics of tides and currents and tsunamis in the Sound, and the effects of net pens and industrial finfish aquaculture on the Sound.

The submission includes a 76-page document authored by Cooke Aquaculture staff and contractors, which purports to serve as a supplement to the 1990 Programmatic EIS. This self-interested document cannot stand on its own as a supplement to the state's EIS, and the document largely omits discussion of the specific environmental impacts of the net pens on the threatened and endangered species under discussion, including effects on the conspecific Puget Sound steelhead which are listed as threatened under the Endangered Species Act.

That there is so much additional information accumulated in those intervening decades—including multiple new federal and state listings of endangered and threatened species, newly-

designated critical habitat, and substantial new evidence of the effects and risks posed by open-water salmonid aquaculture in Puget Sound—is a strong argument of the need for the appropriate state agencies to conduct a full EIS. Washington Department of Fish and Wildlife (WDFW) is the appropriate agency that should write such a supplement, and in view of Cooke's active defense in litigation over its ESA and CWA violations and the considerable controversy surrounding Cooke Aquaculture in general, the proposal at issue in particular, and the widespread public consensus supporting the complete elimination of open net pen finfish aquaculture in Puget Sound, WDFW should provide a period for public comment on that EIS once it is issued. Allowing the petitioner to write its own supplement to the 1990 Programmatic EIS rather than having the state to perform its own due diligence and impartial analysis, and offer the public the statutory amount of time for comment, represents a dangerous end run around key environmental protections.

During the comment period, new information became available that the public deserves an opportunity to understand and comment on. This includes the partial sinking of a net pen at the Orchard Rocks site, and Cooke Aquaculture's efforts to intimidate Wild Fish Conservancy and prevent us, our members, and our partners in the Our Sound, Our Salmon coalition from exercising First Amendment rights to comment on this matter of public interest.

Orchard Rocks, 2019

In the 2019 Orchard Rocks incident, neighbors on shore observed the pen sinking as early as October 15, and reported their concerns to Cooke. Initially, Cooke staff told these neighbors that the apparent sinking was simply a result of normal tidal movement, and neighbors observed no repairs and it appeared that the pen was operating as if nothing was wrong. On October 18, the corner of the pen was fully under water, and emails obtained through public records requests indicate that the initial emergency alert came not from Cooke's personnel, but from state employees visiting family near the pens during their off-hours. In response to these calls from WDFW staff, coordinating with staff at the Department of Natural Resources, the US Coast Guard mounted an emergency response and created a security cordon, while

Cooke and DNR divers surveyed the damage and began repairs. According to a DNR spokesperson, fish could have escaped had the sinking pen been stocked at the time.

Emails obtained through public records requests show that state regulators did not feel Cooke followed the emergency protocols that they had agreed to through previous permits. It is unclear why it took several days to begin repairs, or whether Cooke staff intentionally misled concerned members of the public during that delay. It appears that the public and agency staff initiated the emergency response, not Cooke or its staff. The public and state agencies cannot adequately evaluate Cooke's emergency response—a central component of the risk mitigation proposed in the mDNS—without clarity on those matters, and a clearer understanding of Cooke's monitoring and preventative maintenance. In emails obtained through public records requests, state agencies appear to be planning an internal investigation of this incident, and our records request remains open. Estimated times to complete the records search extend beyond the end of this comment period. As we complete these comments, no results have been announced from the agencies' investigation of this incident.

Silencing public comment

On October 3, 2019, less than two full days after the public comment period began and the day after Wild Fish Conservancy issued a press release informing the press and public about this comment period, Cooke Aquaculture issued a "cease and desist" notice to WFC. This letter instructed WFC (a group that convened and coordinates the Our Sound, Our Salmon coalition) to "cease and desist" from expressing opinions about the risks posed by Cooke's net pens in Puget Sound, opinions derived in part from and citing an engineering report prepared and submitted as part of ongoing litigation. Cooke's letter warned "If these statements result in delay in issuance of those permits…Cooke will seek recovery of damages against WFC and [WFC executive director] Mr. Beardslee personally, in addition to injunctive relief."

Describing evidence and opinions derived from that evidence, especially as part of a petition to a government agency for redress of grievances, is the epitome of First Amendment-

protected free speech. The First Amendment protects the rights of citizens to make such fair comment on matters of public interest and public controversy. Washington State is one of the first states to legislatively shield reports like this from threats like Cooke's, declaring in 1989: "The legislature finds that the threat of a civil action for damages can act as a deterrent to citizens who wish to report information to federal, state, or local agencies" (RCW 4.24.500).

Cooke's letter to WFC, and any similar letters sent to members of Our Sound, Our Salmon and other individuals or advocacy groups, may have chilled or otherwise limited the public's participation in this important process. To correct any such chilling effect, the State should take measures to ensure that the public should feel no barrier to making their opinions heard. This might include asking the Attorney General to review existing laws and regulations to ensure that the State's anti-SLAPP laws are sufficient to protect the integrity of the public comment process, and to investigate this incident and its harm to the integrity of the State's public comment process.

Effects of escaped steelhead on wild steelhead genetics

The mitigated Determination of Non-Significance (mDNS) rightly treats the possibility of escape, both small- and large-scale, as a real and serious threat that must be addressed before planting fish in the net pens. Escaped fish pose a range of risks to endangered wild salmonids, and to the ecology of Puget Sound and its watersheds. The recovery efforts following the 2017 collapse demonstrated inadequacies of the existing escape plan even for non-native species (see comments below regarding inadequacies of the escape plan in the mDNS).

As DFW notes in the mDNS and their exchanges with Cooke in Attachment B, under this proposal, an escape on the scale of 2017 would have released a number of fertile female steelhead that "would have exceeded the number of wild steelhead returning to spawn in

many rivers in Puget Sound." DFW's exchange with Cooke states that the use of eggs treated to induce triploid sterility "would reduce, but not eliminate the risk."

We note in the section on failure of triploidy-induction below that monitoring of escapes of farmed Atlantic salmon in Norway (where the salmon are farmed in regions with wild conspecifics) demonstrates that escaped farmed salmonids do survive and feed and grow in marine feeding areas at rates similar to wild Atlantic salmon, and survive to mature and return to Norwegian rivers to interbreed in significant numbers with wild Atlantic salmon, with known adverse population level impacts to the affected wild populations (Disreud et al. 2019, Glover et al. 2019, Karlsson et al. 2016, Skilbrei et al. 2015). Importantly, Cooke's existing net pen sites are less than 20 kilometers (12.5 miles) by water from important wild steelhead rivers, including: the Elwha, Dungeness, Samish, Skagit, Stillaguamish, Cedar, and Green rivers (Map).

Table 1 shows the average wild steelhead population abundances in rivers nearest to the existing net pen facilities. State guidelines generally regard the risk of genetic harm as too high when wild fish are less than 95% of the spawners in a stream (5% hatchery-origin). Science would argue for a much lower threshold than 5% when the hatchery fish are as significantly domesticated as those proposed to be used by Cooke. Simulations of escape and survival scenarios (Appendix) indicate high likelihood that an escape on the scale of Cypress 2017 could cause the proportion of fertile farmed rainbow/steelhead trout spawning in streams to exceed 5%, or in some scenarios could exceed the entire wild population in streams.

A full understanding of the genetic risks posed would require more detailed information on the genotypes of the broodstock for the farmed salmon, and reportedly the egg supplier will not supply those data. While WDFW officials have offered assurances that they would require such information before authorizing a finfish transfer permit, the mDNS does not specify what standards would be applied in such a review. WAC 197-11-080 requires a worst case analysis and a discussion of the likelihood of that worst case. Rather a worst case scenario, the mDNS discussion adds a scenario that is less of a worst case than the proposal offered by Cooke.

In 2018, WDFW's fish health specialist—Dr. Ken Warheit—testified before the state legislature that raising native fish in these pens would actually represent "a greater risk to the state's native wild and hatchery salmonid populations, than is Atlantic salmon marine aquaculture." That risk should be considered through a full EIS.

Effects of escaped steelhead on wild salmonids' prey and habitat

The escape of rainbow/steelhead from any of the Puget Sound aquaculture facilities, whether from small scale leakage or catastrophic facility failure, will pose risks to native salmonids rearing in nearshore marine habitats and rivers due to competition for food and foraging space.

This will be particularly true in the case of triploid individuals because, as noted in the SEPA checklist, they will have appetites that are likely to be considerably greater than rearing wild juvenile salmon and steelhead due to the faster inherent growth rate of these triploid fish.

Diploid individuals that result from the failure of triploid induction will pose a significant risk of becoming sexually mature and interbreeding and/or competing with native rainbow and steelhead on the spawning grounds of native fish. The effects of recurrent, annual low level escapes on wild Atlantic salmon Norway is well documented, and similar impacts on native rainbow and steelhead in Puget Sound are to be expected (Diserud et al. 2019, Glover et al. 2019). Research in escapes of farmed Norwegian Atlantic salmon has also shown that escaped salmon survive to rear in the ocean for one or two years and return as mature fish to spawn in rivers of wild salmon (Olsen et al 2013, Karlson et al. 2016). Further, analysis of monitoring of escapes of farmed Atlantic salmon in Norway has shown that the actual number of escaped farmed salmon is two to four times greater than the officially reported annual number of escapes (Diserud et al. 2019, Skilbei et al. 2015). Of course, these potential risks will be greater the greater the magnitude of an escape and the greater the frequency of small-scale leakage

events. But, as is the case for wild Atlantic salmon in Norway and the north Atlantic in general, the risks posed by low level escapes can not be discounted.

A full EIS would allow for updated analyses that incorporate this and other new research on the effects of salmonid aquaculture, rather than relying on the prospective analysis conducted nearly 30 years ago, in 1990.

Effects of escaped steelhead on wild salmonids' predators

Various operations at the net pens can attract threatened, endangered, and otherwise protected predator species to the vicinity, creating risks that those birds and mammals would be harassed, experience ship strikes, or become dangerously accustomed to human proximity. The process of feeding farmed rainbow/steelhead trout attracts juvenile and adult wild fish (including ESA-listed salmonids), which in turn aggregates predator species. Predators will also be attracted by the outflow of shed skin and other parts from the penned rainbow/steelhead, and could be exposed to diseases and parasites through that proximity. The harvest process results in the release of bycatch fish, blood, and other fish parts from harvested fish, which has been shown to attract marine mammals to close proximity to the pens and boats (as in this video: https://drive.google.com/file/d/1TWXLMTcdG4s4QEvd3BM65-GpD1IEdaRJ/view?usp=sharing). A comprehensive EIS should examine the risks to these protected species from raising steelhead/rainbow trout in these net pens, and develop appropriate mitigation measures in consultation with federal, tribal, and international co-managers.

Farmed steelhead diseases could harm wild salmonids

Raising native salmonid species, and rainbow/steelhead trout in particular, in open Puget Sound net pens likely increases the risk of disease transmission from farmed to wild native salmonids and other fish species. Rainbow/steelhead trout are susceptible to native, endemic, Pacific salmon viruses, bacteria and parasites as well as non-native, introduced pathogens including piscene orthoreovirus (PRV). Rainbow/steelhead trout are vulnerable to a deadly form of infectious hematopoietic necrosis virus that can spread to and kill wild steelhead. While vaccination and state monitoring can limit this risk, it remains a greater risk than existed with Atlantic salmon.

The experience from a 2012 outbreak of the Atlantic salmon-specific strain of IHN indicates the danger of an outbreak in farmed rainbow/steelhead trout. While response plans call for rapid culling of infected fish to prevent the spread of disease, in 2012 the culling dragged on for months, with the Northwest Indian Fisheries Commission's fish health specialist noting the pen owner "reported increased mortalities starting in April. We now are at end of May and infected fish are still in those pens shedding virus." (https://nwifc.org/ihn-virus-detected-in-atlantic-salmon-farm-near-bainbridge-island/) The effect of such a delay if farmed rainbow/steelhead trout were infected with the strain shared with wild steelhead would be catastrophic.

Concentrated populations raised in what are effectively aquatic animal feedlots, face greater risk of disease, parasitic, and viral amplification than free-ranging, especially wild, populations. When viral, bacterial, fungal, or parasitic diseases break out in net pens, the disease-causing organisms are rapidly amplified in number and leaked to the surrounding aquatic environment in large numbers. Because their conspecifics (and other salmonids of concern, including coho salmon, ESA-listed Chinook salmon and bull trout and as required by WAC 197-11-080) will be swimming in close proximity to the pens, there is likely to be a spread of disease to endangered wild steelhead and other salmonids. In 2017, a B.C. study documented a strong

correlational connection between disease prevalence in net pens and disease transfer to wild fish populations (Morton et al., 2017). 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).

As with terrestrial feedlots, the diseases that spread in and from net pens are likely to include the spread of antibiotic- and fungicide-resistant pathogens to wild steelhead and hatchery steelhead, which poses additional risk to hatcheries and the humans and wild species that feed on steelhead and other Puget Sound salmonids (discussed further below, along with other risks of pollution from net pens). As the *Seattle Times* reported in October: "The risk is low, but consequences could be severe." (https://www.seattletimes.com/seattle-news/environment/cooke-aquaculture-seeks-to-farm-native-steelhead-in-puget-sound-after-2017-atlantic-salmon-escape/)

A comprehensive EIS should examine the risks to these protected species from raising biologically-engineered steelhead/rainbow trout in these net pens, and develop appropriate mitigation measures in consultation with federal, tribal, and international co-managers. That analysis should include an assessment of disease transmission to predator species, as well as the effects of these diseases on wild fish, and the potential for transmission of resistant strains to hatcheries.

Fertility of steelhead eggs treated for triploid sterility

The mDNS Summary (and Attachment A to Cooke's SEPA checklist) notes that the induction of triploidy in fertilized eggs at Cooke's hatcheries is imperfect. The likely adverse effects on native rainbow and steelhead from the escape of fertile aquaculture rainbow highlights the importance of providing firm risk-averse quantitative criteria and associated procedures regarding the estimation of the rate of triploid failure in each lot of eggs intended for

production of smolts for outplanting to Cooke's marine net pen facilities. WDFW's Summary notes some concerns with the procedure Cooke employs to estimate the triploidy failure rate ("failure rate", Cf. Attachment B, Cooke's response to WDFW question C2, pp. B-25,26). We believe WDFW's concerns are valid but that their recommendations do not go far enough to adequately reduce the risk posed by the presence of diploid (fertile) rainbow/steelhead in net pens in Puget Sound.

First, we note that the assertion by Cooke on page B-25 that the results of sampling to test triploid induction presented in Attachment A "are additive" is erroneous. The data in Appendix A show results from samples of 60 to 100 fertilized eggs from 36 separate lots sampled between 2013 and 2018. These samples can legitimately be pooled only if all 36 samples were obtained from a single lot (cohort) of eggs. This is clearly not the case. Further, Attachment A contains no data on the total number of eggs in each lot from which each sample was obtained. This missing information is critical to determining the adequacy of the sample sizes for estimating the triploid failure rate of each lot.

A Bayesian assessment of the data in Attachment A (modeling 36 separate draws of the same sizes observed, drawn from a hypergeometric distribution with unknown rate of diploidy) provides a 95% Highest Posterior Density Interval for the rate of diploidy of 0.06%-0.35%, and an 80% HPDI of 0.09%-0.28%. A worst case assessment as required by WAC 197-11-080 should consider not just the average triploidy rate in these samples, but the likely range of scenarios, and should attempt to cap the risk.

We recommend an alternative approach described in the following. The details in the approach we suggest also illustrate a robust general approach to risk assessment, particular in contexts of endangered species.

There are two basic issues in regard to the risk posed by the failure of triploid induction:

1. the failure rate itself (i.e., how many diploids will be reared and released into each net pen per batch of fertilized eggs in the hatchery that have been subjected to the triploid-induction treatment)?
2. The total number of diploids in a pen that would escape either via low level leakage or catastrophic failure.

The first (failure rate) in conjunction with the size (number) of fertile eggs subjected to the triploidy-induction procedure is relevant to determining the minimum sample size of eggs from each lot that should be tested for triploid failure in order to assure an appropriate low risk of diploids being released into the pens. The second determines the probability or likelihood that escapes – especially under conditions of a catastrophic failure – would survive in sufficient numbers to pose a significant threat to wild rainbow or steelhead. Here, we assume that 'significant threat' is one that would amount to a take of a threatened or endangered salmon, steelhead, and bull trout under the ESA. Determination of this number, therefore, requires an appropriate determination by National Marine Fisheries Service (NMFS) and issuance from NMFS of an appropriate Endangered Species Act (ESA) Incidental Take Statement (ITS).

Determining a risk-averse failure rate (issue 1) is dependent on determining the risk-averse probability that escapes under a catastrophic failure of a net pen would pose a 'significant threat' to ESA-listed salmonids from surviving escaped diploid rainbow/steelhead. This, in turn, requires, a determination of the maximum allowable number of diploids per total number of individuals out-planted to each farm facility. We follow WDFW in expressing this number per-million eggs tested.

On page 6 of the Summary, WDFW conducts a rough illustrative exercise estimating the numbers of diploids surviving to potentially interact with wild rainbow or steelhead on the spawning grounds. WDFW provides a lower estimate of 63 mature diploid fertile fish from a catastrophic escape from a pen initially planted with 1,000,000 smolts, given a variety of assumptions about intermediate rates leading from the initial escape to the presence of

surviving diploids on the spawning grounds. WDFW calculates that there would be a total of 63 such fertile escaped rainbow/steelhead, under a presumed "low survival" scenario and 316 under a "high survival" scenario.

In order to be very risk-averse (in keeping with the high priority placed on protecting ESA-listed salmon, steelhead, and bull trout), suppose we adopt a maximum of 50 fertile diploid escapees from a total net pen failure of 1,000,000 rainbow/steelhead. Under the assumptions of the WDFW "low survival" scenario 1,000,000 rainbow/steelhead net pen rearing primarily sterile triploid fish would have to consist of a maximum of 1560 fish in which triploid-induction had failed (Table 2). 1560 escaped diploids would result in no more than 50 surviving with the potential to reach the spawning grounds of wild steelhead or rainbow, given the assumptions used in WDFW's low-estimate scenario, which we adopt here for the sake of illustration.

In a total population of 1,000,000, 1560 diploids yields a point estimate of the triploid-induction failure rate of 0.00156. To be risk-averse with respect to ESA-listed fish, we argue that the number of fertilized eggs post-triploidy induction sampled and tested for triploid failure should be large enough to assure a probability of 0.95 (95%) or greater that the total number of diploids in the lot of 1,000,000 eggs is no greater than 1560. This requires a sample of approximately 3000 randomly selected eggs (per million eggs). The standard would require a random sample of at least 3000 be tested from each lot of one million fertilized eggs (or hatched fry) and result in no more than 1 triploid failure (figures 1 & 2). A lower-cost alternative protocol with the same effect would be to test consecutive lots of 100 eggs from each batch of 1,000,000 fertilized eggs, and to continue testing lots until either one or more diploids is detected from the current lot or until a total of 3500 eggs has been tested and no more than one diploid has been found. The occurrence of one (or more) diploid eggs in a total number of eggs fewer than 3500 would result in a distribution of the total number of diploids in the one million egg lot being tested in which the 95^{th} percentile of the cumulative probability distribution exceeds the critical value of 1560.

It is also of interest that if the total of 2950 samples tested for failure of triploid induction (diploidy) listed in Attachment A of Cooke's SEPA Checklist, of which 5 diploids were found, were obtained from a single lot of 1,000,000 fertile eggs, the mean number of diploid in the entire lot of 1,000,000 eggs would be more than 2000, the median number would be 1900, and there would be a probability of just over 5% that the true number was greater than 3500 (Figure 2). Each of these quantities is clearly greater than the hypothetical maximum of 1560 described above.

In summary, the risk standard should be stated as a high probability that the outcome of a specified quantitative sampling protocol not exceed a specified quantitative upper bound judged sufficient to assure that an adverse outcome of management concern will not occur. Here, the quantitative upper bound is the number of triploid failures per 3000 random samples tested (here 1), which corresponds to a corresponding high probability that no more than some total number of triploid failures (here 1560) occur per batch of million fertile eggs or fry sampled. The latter maximum number (1560) is in turn derived from an appropriate estimation of the distributions of the quantities (parameters) required to estimate (with appropriately high probability) the total number of fertile escaped diploid farmed rainbow/steelhead that would survive following a catastrophic net pen failure, where the total number of surviving fertile escaped diploids is itself determined on the basis a similar assessment of the risk posed to ESA-listed steelhead by the presence of escaped diploid farmed rainbow/steelhead on the spawning grounds of wild steelhead. The determination of such a risk standard requires that full probability distributions of the relevant quantities of interest be calculated (estimated) so that risk-averse probabilities of attainment of a risk-averse standard can be specified as a probability from the relevant tails of the distributions. Picking a point estimate, such as the mean of a sample, as in the WDFW summary (picking the mean triploidy-failure rate of 0.0017 (0.17%) from Cooke's sampling data (Attachment A to Cooke's SEPA checklist) is inappropriate and very likely to be insufficiently risk averse.

This analysis is necessarily limited given the short comment window. The State must develop and "document…its worst case analysis and the likelihood of occurrence" as required by WAC 197-11-080. A fuller analysis of the genetic risks posed by escaped non-triploid rainbow/steelhead, and measures that might mitigate those risks, would be possible with a longer comment period, and should properly be undertaken as part of a comprehensive EIS.

The proposed escape recovery plan is clearly insufficient

It appears that Cooke's recovery plans are no different from the ones employed to address the catastrophic 2017 net pen failure and escape at Cypress Island. In Appendix B, they state:

> Upon receiving authorization from WDFW, the company will commence recovery of escaped fish through one or more of the following actions: (1) use of company skiffs and seine nets; (2) contacting the Northwest Indians Fishery Commission and nearby tribal Natural Resource managers to help facilitate the recapture of escaped fish; (3) contacting and engaging the services of local commercial fishing boat operators to facilitate the recapture escaped fish.

This approach was inadequate in 2017, resulting in substantial unrecovered escapees. It is far less adequate for this proposal. Here, the escaped fish may school with threatened wild salmonids and conspecifics. While non-specialists might reasonably have been expected to make quick distinctions between a recovered Atlantic salmon and a wild salmonid, those distinctions will be much harder in this case. A captured steelhead might be a threatened wild steelhead that must be immediately released, or a hatchery-raised steelhead subject to catch limits, or a farm-raised steelhead that must be retained. This distinction may be difficult for non-specialists to make under emergency conditions. As a result, escapees are likely to be harder to recover than were Atlantic salmon.

A recent comprehensive review of efforts to recapture escaped fish from marine aquaculture (including open net pen farmed Atlantic salmon and rainbow trout) demonstrates that such efforts are largely unsuccessful (Dempster et al. 2018). This review casts considerable doubt that escaped farmed salmon and steelhead that escape during either persistent low-level "leakage" or less frequent catastrophic failures such as the one that occurred at Cypress Island in August 2017 cannot be recaptured in ecologically significant numbers.

In passing HB 2957, the state legislature tasked state agencies "to eliminate commercial marine net pen escapement." Using the same escape plan that failed dramatically in 2017 does not fulfill that statutory language, or the high standard that the legislature and the people of Washington demanded of the marine aquaculture industry. WAC 197-11-080 requires an analysis of the worst case scenario and its likelihood, which are not adequately discussed.

A full EIS would allow WDFW and other agencies and co-managers to consider a range of alternatives to better mitigate this risk.

The "no-recovery" option for escapes as an unmitigated environmental risk requiring SEPA review

SEPA review requires a threshold determination of whether an action is likely to have a "significant adverse environmental impact." As the Department of Ecology SEPA FAQ notes, "An impact may be significant if its chance of occurrence is not great, but the resulting environmental impact would be severe." The FAQ explains further that an agency may issue a "mitigated DNS in lieu of preparing an EIS when there is assurance that specific enforceable mitigation will successfully reduce impacts to a nonsignificant level."

In this case, one of the forms of mitigation required by the DNS seems to acknowledge that there are risks that cannot reduce impacts to a nonsignificant level. Regarding escape recovery plans, including scenarios for recovery after a catastrophic failure of the pens, the mDNS states:

It is conceivable that an attempt to recover fish after an escape event may negatively affect native Pacific salmonids more than no attempt to recover fish. Cooke is required to work with WDFW, Ecology, and DNR to include a no-recovery option in the 2020 Fish Escape Prevention, Response, and Reporting Plan, to be finalized December 2019. This option should include when, where, and under what conditions a recovery effort should not be attempted. A no-recovery option would be triggered by the state, in consultation with co-managers and federal agencies for the purpose of protecting native Pacific salmonids. A no-recovery option can be triggered by Cooke if the attempted recovery would put the health and safety of its employees at risk.

This scenario exceeds the scope of an mDNS and demonstrates the need for a finding of significance and an environmental impact statement.

The mDNS rightly treats the possibility of escape as a real and serious threat that must be addressed before planting fish in the net pens. Escaped fish pose a range of risks to endangered wild salmonids, and to the ecology of Puget Sound and its watersheds. The recovery efforts following the 2017 collapse demonstrated inadequacies of the existing escape plan even for non-native species. As DFW notes in the mDNS and their exchanges with Cooke in Attachment B, an escape on the scale of 2017 would have released a number of fertile female steelhead that "would have exceeded the number of wild steelhead returning to spawn in many rivers in Puget Sound." DFW's exchange with Cooke states that the use of eggs treated to induce triploid sterility "would reduce, but not eliminate the risk."

To mitigate that risk, DFW requires Cooke to prepare an escape recovery plan. That escape recover plan itself could pose environmental risks. DFW recognizes that significant risk and imposes a further mitigation, one in which no recovery is attempted. This option could be

triggered by the state in consultation with federal and tribal partners, but also can be triggered by Cooke based on its assessment of risk to its crew.

This creates a risk that there would be no mitigating effort taken to address the adverse environmental impacts of an escape. DFW's own arguments in the mDNS lead to the conclusion that this impact cannot be mitigated, and that it is inappropriate to proceed with a mitigated Determination of Non-Significance. To assess the risks of this projects requires a full EIS.

The pens' structure is likely to be unsafe for prevailing conditions in Puget Sound

The joint DFW/DOE/DNR investigation of the Cypress Island net pen collapse of 2017 identified failures of maintenance and engineering which resulted in the collapse of that ten-cage net pen and the release of hundreds of thousands of farmed fish. In the course of ongoing litigation resulting from that collapse, Wild Fish Conservancy contracted an independent marine engineer to provide expert testimony evaluating the collapsed pen and assessing the risks posed by the surviving pens.

Like the state's own investigation, Dr. Tobias Dewhurst's assessment found evidence that the net pen had not been adequately cleaned, and that there had been a persistent failure to confirm the soundness of the pens and their anchoring systems, despite those cleanings and inspections being required by permits and industry best practices prevailing before 2017. In addition, Dr. Dewhurst compared manufacturers' ratings for the surviving pens with conditions at the sites where they are currently deployed, and found "conditions at each of its eight sites exceeded the maximum rated conditions specified by the net pen manufacturer. Based on Cooke's documentation that I have reviewed to date, these issues persist at many of the remaining net pen sites. Thus, the remaining net pen systems may be at risk of partial or

catastrophic failure during instances of extreme environmental loading, which could result in fish escapement."

He concluded: "As a result of excessive loads on the net pen system created by:

- currents and net sizes exceeding those specified by the net pen manufacturer,
- biofouling levels potentially exceeding design values, and
- mooring system installations that deviate from manufacturer recommendations and were not approved by a marine engineer, pens and cages operated by Cooke were at risk of complete failure. One pen, Cypress Site 2, did experience a catastrophic failure."

DFW and its partner agencies should not regard it as sufficient mitigation of risk to permit these pens to transition to rainbow trout/steelhead without new engineering plans in place. The current mitigation proposal would allow these pens to operate without "engineered mooring and anchoring plans and site-specific engineered drawings stamped by a structural engineer" until 2021, and would allow them to operate without a third-party inspection for periods as long as two years.

Given the history of these net pens, the consequences of the mismatch between their manufacturers' ratings and conditions in Puget Sound, and the inadequate maintenance and inspection preceding the 2017 collapse, these pens should be required to have adequately-engineered structures before transitioning to rainbow trout/steelhead. The engineering plans should be incorporated into a full EIS, allowing independent engineers to review the plans and assess the risks posed by the re-engineered pens and anchoring systems. The analysis should incorporate worst case scenarios and their likelihood, as required by WAC 197-11-080. Without that information, how can DFW and its partner agencies, or the voting public and elected leaders who reacted with outrage to the 2017 collapse, assess the risk and sufficiency of this current proposal?

The pens' structure is unsafe for foreseeable conditions in Puget Sound

Puget Sound is a seismically active area, with structures facing threats of significant damage from shaking in an earthquake, and from tsunamis caused by local earthquakes and those traveling from more distant quakes up and down the coast. A substantial tsunami is likely to occur during the life of these pens, and much state policy has been directed in recent years to make high-risk structures safe from seismic risks. While the exact time of such a tsunami is not predictable, there is a substantial likelihood of such a tsunami in the foreseeable future, and much attention and policymaking effort has been dedicated to incorporating that risk into planning.

Unlikely as that risk might be, it is necessary to consider here because, as noted in the Depart of Ecology SEPA FAQ: "An impact may be significant if its chance of occurrence is not great, but the resulting environmental impact would be severe." Since there is evidence that the net pens are already operating at or past their engineered limits, and since the people of Washington State have seen the tremendous harm done when these pens fail, understanding low-probability/high-risk events that threaten further collapses is critical in addressing the pens' full environmental impact.

Modeling by Washington's Department of Natural Resources and NOAA recently examined consequences of tsunamis for Puget Sound. Tsunami waves in some ways simply amplify the existing concerns about the structural soundness of the net pens, and add to the likelihood of a partial or complete collapse of one or more pens already considered as part of Dr. Dewhurst's engineering study. The forces generated by tsunami waves may differ in more than just intensity from routine tidal flow, in part due to the intense oscillation and the rebound of waves off of nearby shores. This risk deserves additional concern and scrutiny as part of a comprehensive EIS. A full-blown analysis of these forces is impractical given the limited time available for public comment.

To help understand the consequences of tsunamis, we requested simulated wave amplitudes and current velocities for the net pen sites. The DNR/NOAA simulations show significant added risk to all of the sites in the event of a tsunami within Puget Sound. The Fort Ward and Clam Bay sites see modeled wave heights nearly 20 feet high, as does the Port Angeles site, while the Cypress Island sites would face a wave over 10 feet high. The Skagit Bay site and Fort Ward site would face variable currents, with current speeds as high as 14 knots and rapid changes in direction and intensity. This oscillation in the course of a tsunami seems likely to generate forces outside those in normal engineering assumptions, and call for further consideration of anchoring systems and structural integrity.

There is no reason that a seismic catastrophe should be allowed to place Puget Sound's wildlife at needless risk due to inadequate planning and preparation. WAC 197-11-080 requires a consideration of worst case scenarios, and state law requires other facilities, such as hazardous waste storage sites, to be evaluated for seismic risks. These aquaculture net pens should be subjected to a full EIS that includes consideration of the seismic risks that they uniquely face as semi-permanent, in-water structures containing farmed fish whose escape would cause significant environmental risks.

Water withdrawal and discharge into Puget Sound

The SEPA checklist states "No surface water withdrawals or diversions are required to implement the species change proposal, or to continue operations at existing floating net pen facilities." This is incorrect, since routine operations—including harvest—entail drawing water out of the pens, extracting the fish on board the harvest ship, and then allowing the water to flow back into the Sound after sluicing across the ship. This process adds pollutants including fish blood, damaged fish parts, and injured bycatch fish to the water before it returns to the Sound. A full EIS would consider the environmental impacts of that removal and addition of water to the Sound.

Pollution from the pens would be harmful to the plants and animals in nearby waters, including to endangered and threatened species

Open water net pens raising salmonids routinely disperse large volumes of feed into public waters within the boundaries of the net pens as sustenance for their farmed fish. Some portion of the feed dispersed may not be consumed by fish 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 these 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 into or near the pens.

Physically small fish species, such as baitfish species and out-migrating 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 rainbow trout/steelhead 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 these rainbow trout/steelhead net pens 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.

In order to treat specific diseases or 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 where the U.S. Food and Drug Administration (FDA) requires a 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 waiting period. A full EIS would assess the risks posed to wild fish and their human and non-human consumers by outflows of food or medicine, and from exposures of native fish entering the pens.

An additional concern with antibiotic-treated feed and treatments to fish or water is the facilitation of the development of antibacterial resistant bacteria in the sediments (Heuer et al 2009, Cabello et al. 2013, Hu 2019). This issue needs to be explicitly addressed, including the provision of data pertaining to any monitoring of the sediments below each of the extant net pens in Puget Sound that may be available, if any.

In the SEPA checklist, Cooke refers in passing to the use of unspecified probiotics in net pens. 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, this practice deserves greater scrutiny than is practical in the limited comment period available.

The pens are also subject to, and possibly causes of, lethal algal blooms. On November 15, marine aquaculture net pens in Clayoquot Bay began seeing die-offs due to a bloom of diatomaceous algae (https://thetyee.ca/News/2019/11/20/Algal-Blooms-Tofino/). The concentration of fecal material, excess food, and fish flesh near pens may exacerbate these blooms, and the resulting fish deaths then produce additional pollution as they cannot be extracted from the nets quickly enough. Observers near the recent die-offs report that the waters near the pens turned "a dark brown muddy river-like colour," due to the rotting flesh.

These die-offs are likely to be more frequent in the future, since reporters observe these algae and their large blooms "have expanded their range and frequency as climate change has warmed, acidified and robbed coastal waters of normal oxygen levels." As discussed below, the inability to quickly empty the pens in the event of massive deaths or a disease outbreak poses significant risks to Puget Sound at large. One such risk is that the weight of the dead fish itself can add stresses to the pens' structure, making a collapse more likely during those emergency operations, and when the contents of the pens pose the greatest risk to the environment.

In passing HB 2957, the state legislature tasked state agencies "to eliminate negative impacts to water quality and native fish, shellfish, and wildlife." Allowing these pens to continue emitting this pollution fails to comply with that statutory language and the high standard that the legislature and the people of Washington demanded of the marine aquaculture industry.

A full EIS would assess all of these risks, including the risks posed by artificial probiotics to the microbial biodiversity of the Sound and its wild denizens, and benthic effects near pens.

Bycatch of fish entering pens or in harvesting and escape recovery efforts

Native fishes—including but not limited to forage fishes such as Pacific herring and potentially migrating or rearing juvenile salmon (including ESA-listed Chinook and chum salmon,

steelhead, and bull trout)—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 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 rainbow trout/steelhead. There are (at least) two issues that DFW and its partner agencies must address with regard to this issue in the permits as part of a full EIS:

1. A comprehensive accounting of species composition as well as total numbers of non-target fishes entrained during each net pen harvest period in which adult farmed rainbow trout/steelhead 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 state agencies and NOAA and available for public review.
2. As documented during Cooke harvesting operations in Puget Sound, all non-target fish 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 adjacent to the net pens during the harvest, feeding on the native fish as they are being discarded in violation of state and federal laws prohibiting the feeding of pinnipeds.

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 does not report that bycatch, the state does not monitor their efforts, and 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.

There are three additional issues here that DFW and partner agencies must address as part of a full EIS:

- Indirect predation by net pen steelhead on ESA-listed juvenile Chinook salmon, steelhead, and bull trout (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, steelhead, and bull trout in the vicinity of the pens.
- 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.

Further, addressing this and other issues concerning potential adverse impacts to public resources from the operations of each net pen requires that WDFW as the primary regulatory agency have the authority 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. At the very least, mitigation should require 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 full EIS would allow analysis of the effects of bycatch on Puget Sound ecosystems and recovery plans for ESA-listed species, and the proper regulatory frameworks to apply for monitoring and limiting bycatch, and due consideration of various alternatives for mitigation.

Air and noise pollution impacts to adjacent lands

Net de-fouling and cleaning operations have been found to cause fouling of the air and significant noise. 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 and the loud noises associated with generators, pumps, and other industrial equipment. This air and noise pollution causes severe depression of local residential property values, apart from human respiratory impacts. A full EIS would allow DFW and partner agencies to determine appropriate maximum levels of airborne particulates, odor-causing chemicals, and noise levels, and require facility operations to monitor and maintain appropriate airborne pollutant and sound levels.

As part of a full EIS, DFW and partner agencies should commission an appropriate sociological survey of resident households within one-half mile of the shorelines of the locations of each net pen facility. 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 air and noise pollution.

Fish flesh discharge

Open-air salmonid 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 conspecific steelhead and other salmonids. Studies have shown that these particles are potential vectors for pathogens.

This fish flesh also serves as an attractant for protected marine mammals and birds, and a full EIS should be undertaken to assess the harm this may do to those protected species.

A NMFS-approved Hatchery Genetic Management Plan (HGMP) is required

In view of the several issues of potential concern to public waters and ESA-listed native salmonids posed by the proposed open water net pen operations, a NMFS-approved Hatchery Genetic Management Plan (HGMP) for each of Cooke's freshwater hatcheries hatching rainbow/steelhead eggs, rearing fry and smolts, and outplanting smolts to open water net pens is required. This is the required ESA Section 4 Incidental Take Permit required of any artificial production facility producing any species of finfish that may have an adverse impact on ESA-listed salmonids. It is clear that open water marine salmonid net pen operations, including

those currently operated by Cooke and those proposed to be operated using "triploid" rainbow/steelhead pose risks to native ESA-listed steelhead, Chinook salmon, and bull trout.

Further, since evaluation and approval of an HGMP is clearly a federal action, NEPA likely applies and a NMFS evaluation of any such HGMP would therefore require a full NEPA analysis, including preparation of an EIS.

Need for a thorough economic cost-benefit analysis of the proposed action and alternatives

Regardless of the biological concerns posed by the proposed action, no credible evaluation of the possible benefits of the proposed action can be considered complete without a full cost-benefit analysis of the proposed action and reasonable alternative uses of the locations currently leased by Washington Department of Natural Resources (WDNR) to Cooke Aquaculture. The public and the public servants charged with making the decision on the proposed action cannot adequately evaluate the possible benefits of the proposed action in the absence of an understanding of what the presumed benefits to the public from the proposed action are and what benefits from reasonable alternative uses of the locations are or may be. It bears reminding that the locations at which the current net pens are located, including the bottom lands and the water in and surrounding each net pen belong to the public. The public needs to be presented with a complete and clear analysis of the economic costs and benefits of the proposed action and alternative uses of these resources. This can only be achieved by a thorough economic cost-benefit analysis embedded in a bona fide alternatives analysis through a full EIS.

The proposed mitigations are inadequate and not reasonably certain to address the risks

While a full EIS would be a more appropriate way to identify and evaluate methods for mitigating the risks of introducing steelhead into net pens, there are several important mitigations that are absent from the current proposal, or that must be strengthened before the proposal moves forward. As it stands, these mitigations are not reasonably certain to address the risks that the state acknowledges, and thus do not satisfy the requirements of SEPA.

While not comprehensive, these are some suggested changes to the proposed mitigations:

- As discussed above, the harvest process must be monitored by independent observers to assess bycatch and to ensure that blood, fish parts, or other waste is not discharged into public waters.
- WDFW and other regulators must have clear authority to conduct unannounced visits and inspections of facilities. They must have authority to review maintenance logs and to examine the structures, fish, feed, medicine, mort tanks, and other regulated components of the facility to ensure that Cooke is fulfilling all obligations under its permits and the required mitigations here.
- Independent inspections of the facilities should be required on an annual basis, not biennially.
- Reports from the independent engineer, and all other reports required from Cooke as part of this mitigation, must be clearly recognized as public records and made available to the public immediately through a publicly-accessible website.
- As discussed above, the mitigation should not merely establish a consistent means of estimating triploidy error rate, but should set a maximum acceptable error rate, and a sampling regime sufficient to assure that the error rate is estimated probabilistically and with high precision. A minimum number of total random samples for a specific, fixed

number of fertile eggs from each egg cohort should be specified to assure that the total number of diploids in a specific total number of eggs from each cohort does not exceed a specified maximum threshold number T with high probability P (95% or greater) The attainment standard would be a probability of less than (1-P) that the number of diploids is not greater than the threshold number T. This error rate cap should be derived based on maximum number of fertile females that might escape from a pen.

- All forms of PRV should be reportable. In addition to screening eggs and smolts, WDFW inspectors should inspect the tanks to assess the rate at which net pens are amplifying pathogens, and act to address pathogen levels that might pose significant risks to wild species attracted to the pens' vicinity.
- All farmed fish should be clearly identifiable in the event of an escape. There is no basis for allowing any of these biologically-altered domestic rainbow/steelhead trout to be introduced without a clear and approved plan in place for visually distinguishing them from any other fish in Puget Sound.

The proposal is deficient by the standards of the 1990 EIS

As stated above, we disagree with the choice to rely on the 1990 EIS for analysis of the current SEPA review. Substantial changes in the list of endangered and threatened species in Puget Sound, improved understanding of the risks posed by industrial net pens and industrial aquaculture, and changes in state law all make a compelling demand for a new EIS. But since the EIS relies on that dated document, any failure to implement its guidelines should be ground to refuse to allow the proposed action or to compel a full environmental review of the effects of that deviation.

The 1990 EIS recognizes that aquaculture with native fish (such as the rainbow/steelhead trout at issue here) pose different, and in some cases greater, risks than non-native fish like Atlantic

salmon. As such there are some guidelines which were not applied in planning and approving the siting and construction of the existing net pens for use with Atlantic salmon which must now be applied in evaluating the pens' use for rainbow/steelhead trout.

On pages 69-70 of the 1990 EIS, section 5.7.2.2 reads in full:

> It is recommended that the following guidelines be used by WDF when reviewing fish farm proposals:
>
> - When Pacific salmon stocks are proposed for farms in areas where WDF determines there is a risk to indigenous species, WDF should only approve those stocks with the greatest similarity to local stocks near the farm site.
> - In areas where WDF determines there is a risk of significant interbreeding or establishment of harmful self-sustaining populations, WDF should only approve the farming of sterile or monosexual individuals, or genetically incompatible species.
> - In areas where WDF determines that wild populations could be vulnerable to genetic degradation, WDF should establish a minimum distance of separation between farms and river mouths.

In the following section, "Mitigation Measures and Unavoidable Significant Adverse Impacts," the EIS states: "WDF and other local experts agree that the potential for significant genetic impacts resulting from farm escapees interbreeding with wild stocks is low. Existing regulations and the use of the guidelines indicated in the Preferred Alternative are adequate to avoid any significant adverse impacts and additional mitigation measures are not necessary."

Unfortunately, there is no evidence that the guidelines indicated in the Preferred Alternative have been applied. We can locate no record of any policy regulating the distance of net pens to the mouths of rivers, and WDFW staff confirmed that they are also unaware of any policies addressing the distance of net pens to river mouths. This guideline only applied to proposals

for native fish aquaculture, so would have been unnecessary under the 1990 EIS until now. WDFW staff queried about this guideline cited the use of monosexual and partially sterile stock in this proposal as adequate mitigation, but the plain language of the 1990 EIS requires both, not one or the other.

This issue is crucial in considering the risks of a farmed domestic fish in waters populated with a threatened wild conspecific, as with wild steelhead and rainbow/steelhead trout. Farmed fish that escape near a river mouth could rapidly migrate upriver and interbreed with wild fish. As noted above, the wild steelhead populations in many rivers could be swamped by the number of fertile females if an escape on the scale of 2017 occurred. But the threatened state of the wild species is so dire that population estimates for some rivers—according to the National Marine Fisheries Service steelhead recovery plan (NMFS 2018)—are as low as 5 individuals in some rivers. Even a single fertile female breeding in such a river could destroy the wild genetics.

As shown in the attached map, the existing seven net pen farm sites are less than 20 kilometers (12.5 miles) by water from important wild steelhead rivers, including the Elwha, Dungeness, Samish, Skagit, Stillaguamish, Cedar, and Green rivers. Other nations restrict net pen farm sites from being as near as 10 km from river mouths, and distances of under 1 km clearly pose serious risk that escapees could breed before recovery.

It should be noted that even the discussion of risks from escapees on breeding grounds rely on dubious assumptions, discussed in detail above. The analysis ignores the loss of breeding opportunities when wild males attempt to mate with escapees (even if those matings are not successful), and the loss of mating opportunities if escapees are able to outcompete wild females for redd sites. Even if the reproductive fitness for escaped females was exactly zero, those effects mean there would still be harm to fragile wild populations. Furthermore, the analysis of reproductive success considers only a point estimate of reproductive success rate, and doesn't address the full distribution of this or other rates, and thus systematically under-

estimates the number of offspring that might result from escapes and the long-term harm to wild steelhead genetics. There is no worst case analysis or discussion of that worst case's likelihood, as required by WAC 197-11-080.

In the absence of established guidelines, and with no discussion in the SEPA checklist or associated documents assessing the risk of releasing these potentially-fertile fish in proximity to river mouths, the conditions set by the 1990 EIS have not been fulfilled, and the proposed actions must be deemed to carry too high a risk of environmental harm. The mDNS should be withdrawn and a full EIS should be conducted assessing the risks associated with each of the existing net pen sites and its neighboring rivers.

The SEPA analysis failed to account for changes in risk assessment imposed by new law

After the 2017 collapse, the Washington Legislature acted deliberately and overwhelmingly to limit open-water marine net pen aquaculture, and the Governor signed the new law enthusiastically. In addition to phasing out Atlantic salmon farming by 2022, the new law imposed a series of other requirements, and established its clear intent that future marine net pen aquaculture be subjected to greater scrutiny. Section 1 of the legislation passed by both houses states:

> Recent developments have thrown into stark relief the threat that nonnative marine finfish aquaculture may pose to Washington's native salmon populations. But just as evidence has emerged that nonnative marine finfish aquaculture may endanger Washington's native salmon populations, so too has evidence emerged that marine finfish aquaculture in general may pose unacceptable risks not only to Washington's native salmon populations but also to the broader health of Washington's marine environment. Given this evidence, the legislature intends to phase out nonnative finfish

> aquaculture in Washington's marine waters. Because the state of the science and engineering with regard to marine finfish aquaculture may be evolving, the legislature further intends to study this issue in greater depth, and to revisit the issue of marine finfish aquaculture once additional research becomes available.

This language was vetoed as the Governor signed the law, but demonstrates the legislature's intent. That intent is also shown 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 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. Relying on the 1990 EIS without acknowledging the significant shift in risk assessment mandated by this law is clearly unwarranted and contrary to the law passed in response to the 2017 catastrophe.

The legislature clearly understood that its actions would not only affect Atlantic salmon farming. In addition to the explicit statement to that effect in Section 1, they heard this testimony from Dr. Ken Warheit, supervisor of WDFW's fish health program:

> We suggest that if the State is going to restrict marine fish aquaculture, it removes authorization also for other nonnative fish. More importantly, it should also remove authorization for native salmonid marine commercial aquaculture which WDFW

> considers to be a greater risk to the State's native wild and hatchery salmonid populations, than is Atlantic salmon marine aquaculture.

The legislation did not forbid the use of biologically-altered rainbow/steelhead trout, but it did establish that the risks of Atlantic salmon aquaculture are too great, and express concern that the same might be true of all marine finfish aquaculture. It urged further study of that risk and raised the bar for future risk assessment.

Unfortunately, the guidance mandated to eliminate these risks has not been issued, even though a report to the legislature regarding its progress was due during this comment period.

In light of that change in state law, it is inappropriate to apply the same risk assessment used in 1990 to a proposal today. In evaluating the risk of marine finfish aquaculture proposals not forbidden under HB 2957, state agencies should conduct an EIS on any proposal that is riskier than the best-case scenario for marine Atlantic salmon aquaculture. Since this proposal does not clear even the guidelines laid out in the 1990 EIS (since no assessment of proximity to river mouths was conducted), and since the farmed fish in this proposal could directly interbreed with a federally-listed steelhead species and degrade its genetics, a new EIS is clearly warranted.

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Tables

River/River system	Population (five year geometric mean, 2010-2014)
Cedar	4
Green	552
Puyallup	277

White	531
Dungeness	141
East Hood Canal Tributaries	60
Sequim/Discovery Bay Tributaries	19
Samish/Bellingham Bay Tributaries	846
Skagit	5123
Stillaguamish	392

Table 1. Estimated wild adult steelhead populations (five year geometric mean, 2010-2014) in rivers within a 12 mile radius of the existing net pens. The highly domesticated fertile net-pen-origin females that are predicted to escape during a net pen failure comparable to that of 2017 would comprise a significant proportion of the spawning population in many Puget Sound rivers.

Number of Fish	1000000
Proportion Diploid	0.00156
Number Diploid Outplanted	1560
Probability of Escape	0.82
Number of Diploid Escapes	1279.2

Probability of Non-Recovery	0.77
Number Diploids Not Recovered	985
Proportion Sexually Mature_High Estimate	0.5
Number Mature Diploids_High Estimate	493
Proportion Sexually Mature_Low Estimate	0.1
Number Mature Diploids_LowEstimate	99
Proportion Fertile Surviving to Spawn	0.5
Number of Mature survivors_High Estimate	247
Number of Mature survivors_Low Estimate	50

Table 2. Estimate of number of the maximum number diploid individuals per million farmed rainbow/steelhead outplanted to a net pen that would result in no more than the number of mature escapees surviving to sexual maturity (bottom row) given the assumptions in WDFW's mDNS Summary, page 6.

Figures

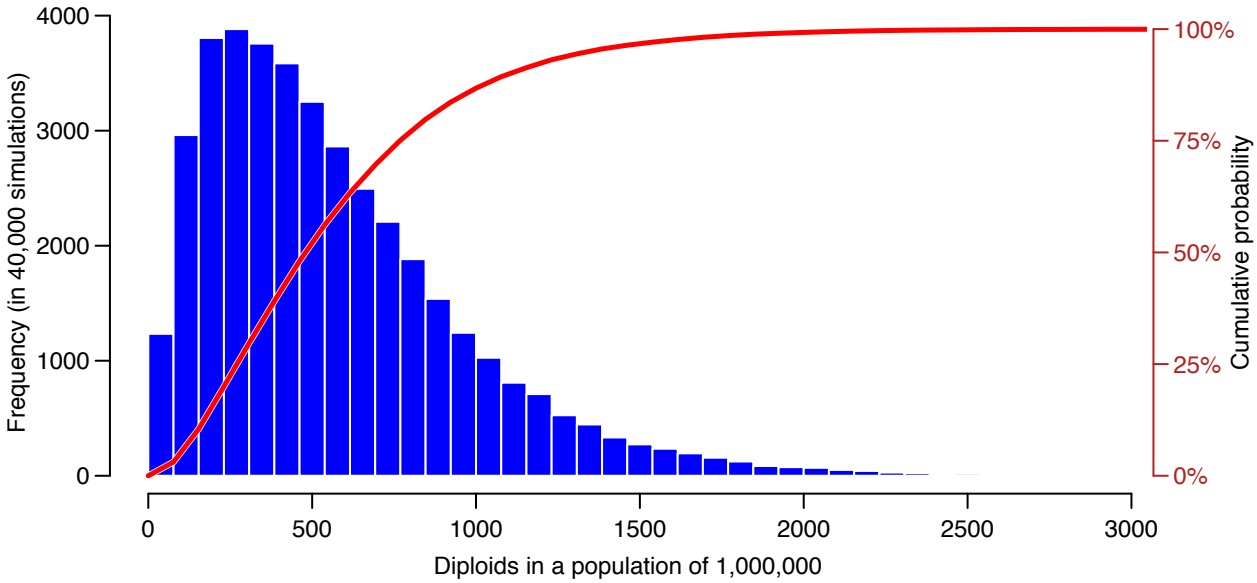


Figure 1. Distribution of the number of diploids (triploid-induction failures) in one million eggs when the number of diploids in a random sample without replacement of 3500 is one. The blue bars show the number of diploids in the interval on the horizontal x-axis (for example, 5000 in the interval between 3000 and 400 shown on the left y-axis). These numbers were computed through a Bayesian analysis that sampled 40,000 probable values (so the probability that the true number of diploids in the population of 1,000,000 is 5,000/40,000 = 0.125 or 12.5%). The red curve is the cumulative probability distribution. The shows the probability that a given value on the x-axis is less than or equal to the corresponding value on the right y-axis. For example, 95% of the distribution is less than 1400 and 97.5% is less than 1600, satisfying a risk-averse criteria that 95% of the distribution of possible values be no greater than 1560 diploid per million eggs or fry. About half the distribution (50%) is less than 500.

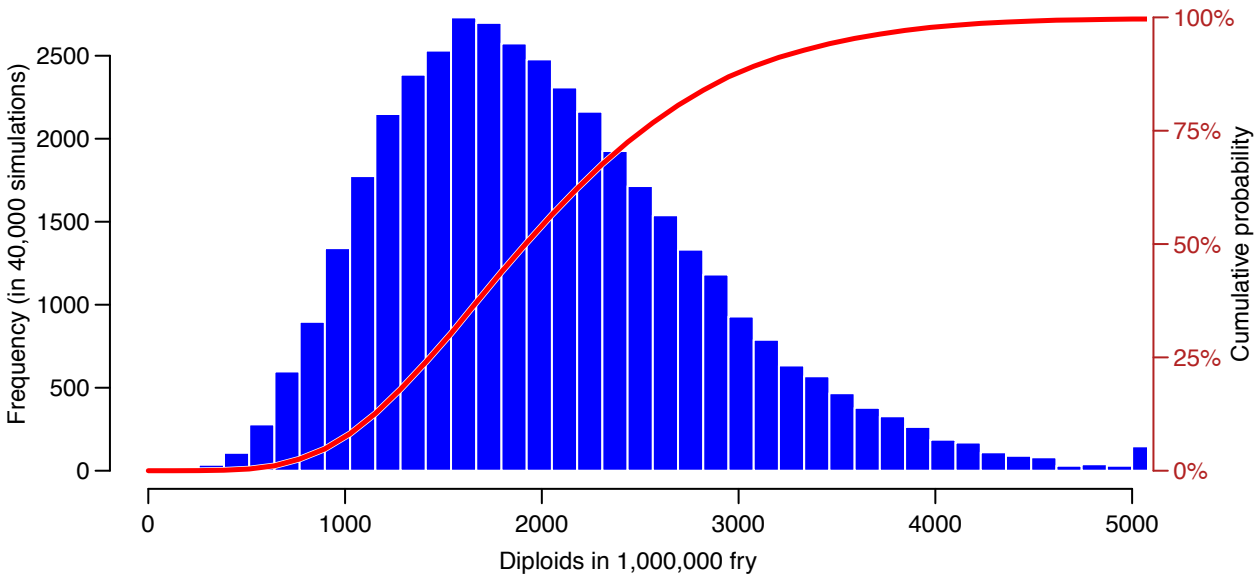


Figure 2. Distribution of the number of diploids (triploid-induction failures) in one million eggs when the number of diploids in a random sample without replacement of 2950 is five (per Attachment A of Cooke's SEPA Checklist). The mean is 2029, the median is 1900. 95% of the distribution is less than 3600. There is a 5% chance that the true number of diploids is between 3500 and 5000.

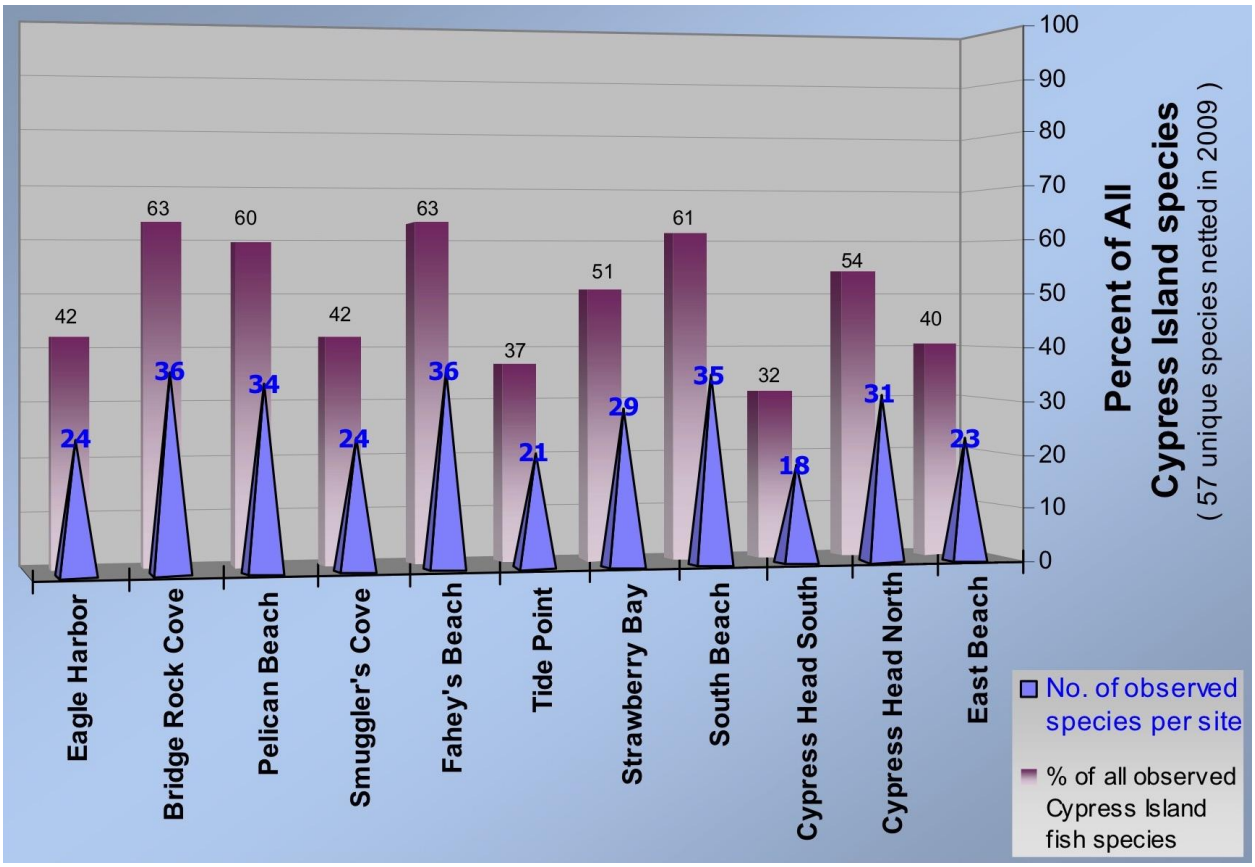
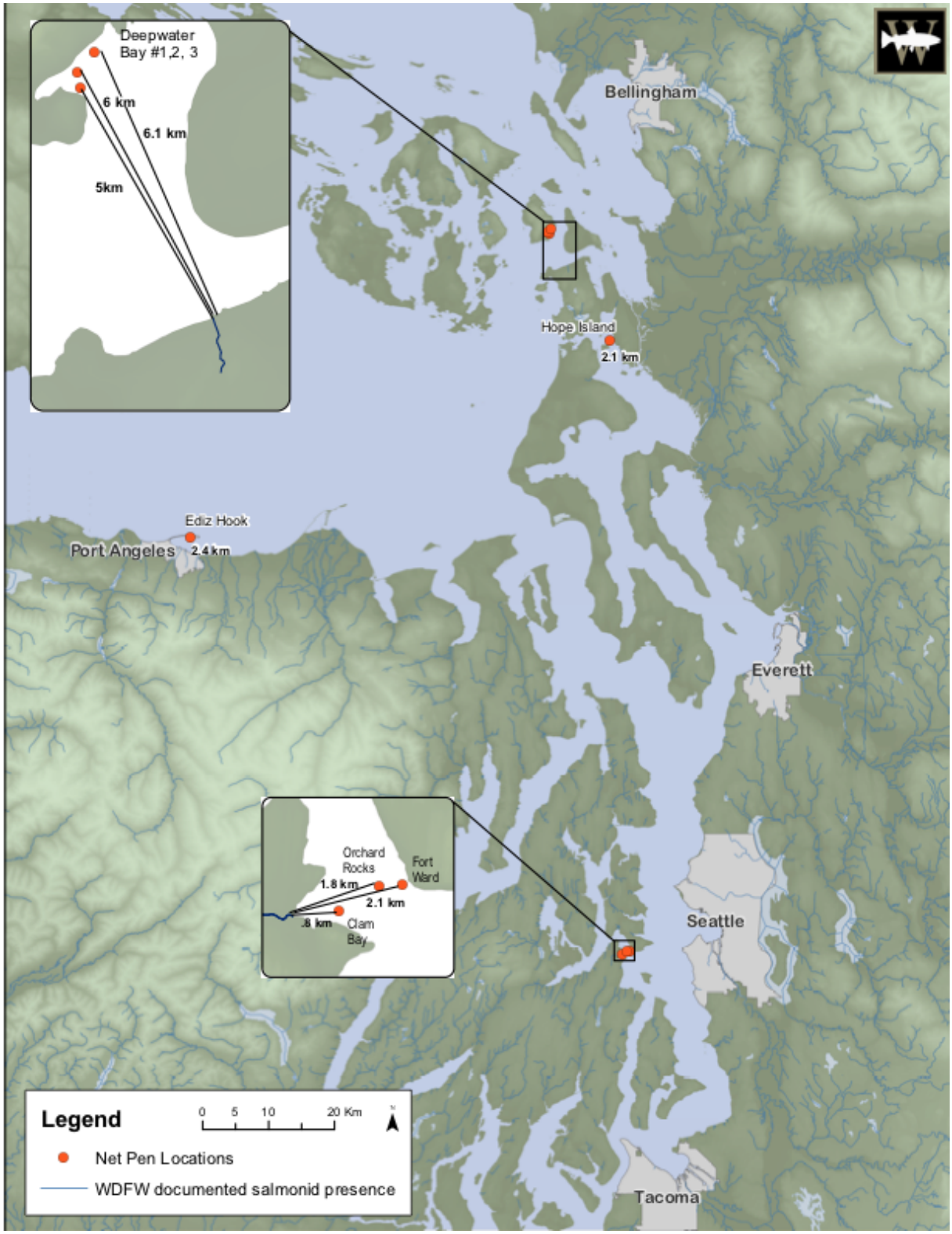


Figure 3. The total number of species encountered at each sample site in a survey of Cypress Island nearshore habitats, as well as the per-site percentage of all species netted from the Cypress nearshore. No single locale had greater than 65% of all species present across the 11 widely dispersed sites. From "Cypress Island Aquatic Reserve Pilot Nearshore Fish Use Assessment" (2011).

Map


Deepwater
Bay #1,2, 3
6 km
6.1 km
5km
Bellingham
Hope Island
2.1 km
Ediz Hook
Port Angeles
2.4 km
Everett
Orchard
Rocks
Fort
Ward
1.8 km
2.1 km
.8 km
Clam
Bay
Seattle
Tacoma
Legend
0 5 10 20 Km
Net Pen Locations
WDFW documented salmonid presence

Appendix

Section A

Extended illustration of the approach for determining a risk-averse standard for the maximum permissible number of diploids released into a new pen seeded with one million ostensibly triploid rainbow trout

We extend the illustrative analysis of the triploid failure rate provided in our comments and summarized in figure 2 to provide a probability distribution of the number of diploids that would survive to spawning grounds of wild steelhead.

Methods

We provide distributions for a) the proportion of fish that escape from a catastrophic failure of a net pen containing one million fish, b) the proportion of the escaped fish that elude recovery efforts, and c) the proportion of diploid fish sexually mature at or after the time of escape that survive to the spawning grounds of wild steelhead. We parameterize each of these three distributions using Beta probability distributions, with parameter values based on the point estimate values used by WDFW in its "Summary of Key issues", pp. 5-6. We then integrate these distributions with the Bayesian estimation of the number of diploids in a lot of 1,000,000 fertilized eggs subjected to triploid induction by extending the model used to generate the data shown in figure 2. All modeling was conducted in Stan running four chains of 20,000 iterations each with a burnin of 20,000 per chain and retaining a total of 40,000 samples from the joint posterior distribution.

We make the simplifying assumption that the total number of 1,000,000 fish growing in the net pen at the time of collapse resulted from plants of surviving fry from lots of 1,000,000 fertilized eggs from each of which 2950 random samples without replacement were obtained and tested

for triploid induction of which a total of 5 individuals were diploid. Given this assumption the probability of the number of diploids in the net pen at the time of failure would follow the distribution shown in figure 2.

Each of the Beta distributions (a, b, and c1 – c3) was parameterized in terms of the mode and coefficient of variation (standard deviation/ mean). We evaluated three cases using different Beta distributions for (c), the proportion of diploid fish sexually mature at or after the time of escape that survive to the spawning grounds of wild steelhead. The parameterizations of the five Beta distributions together with the principal moments are listed in Table 1.

Parameter	Alpha	Beta	Mode	Mean	CV	Central 50%	Central 95%
Beta a	18.86	14.15	0.85	0.80	0.10	[0.77, 0.88]	[0.67, .0.96]
Beta b	22.83	6.46	0.78	0.80	0.10	[0.73, 0.83]	[0.63, 0.92]
Beta c1	90.0	802.1	0.10	0.10	0.10	[0.93, 0.11]	[0.08, 0.12]
Beta c2	70.13	162.3	0.30	0.30	0.10	[0.28, 0.32]	[0.24, 0.36]
Beta c3	50.5	50.5	0.50	0.50	0.10	[0.47, 0.53]	[0.40, 0.60]

Table 1. Parameters of principal moments of the five Beta distributions employed to estimate the number of escaped diploid rainbow/steelhead (RBT) surviving to reach the spawning grounds of wild steelhead.

RESULTS

Convergence of each of the four chains in the stan model run was rapid and the Rhat statistic for all parameters to three digits was 1.000 or 1.001.

Figure A1 (identical to figure 2 in Comments) shows the distribution of the number of diploid RBT in a net pen with a total population of 1,000,000 based on random sampling (without replacement) of 2950 fertile eggs tested for triploidy of which 5 were diploid (i.e., failed the test). This is the principal unknown parameter estimated by the stan model. Figure A2 show the distribution of the number of diploids in the net pen of 1,000,000 RBT (shown in figure A1) that escape from the net pen upon catastrophic failure. This is the result of integrating the distribution shown in figure A1 with the Beta distribution Beta a (Table 1). Figure A3 shows the distribution of the number of escaped diploid RBT that were not recaptured. This is the result of integrating the distribution shown in figure A2 with the Beta distribution Beta b (Table 1). Figures A4, A5, and A6, show the distribution of the number of uncaptured escaped diploid RBT that survive to mature and migrate to the spawning grounds of wild steelhead, given the distribution of survival probabilities Beta c1, Beta c2, and Beta c3, respectively.

Table 2 summarizes some key quantities from each of the distributions in figures A4, A5, and A6.

Parameter	Mean	Std. Dev.	Median	5^{th} %-ile	95^{th} %-ile
Probability of spawning: mode = 0.10 (Beta c1)	131.6	59.0	125	53	242
Probability of spawning: mode = 0.30 (Beta c2)	390.9	172.7	365	160	720
Probability of spawning: mode = 0.50 (Beta c3)	642.9	284.0	600	270	1170

Table 2. Principal moments of the distributions of the numbers of escaped diploids surviving to mature and migrate to the spawning grounds of wild steelhead shown in Figures A4, A5, A6.

We considered three survival scenarios for the survival to maturity and migration to the spawning grounds of wild steelhead in Puget Sound following the catastrophic failure of one of Cooke Aquaculture's net pens containing 1,000,000 RBT. The three scenarios bracket a reasonable range of probabilities, given the uncertainty due to lack of information regarding escaped farm-raised RBT, basic biology and life history of rainbow trout in their native environment, and concern regarding the risk that escaped diploid RBT on the spawning grounds of wild, ESA-listed Puget Sound steelhead may pose to wild steelhead.

The value that society places on protecting ESA-listed Puget Sound steelhead from harm due to escaped non-native (not members of the Puget Sound steelhead Distinct Population Segment) may appropriately be expressed (in part) by how many potential escaped diploids that may be permitted to survive to enter the spawning grounds of wild steelhead and with what probabilities. We argue that a risk-averse, precautionary, approach should be based upon the upper tail of probability distributions of adverse outcomes. In the case at hand, the 95th percentile of the probability distribution of the number of surviving escapes diploids should be the minimum of the upper tail of the distribution considered.

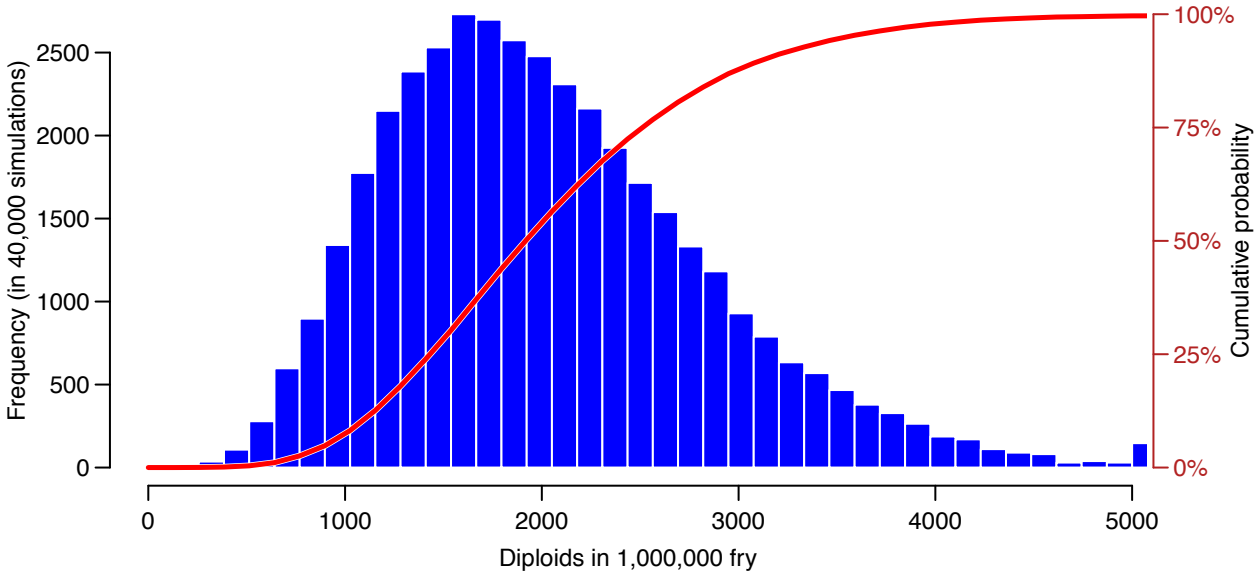
For the three scenarios evaluated the number of surviving escaped diploids at the 95th percentile is 242 for the lowest survival scenario, 720 for the intermediate scenario, and 1170 for the high (50% mean survival) scenario. This mean that there is probability of 0.05 (5%) that in the event of a catastrophic failure of a net pen containing 1,000,000 RBT that the number of surviving escaped diploids reaching the spawning grounds of wild steelhead is at least 242, 720, and 1170, respectively.

From a regulatory, ESA perspective, assuming that the appropriate risk-averse probability level to consider for an adverse outcome of an event such as a v pen is the 95th percentile (where the standard is to not allow an adverse outcome of magnitude X or greater to occur with a probability greater than 5 %), the maximum value of X (here, the number of escaped diploids surviving to the wild spawning grounds) needs to be determined. As discussed in the

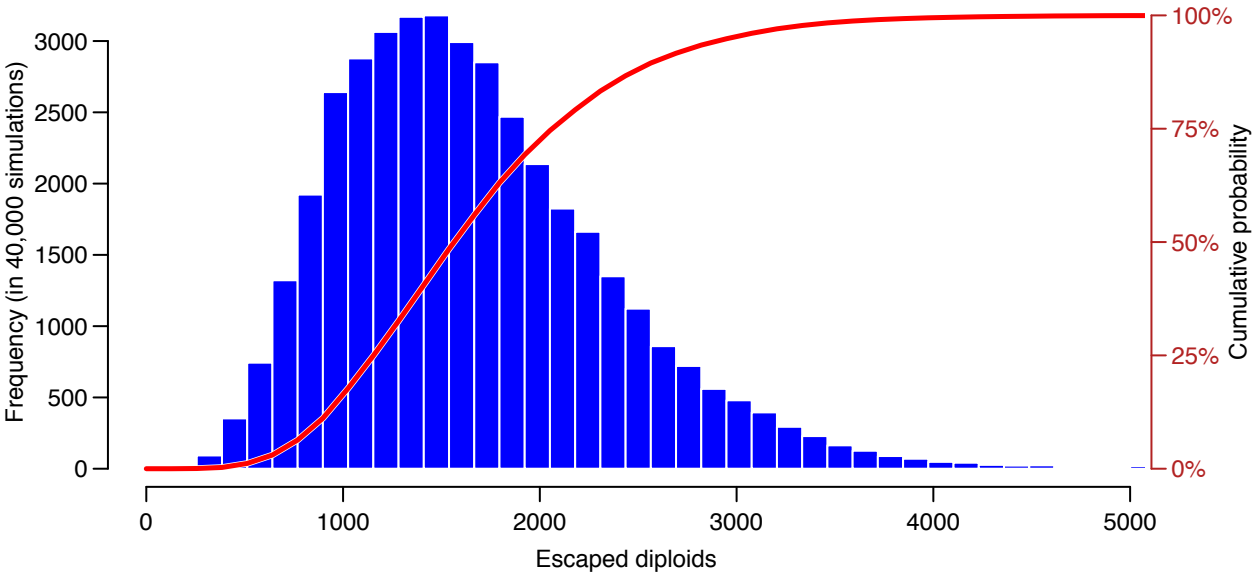
Comments, the choice of the specific maximum acceptable value of X and the maximum permissible probability of X occurring (conditional on a catastrophic failure of a net pen containing 1,000,000) will then determine the maximum allowable triploid-induction failure rate, as well as the appropriate minimum number of samples per million fertile eggs to be tested as well as the maximum number of failures in that number of samples.

We would argue, based on the scenarios described herein, 5 failures (diploids) in a random sample of 2950 from a lot of 1,000,000 fertile eggs yields a distribution with unacceptably high numbers of total diploids in the lot of progeny from those eggs released as molts into any of Cooke's Puget Sound net pens. An appropriate approach to identifying the minimum number of random samples per million eggs and the maximum permissible failures (diploids) in the sample is described in the main body of our Comments.

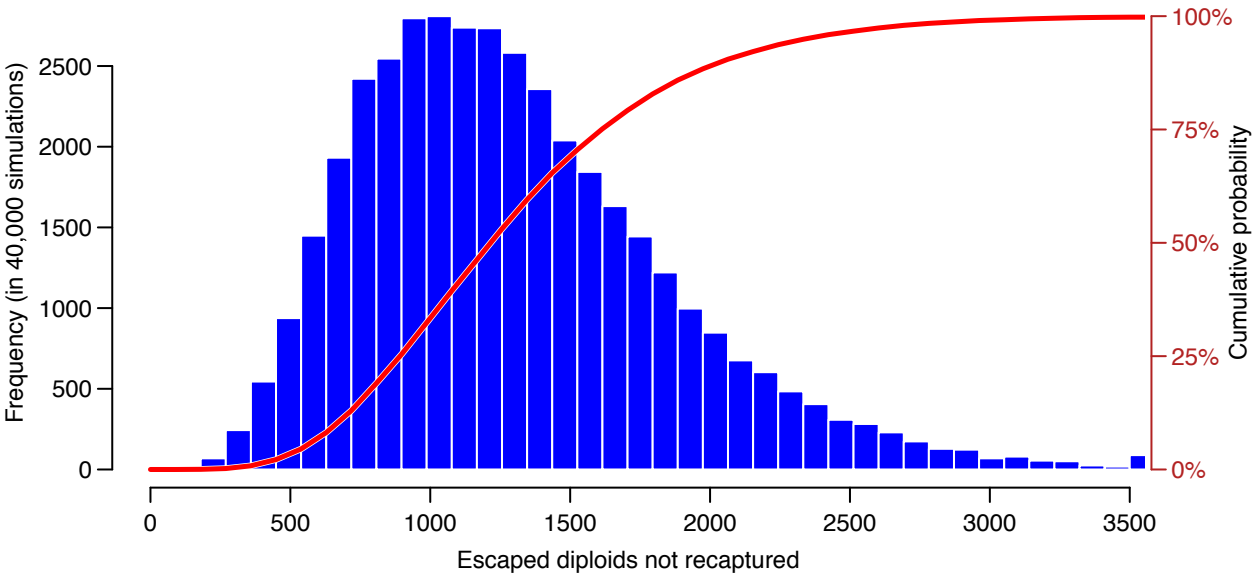
Appendix Figures



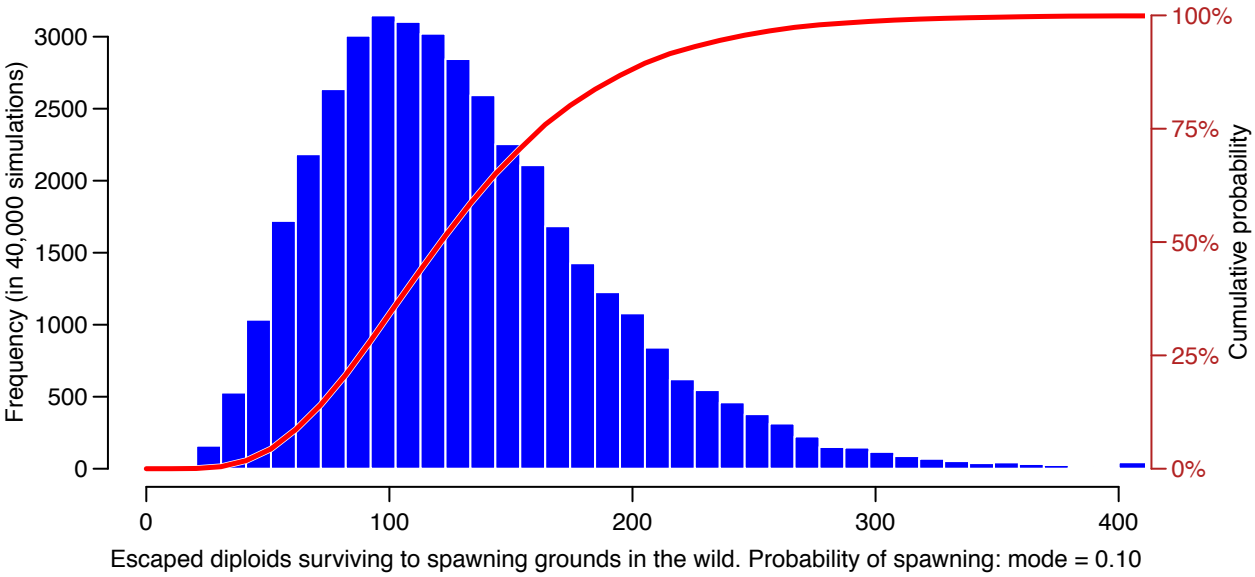
A1 Number of diploid RBT in a net pen of 1000000 RBT (identical to figure 2 above).



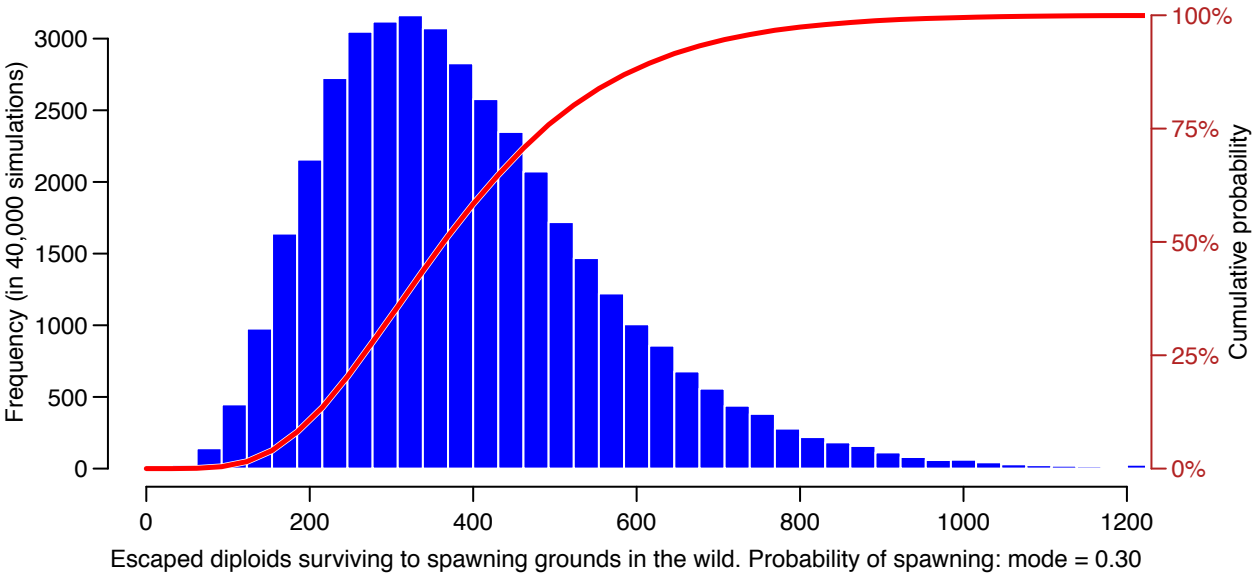
A2. Number of RBT that escape during a catastrophic failure of the net pen.



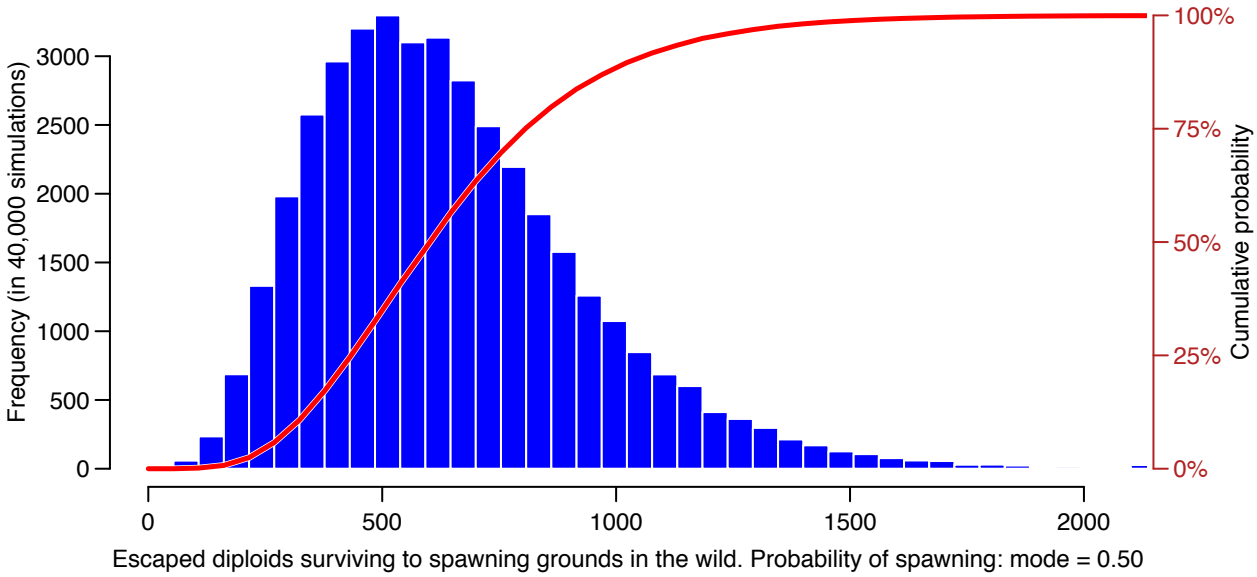
A3. Number of escaped RBT that are not immediately recaptured at the farm site



A4. Number of escaped diploid RBT surviving to spawning grounds in the wild when the modal probability of survival from escape to spawning grounds equals 0.10 (10%).



A5. Number of escaped diploid RBT surviving to spawning grounds in the wild when the modal probability of survival from escape to spawning grounds equals 0.30 (30%).



A6. Number of escaped diploid RBT surviving to spawning grounds in the wild when the modal probability of survival from escape to spawning grounds equals 0.50 (50%). Note the different scale on the X axis compared to figures 4 and 5.

Section B: Petition and signatures

We, the undersigned, have serious concerns over Cooke Aquaculture's new proposal to transition their net pen leases and permits to allow for the commercial propagation and harvest of biologically altered steelhead / rainbow trout in the waters of Puget Sound (https://wdfw.wa.gov/licenses/environmental/sepa/open-comments). These concerns are described in detail in Our Sound, Our Salmon's technical comments (www.oursound-oursalmon.org/osos-sepa-comments).

This proposal is inconsistent with the public's will and seriously undermines the recovery of threatened and endangered wild salmon, steelhead, and Southern Resident killer whales.

We are further concerned at the pace this proposal is moving forward under the State Environmental Protection Act (SEPA) in the absence of a thorough and current environmental assessment.

The State's decision to rely on an outdated, 30 year old Environmental Impact Statement (EIS) completed in 1990, as well as a supplemental environmental review completed by Cooke Aquaculture themselves, erodes the public's trust in the process. Currently, this review fundamentally ignores three decades of well-established science and evidence demonstrating the serious and compounding ecological risks to native fish, water quality, and the overall health of Puget Sound.

This is the same evidence that moved the Washington State legislature to pass bipartisan legislation banning Puget Sound's industrial Atlantic salmon net pens by 2022, an action overwhelmingly supported and celebrated by the public at large.

Given that biologically altered steelhead / rainbow trout have never been reared at the proposed industrial scale in Puget Sound and therefore pose new and unknown risks, and given the public distrust in Cooke Aquaculture to act in the public's best interest, the State

should uphold their responsibility to the public and approach this proposal with current, precautionary, and rigorous environmental review.

We, the undersigned, urge the Washington Department of Fish and Wildlife to withdraw the current SEPA threshold determination and draft a new, comprehensive Environmental Impact Statement that adequately reviews this issue of critical importance to the public.

This petition was signed and supported by the following 1,842 individuals on the following 35 pages.

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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

THE HONORABLE JOHN C. COUGHENOUR

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. COOKE AQUACULTURE PACIFIC LLC, Defendant.	CASE NO. C17-1708-JCC ORDER

This matter comes before the Court on Plaintiff's motion for partial summary judgment (Dkt. No. 29). Having thoroughly considered the parties' briefing and the relevant record, the Court finds oral argument unnecessary and hereby GRANTS in part and DENIES in part the motion for the reasons explained herein.

I. BACKGROUND

Defendant Cooke Aquaculture farms Atlantic salmon at net pen facilities located throughout Puget Sound. (*See* Dkt. No. 15 at 2.) The Clean Water Act ("CWA") requires any entity that discharges pollutants into the waters of the United States to hold and comply with the terms of a National Pollutant Discharge Elimination System ("NPDES") permit. 33 U.S.C. § 1342. Pursuant to the CWA, authorized state agencies may issue NPDES permits; in Washington, the Department of Ecology performs the functions necessary to "meet the requirements" of the CWA, including issuing permits. *See* 33 § U.S.C. 1342(b); Wash. Rev.

Code. § 90.48.260. A NPDES permit holder must prepare and implement certain plans to minimize and monitor the release of pollutants. *Id.* at § 1342(a)(2). Defendant operates its facilities pursuant to NPDES permits, which require, among other things, the preparation of a Pollution Prevention Plan and a Release Prevention and Monitoring Plan ("Release Prevention Plan") (together, "the plans") that satisfy the conditions of its permits. (*See* Dkt. No. 29-2 at 11–12.)

Defendant operated eight net pen facilities across Puget Sound until the collapse of its Cypress Site 2 ("Cypress 2") facility on or about August 20, 2017. (*See* Dkt. No. 1 at 9–10.) The collapse resulted in the release of thousands of Atlantic salmon into Puget Sound. (*Id.*) While Cypress 2 is no longer operational, Defendant continues to operate its other seven net pen facilities under its NPDES permits.[1] On August 24, 2017, Plaintiff sent Defendant a "Notice of Intent to Sue Under the Clean Water Act" letter ("notice letter") and sent a supplemental notice letter on September 6, 2017. (*Id.* at 22, 30.) On November 13, 2017, Plaintiff filed a complaint against Defendant asserting several CWA violations, including that Defendant's plans are facially noncompliant with their respective permits. (*See id.* at 2.) Plaintiff's motion for partial summary judgment asks the Court to find that Defendant's plans violated Conditions S6 and S7 of their NPDES permits. (Dkt. No. 29 at 5–6.)

II. DISCUSSION

A. Legal Standards

1. Summary Judgment

"The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R.

[1] The Court does not address whether Cypress 2's plans violated the conditions of its permit in this order. Defendant asserts in its cross-motion for partial summary judgment that Plaintiff's alleged violations with respect to its permit for Cypress 2 are not ongoing or are moot. (*See* Dkt. No. 41 at 4.) In the interest of judicial economy, this order applies to all of Defendant's facilities except Cypress 2, which the Court will discuss in a separate order addressing Defendant's cross-motion for summary judgment.

Civ. P. 56(a). In making such a determination, the Court must view the facts and justifiable inferences to be drawn therefrom in the light most favorable to the nonmoving party. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986). Once a motion for summary judgment is properly made and supported, the opposing party "must come forward with 'specific facts showing that there is a genuine issue for trial.'" *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986) (quoting Fed. R. Civ. P. 56(e)). Material facts are those that may affect the outcome of the case, and a dispute about a material fact is genuine if there is sufficient evidence for a reasonable jury to return a verdict for the non-moving party. *Anderson*, 477 U.S. at 248–49. Ultimately, summary judgment is appropriate against a party who "fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial." *Celotex Corp. v. Catrett*, 477 U.S. 317, 324 (1986).

2. Clean Water Act

The CWA's purpose is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251. Private citizens may initiate actions against alleged violators of the CWA's requirements, including violations of permit conditions. *Ass'n to Protect Hammersley, Eld, & Totten Inlets v. Taylor Res., Inc.*, 299 F.3d 1007, 1012 (9th Cir. 2002). In order to bring a CWA citizen suit, a plaintiff must satisfy the procedural requirement of providing notice to: (1) the alleged violator; (2) the Environmental Protection Agency ("EPA"); and (3) the state agency tasked with enforcing the CWA where the alleged violation occurred. *See* 33 U.S.C. § 1365(b). The CWA "authorizes citizens to enforce all permit conditions." *Nw. Envtl. Advocates v. City of Portland*, 56 F.3d 979, 986 (9th Cir. 1995).

As a threshold matter, a plaintiff must have statutory and Article III standing to bring a CWA claim. *Nat. Res. Def. Council v. Sw. Marine, Inc.*, 236 F.3d 985, 998 (9th Cir. 2000). A citizen has statutory standing to bring an enforcement action under the CWA for "ongoing" violations. *Id.* A citizen plaintiff can prove ongoing violations by demonstrating that either the violations continue on or after the complaint is filed, or that a reasonable trier of fact "could find

a continued likelihood of a recurrence in intermittent or sporadic violations." *Id.* To establish Article III standing, a plaintiff must demonstrate that: (1) he or she has suffered a concrete injury; (2) that the injury is fairly traceable to the defendant's conduct; and (3) that the injury can be redressed by prevailing in the case. *See Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181 (2000).[2]

B. Sufficiency of Plaintiff's 60-day Notice Letter

Plaintiff asserts that Defendant's Pollution Prevention Plans violate Conditions S6.F, S6.D, and S6.E of its permits, and that its Release Prevention Plans violate Condition S7.6 and the general requirements of Condition S7 of its permits.[3] (*See* Dkt. No. 1 at 23–26). Defendant argues that Plaintiff's notice letter was insufficient with respect to alleged violations of Conditions S6.D, S6.E, and S7, such that the Court lacks jurisdiction over the alleged violations. (Dkt. No. 36 at 18.)[4]

For district courts to have jurisdiction over CWA citizen suits, a plaintiff must provide notice to the alleged violator that contains "sufficient information to permit the recipient to identify the specific standard, limitation, or order alleged to have been violated," and "the activity alleged to constitute a violation." U.S.C. § 1365(b); 40 C.F.R. § 135.3(a). The Ninth Circuit requires that a plaintiff's 60-day notice letter includes "reasonably specific" information, so that the alleged violator will be able to "take corrective actions [to] avert a lawsuit." *Sw.*

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[2] Defendant does not dispute and the Court finds that Plaintiff has representational standing to sue on behalf of its members because: "(a) its members would otherwise have standing to sue in their own right; (b) the interests it seeks to protect are germane to the organization's purposes; and (c) neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit." *Ecological Rights Found. v. Pac. Lumber Co.*, 230 F.3d 1141, 1147 (9th Cir. 2000) (quoting *Hunt v. Wash. State Apple Advertising Com'n*, 432 U.S. 333, 343 (1977)).

[3] The permits for all of Defendant's seven net pen facilities were substantively identical. (*See* Dkt. No. 29-2 at 7–62.) Therefore, the Court's analysis of Plaintiff's claims applies to all of Defendant's facilities, except for Cypress 2 as previously explained. *See supra*, footnote 1.

[4] Defendant concedes that Plaintiff provided proper notice for alleged violations of Conditions S6.F and S7.6. (*Id.*)

Marine, 236 F.3d at 996; *San Francisco BayKeeper, Inc. v. Tosco Corp.*, 309 F.3d 1153, 1158 (9th Cir. 2002). If a plaintiff fails to provide reasonably specific notice of an alleged violation, then the Court lacks jurisdiction over the claim. *Sw. Marine*, 236 F.3d at 997.

The Ninth Circuit does not require a citizen plaintiff to "list every specific aspect or detail of every violation" in its notice letter, as long as it "is reasonably specific" and gives an alleged violator the "opportunity to correct the problem." *Waterkeepers N. California v. AG Indus. Mfg., Inc.*, 375 F.3d 913, 917 (9th Cir. 2004). "The key language in the notice regulation is the phrase 'sufficient information to permit the recipient to identify' the alleged violations and bring itself into compliance." *Id.* at 916 (citing *Cmty. Ass'n for Restoration of the Env't v. Henry Bosma Dairy*, 305 F.3d 943, 951 (9th Cir. 2002)).

1. Conditions S6.D and S6.E

Plaintiff's notice letter stated that Defendant was in violation of its permits for failing to "prepare a Pollution Prevention Plan for each net pen facility that addresses 'operations, spill prevention, spill response, solid waste, and storm water discharge practices which will prevent or minimize the release of pollutants from the facility to waters of the state.' Condition S6." (Dkt. No. 29-2 at 11.) Condition S6.D requires that Defendant's plans address "practices for the storage and, if necessary, disposal of disease control chemicals." (*Id.*) Condition S6.E requires that Defendant's plans address "how solid and biological wastes are collected, stored, and ultimately disposed. Among the solid wastes of concern are . . . blood from harvesting operations." (*Id.*) Plaintiff alleges that Defendant's plans failed to account for the storage and disposal of medicated feed, iodine, and the anesthetic MS-222, and that its plans contained no mention of the collection, storage, or disposal of harvest blood, in violation of Conditions S6.D and S6.E. (Dkt. No. 29 at 15.) Defendant argues that Plaintiff's notice letter was inadequate because it did not specifically identify Conditions S6.D or S6.E as alleged violations. (Dkt. No. 36 at 13.)

Although plaintiff's notice letter did not specifically list Conditions S6.D and S6.E, it

provided sufficient information for Defendant to identify and correct the alleged violations. Condition S6 requires that Defendant's plans address "solid waste" and practices to "prevent or minimize the release of pollutants from the facility" into the state's waters. (Dkt. No. 29-2 at 11.) By specifically referencing that language, Plaintiff gave Defendant notice that it was allegedly in violation of sub-conditions dealing with the handling of pollutants—disease control chemicals and solid waste from harvest blood. (*See* Dkt. No. 1 at 25.) Condition S6 specifically lists substances which are pollutants, including harvest blood and disease control chemicals. (Dkt. No. 29-2 at 11.) The Plans also identify blood from harvesting operations under the category of "solid wastes of concern." (*Id*.) By reading the language of Condition S6 in conjunction with its sub-conditions, Defendant could have reasonably identified that Plaintiff was alleging violations of Defendant's plans' provisions for disease control chemicals, harvest blood, or other pollutants and solid wastes listed under Condition S6.

Therefore, Plaintiff's notice letter provided reasonably specific notice to allow Defendant to identify alleged violations under Conditions S6.D and S6.E.

2. Condition S7's "Best Management Practices" Requirement

Plaintiff's notice letter alleged that Defendant failed "to identify and implement technology that will minimize fish escapes" under a heading titled "Violations of the Fish Release Prevention & Monitoring Plan." (Dkt. No. 1 at 4–5.) Condition S7 requires, *inter alia*, that Defendant's Release Prevention Plan include "identification and implementation of technology . . . [and] [r]outine procedures and best management practices used" to minimize the risk of fish escapements. (Dkt. No. 29-2 at 12.)

Plaintiff asserts that Defendant's mooring inspection intervals are not best management practices, as required by Condition S7, based on the annual mooring inspection requirement in Condition S6. (*See* Dkt. No. 29 at 19.) Specifically, Plaintiff argues that Defendant's 2012 and 2014 Release Prevention Plans violated its permits' requirements by providing for inspections of the high-current-end moorings every three years and for other moorings to be inspected every six

years. (*Id.*) Plaintiff also asserts that Defendant's 2017 Release Prevention Plan provides for high-current-end moorings inspections every three years and does not address inspection intervals for the other moorings. (*Id.*) Condition S7 does not require specific inspection periods. (*See* Dkt. No. 29-2 at 11.)

Defendant could not have reasonably identified Plaintiff's claim that Defendant was in violation of Condition S7 based on an inspection regime imposed by Condition S6. This section of the notice letter was clearly intended to address the Release Prevention Plans, which are governed by Condition S7, not Condition S6. (*See* Dkt. No. 29-2 at 11–12.) Moreover, Condition S7 does not require specific inspection intervals. (*See id.* at 12.) Plaintiff did not provide notice that would allow Defendant to identify what alleged violation that it needed to cure in order to avoid a lawsuit. As such, the Court cannot exercise jurisdiction over this claim. *See Sw. Marine*, 236 F.3d at 996.

The Court finds that Plaintiff's notice letter did not provide Defendant with sufficient notice as to this claim. Therefore, Plaintiff's motion for partial summary judgment is DENIED as to the alleged permit violations of Condition S7.

C. Permit Requirements and Defendant's Plans

The Court has jurisdiction over Plaintiff's claims regarding Conditions S6.D, S6.E, S6.F, and S7.6.[5] The Court next considers whether Plaintiff has demonstrated that no dispute of material fact exists as to whether Defendant's plans violated these permit conditions.

1. Condition S6.F

Condition S6.F requires that the plans include that Defendant will "[a]t least once per

[5] Plaintiff alleges that the permit violations in Defendant's October 2017 Pollution Prevention Plan and the 2017 Release Prevention Plan are also present in Defendant's prior plans during the five-year statute of limitations period. (Dkt. No. 29 at 7, 12.) Because violations in the prior plans can give rise to daily penalties, this order discusses alleged violations with regard to all of Defendant's plans during the relevant statute of limitations period. *See Borden Ranch P'ship v. U.S. Army Corps of Engineers*, 261 F.3d 810, 817 (9th Cir. 2001), *aff'd*, 537 U.S. 99 (2002).

year, conduct an inspection of the main cage structure and anchoring components above and below the water line." (Dkt. No 29-2 at 11.) Plaintiff alleges that Defendant's Pollution Prevention Plans violate Condition S6.F by failing to include adequate procedures for annual inspections of its main cage structure. (Dkt. No. 29 at 13.) Specifically, Plaintiff asserts that Defendant's 2012, 2015, and April 2017 Pollution Prevention Plans do not contain any main cage inspection requirements and that Defendant's October 2017 plan only requires inspection of the "cage system" as a whole after "a major storm event or any physical accident involving the farm site." (*Id.*; Dkt. No. 29-2 at 131.)

Defendant does not dispute that its plans prior to October 2017 were non-compliant with Condition S6.F, but argues that its updated October 2017 plan provides for, across various sections, at least annual inspections of the components of the main cage structure. (*See* Dkt. No. 36 at 18–21.) Defendant states that the "main cage structure" includes: (1) the cage system's floating walkway; (2) the stock (fish containment) nets; and (3) the predator nets. (*Id.* at 19–20.) Defendant asserts that its "Weekly Surface Inspection Sheet," which is attached to the October 2017 plan, provides for weekly inspection of the floating walkway, in satisfaction of Condition S6.F. (Dkt. No. 29-2 at 131.) The Weekly Surface Inspection Sheet requires Defendant to visually inspect the system mooring points; surface shackles, thimbles, and hardware; mooring lines; surface chain connections; walkway hinge points; and walkway grading condition. (*Id.* at 133.) The Weekly Surface Inspection Sheet does not include inspection of the floatation devices that support the walkway, which Plaintiff argues are part of the "below the water line" main cage structure. (*Id.*; Dkt. No. 29 at 14.)

With respect to the fish and predation nets, Defendant argues that the October 2017 plan's provisions for cleaning and repairing its nets satisfy Condition S6.F. (Dkt. No. 36 at 19.) Defendant's plan states that fish containment nets are "typically pulled to the surface once per year" and that fish containment nets and predator nets are removed at the end of a growing cycle for repair and cleaning. (Dkt. No. 29-2 at 129.) However, the plan's net cleaning procedures,

included under the section titled "Net Washing Practices," do not provide for annual inspection of the fish or predator nets, only that the nets are "to be pulled from the water and transported to a land based cleaning and repair facility" after a growing cycle. (*Id.*) Defendant's plan does not specify how often a growing cycle ends, or whether the cleaning and repair of nets represent the inspection that is required by Condition S6.F. (*See id.*) Facially, it appears that Defendant's net washing provisions are intended to satisfy the permit's requirement to include net cleaning procedures, not for annual "inspection of the main cage structure and anchoring components above and below the water line." (*Id.* at 11.)

The Court finds that Defendant's 2012, 2015, April 2017, and October 2017 Pollution Prevention plans failed to include annual inspection of the main cage system as required by Condition S6.F. Therefore, Plaintiff's motion for partial summary judgment is GRANTED as to Defendant's permit violations of Condition S6.F.

2. Condition S6.D

Condition S6.D requires that the plan address "[p]ractices for storage, and if necessary, disposal of disease control chemicals." (Dkt. No. 29-2 at 11.) Plaintiff argues that Defendant failed to include provisions to store and dispose of disease control chemicals in its 2012, 2015, April 2017, and October 2017 Pollution Prevention Plans. (Dkt. No. 29 at 15–16.) Plaintiff asserts that Defendant used medicated fish feed, iodine, and the anesthetic MS-222 as disease control chemicals, which its plans do not properly address. (*Id.*)

With respect to medicated fish feed, Plaintiff asserts that while Defendant's 2012 and 2015 Pollution Prevention Plans provided that the feed must be stored in leak proof containers, the plans failed to account for the disposal of medicated feed. (*Id.*) Defendant's 2012 and 2015 plans provide that "[a]ny medicated feed will be clearly marked on the label . . . [and] stored in leak-proof containers while at the facility." (Dkt. No. 29-2 at 113, 121.) Defendant's plans do not account for the disposal of medicated feed, which is required by Condition S6.D. (*See id.* at 11, 113, 121.) Defendant's April and October 2017 Pollution Prevention Plans discuss medicated

feed under the section "Disease Control Chemicals." (*See id.* at 125, 130.) Defendant's April and October 2017 plans provide that "any unused medicated feed that remains after the treatment period ends will be removed from the net pen site and transported back to an upland facility for covered storage" and that expired feed "will be disposed of at a solid waste facility." (*Id.*) Defendant's 2017 plans provided for storage of the feed *after* it is no longer at the facility, but do not address how it is stored when it is used to treat the fish at the facility.

Defendant argues that iodine and MS-222 are not disease control chemicals and therefore do not need to be addressed in its plans. (Dkt. No. 36 at 25.) With respect to iodine, Defendant states that "[i]odine is used as a disinfectant, primarily of boots." (*Id.*) Defendant's 2012, 2015, and April 2017, and October 2017 Pollution Prevention Plans list "disinfectants used for footbaths, dive nets, and other equipment" under the heading of "Disease Control Chemicals." (Dkt. No. 29-2 at 113, 121, 125, 130.) In response to an interrogatory asking it to "[d]escribe all efforts to treat, reduce, and/or prevent diseases . . . including the method and/or substances used," Defendant responded by stating, "[a]s with all biosecurity measures at the net pens, the mortality extraction bags used to collect the dead fish are disinfected after each use, using a 24 hour soak in an iodine solution." (*Id.* at 258–261.) Additionally, Defendant listed iodine and MS-222 on the 2016 "Annual Disease Control Chemical Use Report" required by its permits. (*Id.* at 247–55.) None of Defendant's Pollution Prevention Plans include procedures for the storage of iodine. (*See id.* at 113, 121, 125, 130.) Defendant's 2012 and 2015 plans addressed the disposal of iodine, but Defendant's April and October 2017 plans do not. (*See id.*) Defendant's plans do not mention MS-222. (*See id.*)

The Court finds that Defendant failed to address the storage and disposal of disease control chemicals in its 2012, 2015, April 2017, and October 2017 Pollution Prevention Plans. Therefore, Plaintiff's motion for partial summary judgment is GRANTED as to Defendant's permit violations of Condition S6.D.

3. Condition S6.E

Condition S6.E requires that the Pollution Prevention Plans address "[h]ow solid and biological wastes are collected, stored, and ultimately disposed. (Dkt. No. 29-2 at 11.) Plaintiff argues that Defendant's Pollution Prevention Plans fail to account for the collection, storage, and disposal of harvest blood. (Dkt. No. 29 at 16–17.) Defendant claims that its plan "adequately addresses how harvest blood is collected, stored, and disposed" because it does not bleed fish at the facilities. (Dkt. No. 36 at 26.) Defendant's plans do not address how it collects, stores, and disposes of harvest blood. (*See id.* at 113, 121, 125, 130.) Even if Defendant does not bleed fish at its facilities, its plans still had to address procedures for blood generated from harvesting operations. (Dkt. No. 29-2 at 11.) The plans' complete silence on this issue places it in facial violation of the permits. Therefore, Plaintiff's motion for partial summary judgment is GRANTED as to Defendant's permit violations of Condition S6.E.

4. Condition S7.6

Condition S7.6 requires that Defendant's plans include procedures for "routinely tracking the number of fish within the pens, the number of fish lost due to predation and mortality, and the number of fish lost due to escapement." (Dkt. No. 29-2 at 12.) Plaintiff argues that Defendant's plans fail to address procedures to routinely track the number of fish lost to predation or escapement. (Dkt. No. 29 at 17–18.) Defendant argues that its plans provide for routine tracking of mortalities in a variety of systems and that "[p]redation losses are simply a variety of mortalities at the site." (Dkt. No. 36 at 22.)

Defendant's 2012, 2014, and 2017 Release Prevention Plans state under the heading "Procedures for Routinely Tracking the Number of Fish" that fish are observed from the surface and that mortalities are removed and accounted for in a database (2012), log books (2014 plan), or an inventory system (2017 plan) after removal. (Dkt. No. 29-2 at 142, 157, 187.) Even if Defendant does track predation and escapement routinely, its permits state that the plan "must include . . . the following elements . . . "[p]rocedures for routinely tracking . . . the number of fish lost due to predation and mortality and the number of fish lost due to escapement." (*Id.* at

12.) Defendant's Release Prevention Plans fail to provide for such tracking. (*See id.* at 142, 157, 187.) Thus, Defendant's argument is based on what it was allegedly doing in practice, not what was included in the plans.

The Court finds that Defendant's 2012, 2014, and 2017 Release Prevention Plans did not satisfy Condition S7.6 of the permits. Therefore, Plaintiff's motion for partial summary judgment is GRANTED as to Defendant's permit violations of Condition S7.6.

III. CONCLUSION

For the foregoing reasons, Plaintiff's motion for partial summary judgment (Dkt. No. 29) is:

(1) GRANTED as to permit violations relating to Condition S6.F;

(2) GRANTED as to permit violations relating to Condition S6.D for Defendant's 2012, 2015, April 2017, and October 2017 Pollution Prevention Plans;

(3) GRANTED as to permit violations relating to Condition S6.E for Defendant's 2012, 2015, April 2017, and October 2017 Pollution Prevention Plans;

(4) GRANTED as to permit violations relating to Condition S7.6 for Defendant's 2012, 2014, and 2017, and Release Prevention Plans; and

(5) DENIED as to permit violations relating to Condition S7.

DATED this 26th day of April 2019.

John C. Coughenour
UNITED STATES DISTRICT JUDGE

THE HONORABLE JOHN C. COUGHENOUR

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. COOKE AQUACULTURE PACIFIC LLC, Defendant.	CASE NO. C17-1708-JCC ORDER

This matter comes before the Court on Defendant's motion to exclude expert opinions (Dkt. No. 82), Plaintiff's motion for partial summary judgment (Dkt. No. 79), and Defendant's motion for partial summary judgment (Dkt. No. 84). Having thoroughly considered the parties' briefing and the relevant record, the Court finds oral argument unnecessary and hereby DENIES Defendant's motion to exclude expert opinions (Dkt. No. 82), GRANTS in part and DENIES in part Plaintiff's motion for partial summary judgment (Dkt. No. 79), and DENIES Defendant's motion for partial summary judgment (Dkt. No. 84) for the reasons explained herein.

I. BACKGROUND

This lawsuit arises out of the 2017 collapse of one of Defendant Cooke Aquaculture Pacific LLC's Atlantic salmon net-pen facilities ("Cypress 2") in Deepwater Bay off Cypress Island, Washington. (*See* Dkt. No. 1 at 9–10.) The Clean Water Act ("CWA") prohibits discharges of pollutants into the waters of the United States, except pursuant to a National

Pollutant Discharge Elimination System ("NPDES") permit. 33 U.S.C. § 1342. As provided by the CWA, authorized state agencies may issue NPDES permits and enforce permit requirements. *See* 33 § U.S.C. 1342(b). In Washington, the Department of Ecology ("Ecology") performs the functions necessary to "meet the requirements" of the CWA, including issuing NPDES permits. Wash. Rev. Code. § 90.48.260.

Prior to the collapse of Cypress 2, Defendant operated eight Atlantic salmon net-pen facilities across Puget Sound pursuant to separate NPDES permits issued by Ecology. (*See* Dkt. Nos. 29-2 at 7–62, 44 at 4–33.) The net pens are floating facilities into which Defendant transfers Atlantic salmon smolts from its freshwater hatchery to be reared to a marketable size. (Dkt. No. 15 at 4.) The pens are made of metal walkways from which nets are hung. (Dkt. No. 29-2 at 70–73.) The net pens are held in place by a mooring system comprised of mooring chains or ropes attached to anchors. (*Id.* at 70–71, 87–88.) Defendant's NPDES permits impose numerous requirements for minimizing the discharge of pollutants from the facilities. (*See* Dkt. No. 44 at 8–21.) Defendant's NPDES permit for Cypress 2 was issued in October 2007 and was in force at all times relevant to this lawsuit. (Dkt. Nos. 42 at 5, 14; 44 at 1.)[1] Defendant operates its facilities on lands leased from the Washington State Department of Natural Resources ("DNR"). (*E.g.*, Dkt. No. 52-1 at 37–69.)

On August 19, 2017, Cypress 2 experienced mooring failures during very strong tidal currents. (Dkt. No. 42 at 2.) These mooring failures progressed over the following days and resulted in the facility's collapse and eventual destruction. (*Id.* at 2–3.) The catastrophic collapse of Cypress 2 resulted in the estimated release of more than 200,000 Atlantic salmon into Puget Sound. (Dkt. No. 29-2 at 200.) The collapse also resulted in the release of other debris from the facility into Puget Sound. (*Id.* at 211–12.) On August 24, 2017, Plaintiff sent Defendant a "Notice of Intent to Sue Under the Clean Water Act" letter ("notice letter") and sent a supplemental notice

[1] Although scheduled to expire in 2012, the Cypress 2 permit was administratively extended multiple times. (Dkt. Nos. 42 at 9, 44 at 4.).

letter on September 6, 2017. (Dkt. No. 1 at 22, 30.) On the same dates, Plaintiff mailed copies of the notice letter to the Administrator of the Environmental Protection Agency ("EPA"), the Regional Administrator of Region 10 of the EPA, and the Director of Ecology. (Dkt. No. 1 at 2–3.) On November 13, 2017, Plaintiff filed a complaint against Defendant asserting several CWA violations related to the Cypress 2 collapse, as well as violations at Defendant's seven other Puget Sound net-pen facilities. (*See generally id.*)

On August 25, 2017, DNR notified Defendant that it had defaulted on its obligations under the parties' lease and demanded that Defendant remove all damaged materials from the Cypress 2 site. (Dkt. No. 52-1 at 145.) DNR stated that it may terminate the lease if Defendant did not cure the default by September 24, 2017. (*Id.*) In a letter to DNR dated September 1, 2017, Defendant stated that it had "been implementing its Fish Escape Prevention Plan" and "reserve[d] all rights with respect to the Lease." (*Id.* at 149.) Defendant proceeded to conduct cleanup, salvage, and remediation at and around the Cypress 2 site throughout the rest of 2017 and into 2018. (*See* Dkt. Nos. 42, at 3–4, 29-2 at 210–12.)

On January 30, 2018, Ecology issued a $332,000 administrative penalty against Defendant arising from the Cypress 2 collapse. (Dkt. No. 52-1 at 160–66.) Ecology concluded that Defendant violated its NPDES permit by negligently allowing the release of farmed salmon, failing to inspect anchoring components deeper than 100 feet, and not adequately cleaning the facility's nets. (*Id.* at 163–64.) On March 1, 2018, Defendant appealed Ecology's penalty to the Washington State Pollution Control Hearings Board. (Dkt. Nos. 42 at 4, 52-1 at 169); *see also* Wash. Rev. Code §§ 43.21B.010, 43.21B.110.

On February 2, 2018, DNR terminated Defendant's lease for Cypress 2. (Dkt. No. 42 at 4.) Defendant responded on March 1, 2018, by filing a complaint in Thurston County Superior Court challenging DNR's termination of the lease. (Dkt. No. 52-1 at 11–32.) Among other relief, Defendant sought a declaratory judgment that DNR was not "entitled to withhold its consent to [Defendant's] reconstruction of [Cypress] 2 . . . and that it is entitled to restock [Cypress] 2 as

soon as it has been rebuilt." (*Id.* at 28.)

On March 22, 2018, Washington's governor signed legislation that prohibits DNR from either granting new leases of aquatic lands for non-native finfish aquaculture projects or renewing or extending a lease in existence as of June 7, 2018, that includes non-native finfish aquaculture. *See* Wash. Rev. Code § 79.105.170; *see also* H.B. 2957, 65th Leg., Reg. Sess. (Wash. 2018).

On April 24, 2019, Defendant and Ecology entered a consent decree to resolve Defendant's liability related to the Cypress 2 collapse and the corresponding violations identified by Ecology in its notice of administrative penalty. (*See* Dkt. No. 74-1 at 4–11.) On April 25, 2019, the Pollution Control Board, pursuant to the consent decree, dismissed Defendant's appeal of Ecology's administrative penalty. (*Id.* at 18.) Defendant has not conducted net-pen operations at Cypress 2 since its collapse in August 2017. (Dkt. No. 43 at 3.) In fact, the Cypress 2 facility no longer exists, and its remains were ultimately salvaged and removed from the site following the collapse. (*Id.*; *see* Dkt. No. 29-2 at 210–12.) Defendant states that it has no intention of rebuilding Cypress 2. (Dkt. No. 43 at 3.) On December 21, 2018, Defendant requested that Ecology terminate the permit for Cypress 2. (Dkt. No. 86 at 4.) On August 29, 2019, Ecology informed Defendant that it had completed its closure monitoring of Cypress 2 and that the permit would be terminated as of September 28, 2019. (See Dkt. No. 86 at 6.) Defendant has represented that it has not appealed the decision. (*See* Dkt. No. 84 at 9.) Defendant continues to operate its other seven net pen facilities under its NPDES permits. (*See* Dkt. Nos. 29-2 at 7–62, 44 at 4–33.)

Defendant now moves to exclude Plaintiff's expert opinions on risk of failure (Dkt. No. 82), Plaintiff moves for partial summary judgment on multiple claims (Dkt. No. 79), and Defendant moves for partial summary judgment on the grounds of *res judicata* and mootness (Dkt. No. 84).

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II. DISCUSSION

A. Legal Standards

"The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). In making such a determination, the Court must view the facts and justifiable inferences to be drawn therefrom in the light most favorable to the nonmoving party. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986). Once a motion for summary judgment is properly made and supported, the opposing party "must come forward with 'specific facts showing that there is a *genuine issue for trial*.'" *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986) (quoting Fed. R. Civ. P. 56(e)). Material facts are those that may affect the outcome of the case, and a dispute about a material fact is genuine if there is sufficient evidence for a reasonable jury to return a verdict for the non-moving party. *Anderson*, 477 U.S. at 248–49. Conclusory, non-specific statements in affidavits are not sufficient, and "missing facts" will not be "presumed." *Lujan v. Nat'l Wildlife Fed'n*, 497 U.S. 871, 888–89 (1990). Ultimately, summary judgment is appropriate against a party who "fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial." *Celotex Corp. v. Catrett*, 477 U.S. 317, 324 (1986).

B. Defendant's *Daubert* Motion to Exclude Dr. Tobias Dewhurst's Expert Opinions Regarding Risk of Failure

The trial court has the "task of ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579, 597 (1993). A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (1) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (2) the testimony is based on sufficient facts or data; (3) the testimony is the product of reliable principles and methods; and (4) the expert has reliably

applied the principles and methods to the facts of the case. Fed. R. Evid. 702.

In *Daubert*, the Supreme Court rejected the rigid "general acceptance" test for the admissibility of scientific evidence. 509 U.S. at 596. The Court reasoned that "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Id.* When determining admissibility, the text is "a flexible one," with a focus on principles and methodology. *Id.* at 595. Rule 702 is generally construed liberally. *United States v. Hankey*, 203 F.3d 1160, 1168 (9th Cir. 2000). And in determining the admissibility of expert testimony, "there is less danger that a trial court will be 'unduly impressed by the expert's testimony or opinion' in a bench trial." *FTC v. BurnLounge, Inc.*, 753 F.3d 878, 888 (9th Cir. 2014).

Dr. Tobias Dewhurst is a marine engineering expert retained by Plaintiff to evaluate the safety of Defendant's net pens. (Dkt. No. 83-1 at 6.) To establish predicted environmental conditions at the net pens, Dewhurst used an international standard, the Norwegian Aquaculture Standard 9415 ("NS9415"), to analyze data on local environmental conditions as measured by TerraSond, a company Defendant has retained. (*Id.* at 21–22.) Dewhurst used these predicted conditions to calculate the loading forces exerted on the net pets. (*Id.* at 27–28.) Dewhurst then compared the net pen manufacturer specifications with the predicted environmental conditions for each site. (Dkt. No. 79-3 at 11–12.) Defendant argues that the Court should exclude from trial Dewhurst's opinion that each of Defendant's current net pen facilities are "at risk of failure." (Dkt. No. 82.) Defendant offers three reasons to exclude Dewhurst's testimony as unreliable under Rule 702. (*See id.*)

First, Defendant argues that Dewhurst should have performed analytical modeling to quantify the risk of failure. (*Id.* at 10–12.) This criticism is not an attack on the reliability of the expert's methodology, but instead an argument as to how to weigh the opinion. Thus, it is not a ground to exclude the testimony under *Daubert*. *See* 509 U.S. at 595–96. Defendant cites an out-of-circuit case in which the district court exercised its discretion to exclude an opinion in which

an expert offered an opinion on the degree of risk posed by contamination. (*See* Dkt. No. 82 at 13.) But that court concluded the expert opinion lacked a sufficient basis in facts or data under Rule 702, not that the expert's methodology was unreliable. *See Lewis v. FMC Corp*., 786 F. Supp. 2d 690, 702–03 (W.D.N.Y. 2011) (noting that the expert conceded further investigation was required to determine the extent of the contamination).

Second, Defendant contends that Dewhurst's opinion should be excluded because he equates the net pen manufacturer specifications with the net pen's safe operating limits. Defendant argues that manufacturer specifications are too conservative a basis for determining whether the net pen operations are safe, arguing that a non-compliant net pen could still be shown to be safe based on an engineer's analysis. (Dkt. Nos. 82 at 13–14, 104 at 3–7.) But it is hard to see how Defendant could seriously contend that a manufacturer's product specifications are not at least relevant to the safe operations of a product. Indeed, Defendant's own expert conducted a similar analysis of predicted environmental conditions compared to conditions allowed by the manufacturer. (Dkt. No. 83-1 at 22.) Thus, Defendant's assertion that a non-compliant net pen *might* still be safe likewise goes to the weight, not reliability, of Dewhurst's testimony. *Daubert*. *See* 509 U.S. at 595–96.

Third, Defendant argues that Dewhurst's opinion should be excluded because he does not quantify the degree of risk of failure for each net pen site and has not differentiated as to whether there is a low or high risk of failure for each site. (Dkt. No. 82 at 14–15.) Once again, this is an attack on weight, not reliability, of the expert opinion. *Daubert*. *See* 509 U.S. at 595–96.

Thus, Defendant has not raised any serious challenge to the reliability of the principles or methodology supporting Dewhurst's expert opinion. *See* Fed. R. Evid. 702. Defendant remains free to challenge the expert opinion through "[v]igorous cross-examination" and "presentation of contrary evidence." *See Daubert*, 509 U.S. at 596. Therefore, Defendant's motion to exclude Dewhurst's risk of failure testimony is DENIED on these grounds.

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C. Plaintiff's Motion for Partial Summary Judgment

1. Plaintiff's Request to Strike

In a summary judgment ruling, a trial court may consider only evidence which could be admissible at trial. *See* Fed. R. Civ. P. 56(c); *Nilsson v. City of Mesa*, 503 F.3d 947, 952 n.2 (9th Cir. 2007). Plaintiff requests that the Court strike several items of evidence that Defendant has submitted in opposition to Plaintiff's motion for partial summary judgment. (*See* Dkt. No. 95 at 5–7.) The Court considers each request in turn.

a. *Declarations of Stephen Weatherford and Bill French*

Federal Rule of Civil Procedure 26(a) requires that parties disclose the names of "each individual likely to have discoverable information—along with the subjects of that information—that the disclosing party may use to support its claims or defenses." Fed. R. Civ. P. 26(a)(1)(A)(i). A party must supplement its disclosure "in a timely manner if the party learns that . . . the disclosure . . . is incomplete or incorrect, and if the additional or corrective information has not otherwise been made know to the other parties during the discovery process or in writing." Fed. R. Civ. P 26(e)(1)(A). Where a party fails to disclose its intent to rely on a witness either without substantial justification or where the nondisclosure was not harmless, Rule 37(c)(1) provides that the party is "not allowed to use that information or witness" at trial. Fed. R. Civ. P. 37(c)(1); *Yeti by Molly, Ltd. v. Deckers Outdoor Corp.*, 259 F.3d 1101, 1106 (9th Cir. 2001).

In opposition to Plaintiff's motion for partial summary judgment, Defendant submitted the declarations of Stephen Weatherford and Bill French. (Dkt. Nos. 90, 91.) Their declarations primarily concern the inspections Defendant performed of anchoring components. (*See id.*) Defendant did not previously disclose its intent to rely on these witnesses to Plaintiff. (*See* Dkt. No. 95-1 at 4–7.) Weatherford and French are Defendant's employees, and it appears there is no justification for failing to timely identify these witnesses. This omission is not harmless because Plaintiff has repeatedly sought discovery of information on Defendant's inspections of anchoring

systems. Because the failure to disclose is neither substantially justified nor harmless, Defendants may not introduce these witnesses. *See* Fed. R. Civ. P. 37(c)(1). *Yeti by Molly, Ltd.*, 259 F.3d at 1106. Therefore, the Court GRANTS Plaintiff's request to strike the declarations of Stephen Weatherford and Bill French on this ground.

b. *Sham affidavit rule*

Under the "sham affidavit rule," a party cannot create an issue of fact with an affidavit contradicting prior statements that the party made under oath. *Yeager v. Bowlin*, 693 F.3d 1076, 1079–80 (9th Cir. 2012); *see Miller v. Glenn Miller Prods., Inc.*, 454 F.3d 975, 980 (9th Cir. 2006). The rule applies to "clear and unambiguous" contradictions that cannot be resolved with "a reasonable explanation." *Yeager*, 693 F.3d at 1080–81 (citing *Cleveland v. Policy Mgmt. Sys. Corp.*, 526 U.S. 795, 806–07 (1999)). However, the rule "should be applied with caution because it is in tension with the principle that the court is not to make credibility determinations when granting or denying summary judgment." *Id.* at 1080. "[T]he non-moving party is not precluded from elaborating upon, explaining or clarifying prior testimony elicited by opposing counsel on deposition; minor inconsistencies that result from an honest discrepancy, a mistake, or newly discovered evidence afford no basis for excluding an opposition affidavit. *Messick v. Horizon Indus. Inc.*, 62 F.3d 1227, 1231 (9th Cir. 1995).

Plaintiff requests to strike under the sham affidavit rule portions of declarations by James Parsons and Randy Hodgin that assert Defendant conducted mooring inspections for which records do not exist. (Dkt. No. 95 at 5.) Defendant designated Parsons as its representative for a 30(b)(6) deposition on the topics of Defendant's inspections of the net pen anchoring components, including how the inspections were documented. (*See* Dkt. No. 46-1 at 11, 21, 70.) At his deposition, Parsons stated that he was prepared to testify on these topics. (*See, e.g.*, Dkt. 46-1 at 70.) Parsons repeatedly testified that the information Plaintiff sought is contained in the

records.[2] (Dkt. No. 46-1 at 156–59, 178–79.) For example, in response to Plaintiff's inquiry as to the names of the divers who conducted mooring inspections of Cypress 1 in 2016, Parsons stated, "[i]t would have been any member of the dive team." (*Id.* at 156–57.) And when asked for the dates of when those inspections occurred, Parsons stated, "[t]hey would be available in the dive logs and daily records." (Dkt. No. 46-1 at 156–57.)

In its opposition to Plaintiff's motion to compel a second 30(b)(6) deposition, Defendant represented to the Court that, with respect to "specific details regarding the names, dates, and locations of routinely conducted mooring inspections. . . . [a]ll of the information sought by Plaintiff was contained in the tens of thousands of pages of business records produced to [Plaintiff] before deposition, and all of the information could have been obtained by [Plaintiff] simply by reviewing those documents."[3] (Dkt. No. 49 at 2.) Defendant stated that the records of "which [] employee conducted which inspection on which day at which site—were provided to Plaintiff many times in a variety of ways." (*Id.* at 3.)

The Court allowed Plaintiff to depose Defendant for one additional day. (Dkt. No. 66 at 6.) At that deposition, Parsons testified that it was likely that not all inspections were reflected in the records, (Dkt. No. 79-1 at 215), that just "[b]ecause the records may not exist doesn't mean that it wasn't done," (*id.* at 217), that the daily logs and dive logs are incomplete for Cypress, (*id.* at 220), that "we have good records that [inspections] were occurring at all of the other sites," (*id.* at 220), and that additional information could be obtained from current and former employees, (*e.g.*, *id.* at 132, 258). Thus, Defendant has changed its answer about its practice of recording mooring system inspections: while Defendant initially maintained that all such

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[2] In its order on Plaintiff's motion to compel, the Court evaluated Parson's responses at length and found them evasive. (*See* Dkt. No. 66 at 3–5.) The Court found this evasiveness, combined with Defendant's last-minute disclosure of over 30,000 documents days before deposition, frustrated Plaintiff's ability to develop testimony on the topic of mooring system inspections. (Dkt. No. 66 at 5–6.)

[3] A court has discretion to consider whether a statement of fact contained in a brief may be considered an admission *Am. Title Ins. Co. v. Lacelaw Corp.*, 861 F.2d 224, 227 (9th Cir. 1988).

information was in its records, Defendant now maintains that not all inspections were logged in the records, and further information can be obtained from its employees.

Plaintiff argues that Defendant's change in position amounts to a clear contradiction of its own sworn testimony that *all* of the information on mooring inspections is contained in the records. (Dkt. 95 at 5–6.) Defendant's misleading initial testimony frustrated Plaintiff's ability to develop testimony on the topic of mooring systems inspections. (Dkt. No. 66 at 5–6.) Defendant has not attempted to reconcile the difference in its initial position by explaining the discrepancy as an honest mistake or caused by newly discovered evidence.[4] (*See* Dkt. No. 87 at 19.) But Defendant's new position is arguably an elaboration or clarification of Defendant's prior evasive testimony. *See Messick*, 62 F.3d at 1231. Especially given the Ninth's Circuit caution to avoid credibility determinations at summary judgment, Defendant's discrepancy is not such a clear and unambiguous contradiction as to require striking Parsons's and Hodgin's declarations under the sham affidavit rule. *See Yeager*, 693 F.3d at 1080–81. Therefore, the Court DENIES Plaintiff's request to strike Parsons's and Hodgin's declarations.

c. *Parsons declaration and Defendant's interrogatory responses*

Plaintiff requests that the Court strike portions of the Parsons declaration that Plaintiff asserts lacks foundation and are based on hearsay. (Dkt. No. 95 at 6.) Plaintiff also requests the Court strike Defendant's interrogatory responses attached to the declaration of Douglas Steding. (*See id.* at 7.) The Court recognizes that assertions in conclusory, self-serving affidavits are insufficient, standing alone, to create a genuine issue of material fact. *Nilsson*, 503 F.3d at 952 n.2.

d. *Mott MacDonald Report*

Plaintiff requests that the Court strike the Mott MacDonald reports attached to James

[4] Instead, Defendant blames Plaintiff for failing to conduct fact witness depositions based on Defendant's roster of over 200 employees and its response to Interrogatory No. 5. (*See* Dkt. No. 87 at 19.)

Parsons's declaration. (Dkt. No. 95 at 6.) Plaintiff argues that these unsworn reports constitute inadmissible hearsay and that Parsons is not competent to testify as to the expert opinions the reports contain. (*Id.*) Plaintiff does not dispute the authenticity of these reports that Mott MacDonald prepared for DNR. (*See id.*) Indeed, Plaintiff appears to have submitted at least two of the same reports in support of its motions. (*Compare* Dkt. No. 79-2 at 81, 87, *with* Dkt. No. 94 at 25, 32.) Given the likelihood that the material in the reports could ultimately "be presented in a form that would be admissible in evidence" at trial, the Court declines to strike them. *See* Fed. R. Civ. P. 56(c)(2).

2. Implementation of Technology to Minimize Fish Escapement

Condition S7.1 of the permits requires that Defendant identify and implement technology that will minimize fish escapements. (Dkt. No. 29-2 at 12.) In its enforcement of NPDES permits, Ecology incorporates Washington's "AKART" standard, which requires "all known, available, and reasonable methods of treatment" to minimize water pollution. *See* Wash. Admin. Code § 173-220-130(1)(a); *see also Snohomish County v. Pollution Control Hearings Bd.*, 386 P.3d 1064, 1067 (Wash. 2016).

a. *Pre-suit notice of violation of Condition S7.1*

For district courts to have jurisdiction over CWA citizen suits, a plaintiff must provide notice to the alleged violator that contains "sufficient information to permit the recipient to identify the specific standard, limitation, or order alleged to have been violated," and "the activity alleged to constitute a violation." U.S.C. § 1365(b); 40 C.F.R. § 135.3(a). "The key language in the notice regulation is the phrase 'sufficient information to permit the recipient to identify' the alleged violations and bring itself into compliance." *Waterkeepers N. California v. AG Indus. Mfg., Inc.*, 375 F.3d 913, 916 (9th Cir. 2004) (citing *Cmty. Ass'n for Restoration of the Env't v. Henry Bosma Dairy*, 305 F.3d 943, 951 (9th Cir. 2002)).

Defendant contends that Plaintiff failed to provide notice regarding these claims because its notice letter did not cite NS9415 or specifically allege Plaintiff's contention that Defendant

needs to conduct further engineering analyses of the cages. (Dkt. No. 87 at 17.) Plaintiff's notice letter specifically lists Condition S7.1 and contains the language at issue for this claim. (Dkt. No. 1 at 25–26.) The letter alleged that Defendant violated permit requirements "at all eight of its Puget Sound net pen facilities by failing to identify and implement technology that will minimize fish escapements." (*Id.*) Thus, Defendant could have reasonably identified Plaintiff's claims that Defendant failed to implement technology to minimize fish escapes. Therefore, the Court FINDS that Plaintiff's notice letter provided reasonably specific notice to allow Defendant to identify the alleged violations under Condition S7.1.

b. *Technology necessary to evaluate suitability of salmon farms for their locations*

Plaintiff argues that the Washington's AKART standard for technology requires Defendant to reevaluate whether its salmon farm systems and configurations are suitable for the local environmental conditions at each site. (Dkt. No. 79 at 11–13.) Plaintiff relies on Dewhurst's opinion stating that since 2006, aquaculture standards including NS9415 have been available for conducting a current analysis to determine whether Defendant's net pen systems were suitable for those locations. (*Id.* at 12.) Plaintiff argues that following promulgation of the NS9415 standard, Defendant should have studied its equipment then in use and subsequently installed to determine whether it could withstand the local conditions. (*Id.* at 11–13.) Plaintiff argues Defendant's failure to conduct theses analyses violated Condition S7.1. (*Id.*)

Defendant argues that it has complied with Condition S7.1 by providing Release Prevention Plans that appropriately describe new cage systems as technology that has been or would be implemented. (Dkt. No. 87 at 12.) Defendant argues that it is standard industry practice to make suitability determinations at the time of installation or when making substantial changes to the facility, and thus the standard that Dewhurst cites, NS9415, should not come into play. (Dkt. No. 87 at 13.) It argues that AKART standards for technology are fully addressed during permit issuance. (*Id.* at 14.) Defendant contends that the relevant AKART standard is set forth in a different section of the Washington Administrative Code, § 173- 221A. (*Id.* at 15.) Finally,

Defendant contends that it would not be reasonable under the AKART standard to require replacement of the net pens prior to the end of their useful life. (*Id.*)

Thus, material issues of fact remain as whether Condition S7.1 requires Defendant to undertake a suitability analysis of its net pen systems. Therefore, Plaintiff's motion for summary judgment is DENIED on this ground.

c. *Improvement to net pen structures*

In Defendant's Release Prevention Plans, Defendant has identified improved cage systems to be implemented in the future. (Dkt. No. 29-2 at 136.) Plaintiff argues that these plans required Defendant to undertake replacement of existing net pens. (Dkt. No. 79 at 13–14.) Plaintiff further contends that the current net pens are at risk of failure because they do not comply with manufacturer recommendations and because there has not been adequate independent analysis of the suitability of the systems. (Dkt. No. 79 at 14.). Plaintiff relies on Dewhurst's expert opinions that conclude the systems are at risk of failure. (*Id.*)

Defendant does not contest that its Release Prevention Plans required it to implement new cage systems. (*See* Dkt. No. 87 at 15–17.) However, Defendant argues that its net pens are safe and are not at risk of failure. (*Id.*) Defendant relies on Dean Steinke's expert testimony that the manufacturer ratings are guidelines but do not indicate the true limits of the net pens. (*Id.* at 16–17.) Steinke asserts that the ratings lack detail and cannot be compared to NS9415 values. (Dkt. No. 92 at 4–8.) Steinke also argues that Dewhurst's calculations of drag force are flawed because they fail to account for net deflection that reduces projected surface area. (*Id.*)

Thus, material issues of fact remain as whether Defendant's net pen structures violate Condition S7.1. Therefore, Plaintiff's motion for summary judgment is DENIED on this ground.

3. Annual Inspection of Anchoring Components

Condition S6.F of Defendant's NPDES permit requires the preparation and implementation of a Pollution Prevention Plan that provides for at least annual inspections of the anchoring components above and below the water line. (*See* Dkt. 44 at 19–20.) Plaintiff argues

that Defendant has violated this requirement by failing to annually inspect all underwater mooring components, and Plaintiff further argues that Defendant's violations of this requirement are ongoing because they have recurred since the complaint was filed. (*See* Dkt. No. 79 at 17.)

a. *Cypress Sites 1 and 3 (2013–2016)*

Altogether, Defendant's Cypress sites had a total of 71 anchor lines: Cypress 1 has 25 lines, Cypress 2 had 19 lines, and Cypress 3 has 27 anchoring lines. (Dkt. No. 46-1 at 147, 163, 173.) Defendant's records indicate that in 2013, one dive may have inspected two or three anchor lines and seven additional dives might have involved work on up to 14 anchor lines. (*Id.* at 251–53.) In 2014, one dive may have involved an inspection of a Cypress anchor line, and four dives may have involved work on up to eight Cypress anchor lines. (*Id.* at 236–39.) In 2015, Defendant performed work on two anchor chains at Cypress 2 and three anchor chains at Cypress 3, and some surface inspections occurred. (*Id.* at 223–25, 232.) In 2016, records show Defendant may have inspected the uppermost chain components plus one anchor chain. (Dkt. No. 79-1 at 193, 198–200, 211–13.) Thus, Plaintiff has made a showing that Defendant made spotty inspections of its mooring systems and thus failed to complete the required annual inspections of the 25 mooring lines at Cypress 1 and 27 mooring lines at Cypress 3 in 2013, 2014, 2015, and 2016.

In opposition to Plaintiff's motion, Defendant does not point to a single additional record to demonstrate that it conducted a below-water inspection of these mooring systems. (*See* Dkt. No. 87 at 20–21.) Defendant relies instead on its responses to Interrogatory Topic No. 5 and the Rule 30(b)(6) deposition of Defendant in which Parsons testified. (*Id.* at 18–20.) In the responses and deposition, Defendant stated that it conducted the required annual inspections. (*See* Dkt. Nos. 93 at 24–26, 94 at 301–320.) But self-serving declarations not based upon personal knowledge are insufficient to demonstrate a factual dispute. *Nilsson*, 503 F.3d at 952 n.2.

Parsons testified that he was prepared to testify as to record-keeping practices and that all inspections were in the records. (Dkt. No. 46-1 at 70, 156–59, 178–78.) Parsons later testified at his second deposition that the absence of an inspection record does not necessarily mean that an

inspection did not occur. (Dkt. No. 79-1 at 217.) Defendant has admitted that the records collected in response to Interrogatory No. 5 "mostly only tangentially contained evidence of anchor inspections." (Dkt. No. 87 at 20.) Defendant now argues that "the absence of a non-mandatory record does not entitle [Plaintiff] to an inference that the inspections did not occur." (*Id.* at 17.)

On a summary judgment motion, credibility determinations are not appropriate, and a court must draw all justifiable inferences in the light most favorable to the nonmoving party. *See Liberty Lobby*, 477 U.S. at 255. A reasonable trier of fact could infer that the absence of non-mandatory anchor inspection records does not prove that Defendant failed to make the anchor inspections. Thus, material issues of fact remain as to whether anchor inspections occurred at Cypress 1 and 3 between 2013 and 2016. Therefore, Plaintiff's motion for summary judgment is DENIED on this ground.

b. *Anchoring components deeper than 100 feet*

Five of Defendant's sites have mooring components deeper than 100 feet: Orchard Rocks, Clam Bay, Port Angeles, and Cypress 1 and 3. (Dkt. No. 46-1 at 68, 110–11, 136, 147, 173.) The Permits unambiguously require inspections of the entire mooring components, not only those above 100 feet. (Dkt. 29-2 at 11.) Defendant's employees may not dive deeper than 100 feet. (*See* Dkt. No. 25-1 at 63.) Until 2017, Defendant conducted visual inspections only of the shallower components of these systems, but Defendant contends that it "inspected" the deeper components by examining the condition of the shallower components and by checking line tension or pulling up anchors. (*See* Dkt No. 46-1 at 61, 87 at 22, 89 at 2–3.) Ecology concluded that this form of examination does not meet permit requirements for "inspection." (Dkt. No. 52-1 at 163–64.)

A court shall interpret an NPDES permit like any other contract. *Nat. Res. Def. Council, Inc. v. County of Los Angeles*, 725 F.3d 1194, 1204–05 (9th Cir. 2013). If the language is plain, the court construes its meaning. *Id.* If the language is ambiguous, the court "may turn to extrinsic

evidence to interpret its terms." *Id.* As the agency charged with enforcing NPDES permits, Ecology's interpretation of the ambiguous term "inspection" is entitled to substantial deference. *See Russian River Watershed Prot. Comm. v. City of Santa Rosa*, 142 F.3d 1136, 1141 (9th Cir. 1998) (holding that the district court properly deferred to the agency authorized to enforce NPDES permits); *Nat. Res. Def. Council, Inc.*, 725 F.3d at 1205. Thus, Plaintiff has shown that Defendant violated the permits by not inspecting mooring components deeper than 100 feet at Orchard Rocks, Clam Bay, Port Angeles, and Cypress 1 and 3 in 2012, 2013, 2014, 2015, and 2016. Therefore, Plaintiff's motion for summary judgment is GRANTED on this ground.

c. *Cypress 1 and 3 (2018) and Port Angeles (2017)*

Defendant's Pollution Prevention Plan that went into effect in October 2017 required it to use either a contracted dive service or a remotely operated vehicle to conduct inspections of its moorings below the employee diver depth limit of 100 feet. (Dkt. No. 29-2 at 11, 131.) The plan further required Defendant to document its visual inspection of each anchoring line and identify maintenance concerns. (*Id.* at 131, 134.) The permits require Defendant to operate its facilities in accordance with the plan. (*E.g.*, *id.* at 11.)

As part of DNR's investigation of Defendant following the collapse of Cypress 2, DNR hired Mott MacDonald and its subcontractor Collins Engineers. (Dkt. No. 79-2 at 631–34.) Mott MacDonald evaluated Cypress 1 and 3 in 2018 and Port Angeles in 2017. Defendant relies on the inspections that Mott MacDonald performed to fulfill its anchor inspection requirements for Cypress 1 and 3 in 2018 and Port Angeles in 2017. (Dkt. Nos. 46-1 at 333–34, 89 at 24–25.)

But the report was prepared for use by DNR and other state agencies; it was "limited in scope" and "[d]etailed inspection and physical material sampling were not performed," and the report did not make repair or maintenance recommendations. (Dkt. No. 79-2 at 632.) Defendant reviewed the report's conclusion but did not undertake additional steps to determine whether maintenance work was needed. (*See* Dkt. No. 79-2 at 147–53.) Parsons testified that Defendant's employees did inspect the mooring systems at Port Angeles in 2017, but he admits that the

mooring lines and anchors were not inspected below 100 feet. (*See* Dkt. No. 79-1 at 185–90.) Thus, Plaintiff has demonstrated that Defendant violated the permits by failing to inspect mooring components at Cypress 1 and 3 in 2018 and at Port Angeles in 2017 in the manner required by the permits and the October 2017 Pollution Prevention Plan. Therefore, Plaintiff's motion for summary judgment is GRANTED on this ground.

d. *Completion of inspection forms (2017–2018)*

Defendant's October 2017 Pollution Prevention Plan also required it to complete an Annual Below Surface Visual Inspection form "to record the condition of the mooring components and identify specific maintenance concerns." (Dkt. 29-2 at 131–32, 134.) The form requires a detailed assessment of the mooring system, including an assessment of (1) each component of each mooring line, (2) whether routine or immediate repairs are needed, (3) the dates when repairs were identified and completed, (4) a description of the repair, (5) the name of the person completing the repair, (6) the name of the person completing the inspection form, and (6) the date the form was completed. (*Id.* at 134.) As mentioned above, the permits require Defendant to operate in accordance with the plan. (*E.g.*, Dkt. 29-2 at 11.)

It is undisputed that Defendant completed the form for its Hope Island site in 2017 and 2018. (*See* Dkt. Nos. 79 at 25, 79-1 at 142–45, 274–77.) It is likewise undisputed that Defendant failed to complete the form for the remainder of its sites. (*See generally* Dkt. Nos. 79, 87, 95.)[5] Under the Clean Water Act, Defendant is strictly liable for failure to use the required form. *See Sierra Club v. Union Oil of Cal.*, 813 F.2d 1480, 1490–91 (9th Cir. 1987). Thus, Plaintiff has demonstrated that Defendant violated the permits by failing to complete the required Annual Below Surface Visual Inspection forms for Cypress 1 and 3, Port Angeles, Orchard Rocks, Fort Ward, and Clam Bay in 2017 and 2018. Therefore, Plaintiff's motion for summary judgment is

[5] Defendant observes that the Court has already found that the 2017 Pollution Prevention Plans were deficient, (Dkt. No. 68), and suggests that "if any violation exists here, it is at most a failure to implement a plan that the Court already has determined was insufficient." (Dkt. No. 87.)

GRANTED on this ground.

4. Reporting of Fish Escapement and Tracking Fish Numbers

The permits require Defendant provide in its Release Prevention Plan "[p]rocedures for routinely tracking the number of fish within the pens, the number of fish lost due to predation and mortality, and the number of fish lost due to escapement." (Dkt. No. 29-2 at 12.) The permits further require Defendant to submit an Annual Fish Release Report by January 30 of each year, which "must include, to the extent possible, all fish released or escaped to state waters, including all Significant Fish Releases (see S8)." (*Id*. at 12.) Condition S8 defines a release as "significant" when it involves "1,500 or more fish whose average weight exceeds 1 kilogram (kg) or 3,000 or more fish whose average weight is equal to or less than 1 kg." (*Id.* at 13.) Such releases must be reported within 24 hours. (*Id.*) Thus, the permits require immediate reporting of significant fish escapes and annual reporting of all fish escapes. (*Id.* at 12–13.)

Defendant tracks its fish using a software program called FishTalk. (Dkt. No. 79-1 at 428–29.) First, Defendant uses electronic counters to count the number of fish it places into trucks for transport to its pens. (*Id.* at 296–97, 431.) Then Defendant assumes (without verification) a loss during transport of five percent and enters this revised number into FishTalk. (*Id.* at 297–98, 315.) While fish are rearing in the pens, there may be further losses through mortality or removal for other reasons; Defendant states that these are entered into FishTalk. (*Id.* at 300–01, 429.) Finally, Defendant counts the fish with electronic counters again when they are harvested. (*Id.* at 306–07.) Defendant states that its electronic counters are accurate to plus or minus two percent. (*Id.* at 297, 307.)

Defendant has represented in its Annual Fish Release Reports that it has lost no fish through escapement. (Dkt. No. 79-2 at 584, 589, 593, 597, 601, 604, 609.) From 2012 to 2015, Defendant reported that there were no "significant" fish escapes. (*Id.* at 585, 589, 593, 597.) In the subsequent years, Defendant reported that there were no fish escapes. (*Id.* 601, 604, 609.) However, Defendant's data shows that there have been downward variations every year between

the number of fish it puts in its pens and the number of fish it removes and harvests. (*See id.* at 615–28.) The parties disagree as to whether this data shows that Defendant failed to report fish escapes or whether these discrepancies are within an acceptable range of error.

Plaintiff argues that Defendant's fish inventory data should be evaluated based on variations within each individual pen. (Dkt. No. 79 at 27–29, 95 at 16.) This analysis shows that there were negative deviations of more than four percent and up to 17 percent in numerous pens (called "Units" in the data), including Unit 111 at Cypress 1 in January 2016; Unit F12 at Fort Ward in May 2016, Unit R08 at Orchard Rocks in June 2016, Unit 10 at Hope Island in August 2016, Unit 06 at Port Angeles in December 2016, Units 121 and 124 at Cypress 1 in January 2018, and Units 315 and 324 at Cypress 3 in January 2018. (*See* Dkt. No. 79-2 at 619–25.) Plaintiff contends that because these deviations in 2016 and 2018 were too large to explain by a four percent margin of error, Defendant violated the requirement to report fish escapements. (Dkt. No. 79 at 29.)

In contrast, Defendant argues that its fish inventory data should be evaluated based on variations within each facility, not each pen. (Dkt. Nos. 26–27.) In support of this argument, Defendant points to its expert report by Cormac O'Sullivan. (*Id.*) O'Sullivan states that it is standard industry practice to "look at the entire farm, not the individual pens." (Dkt. No. 88 at 6.) O'Sullivan calculates that, across all eight farms, there was an average site variance of -2.65 percent, which is below the Best Aquaculture Practices Standards ("BAP") of three percent for accuracy of inventory tracking. (*Id.*) O'Sullivan therefore concludes that there is "no indication" of either "large escape events from *any* of the sites or leakage from the sites." (*Id.* at 5–6.) Additionally, O'Sullivan applies the BAP standard to conclude that Defendant's fish tracking practices generally comply with best practices for accurate tracking. (Dkt. No. 88 at 4.)

The language of the NPDES permit is plain that Defendant must report all fish escapes "to the extent possible." It was possible for Defendant to identify in its data that there were downward variations that exceeded three percent per pen in 2016 and 2018. (*See* Dkt. No. 79-2

at 615–28.) Extrinsic evidence of industry standards does not alter the plain meaning of the permit. *Nat. Res. Def. Council*, 725 F.3d at 1204–05. Because the permits also require accurate fish tracking, Defendant cannot avoid this requirement by arguing that human error explains the variation. A failure to accurately track is likewise a violation of the permits. (Dkt. No. 29-2 at 12.) Furthermore, in the years 2012–2015, Defendant reported only whether there were "significant releases." (*See* Dkt. No. 79-1 at 585, 589, 593, 597.) This violates the Permits' requirement to report "all fish releases or escaped," and not only "significant" releases. (*E.g.*, Dkt. No. 29-2 at 12.) Thus, Plaintiff has demonstrated that in 2012–2015, 2016 and 2018, Defendant violated the permit requirement to track the number of fish in its net pens and report all fish escapements. Therefore, Plaintiff's motion for summary judgment is GRANTED on this ground.

D. Defendant's Motion for Partial Summary Judgment

Defendant moves for partial summary judgment on Plaintiff's claims relating to Defendant's Cypress 2 facility, arguing that the S1 claims are barred by *res judicata* and all the Cypress 2 claims are moot. (*See* Dkt. No. 84 at 5.)

1. *Res Judicata and Plaintiff's S1 Claims*

"Congress is understood to legislate against a background of common-law adjudicatory principles." *Astoria Fed. Sav. & Loan Ass'n v. Solimino*, 501 U.S. 104, 108 (1991). The common-law principle of *res judicata*, also known as claim preclusion, is generally presumed to apply to administrative decisions. *See Littlejohn v. United States*, 321 F.3d 915, 921–22 (9th Cir. 2003). Courts, however, do not "have free rein to impose rules of preclusion, as a matter of policy, when the interpretation of a statute is at hand." *Astoria*, 501 U.S. at 108. When "a statutory purpose to the contrary is evident," then the statutory claim preclusion bar applies instead of common law *res judicata*. *See id.*; *Littlejohn*, 321 F.3d at 921–22.

In its 1987 amendments to the Clean Water Act, Congress added a provision that specifies when claims for civil penalties are precluded by state or federal enforcement actions.

See 33 U.S.C. § 1319(g)(6)(A). Claims for civil penalties are barred for any violation

> (i) with respect to which the Administrator or the Secretary has commenced and is diligently prosecuting an action under this subsection,
> (ii) with respect to which a State has commenced and is diligently prosecuting an action under a State law comparable to this subsection, or
> (iii) for which the Administrator, the Secretary, or the State has issued a final order not subject to further judicial review and the violator has paid a penalty assessed under this subsection, or such comparable State law

See 33 U.S.C. § 1319(g)(6)(A).

At the same time, Congress created an exception to the statutory bar for citizen suits in which the plaintiffs, prior to the enforcement action, either (1) filed suit or (2) provided notice to the Environmental Protection Agency or to the state with respect to the alleged violation. *See* 33 U.S.C. § 1319(g)(6)(B); *Black Warrior Riverkeeper, Inc. v. Cherokee Mining, LLC*, 548 F.3d 986, 991 (11th Cir. 2008) (holding that the prior-filed citizen suit exception to the civil penalties bar applies in both state and federal enforcement actions); *Thiebaut v. Colo. Springs Utils.*, 2007 WL 2491853 at *5 (D. Colo. Aug. 29, 2007) (concluding that the prior-commenced exception limits the applicability of *res judicata*), *aff'd*, 455 F. App'x 795 (10th Cir. 2011). Congress's intent to create an exception to the statutory bar is evident in § 1319(g)(6) of the Clean Water Act; for that reason, there is no "legislative default" to common-law claim preclusion principles. *See Astoria*, 501 U.S. at 110. By creating this exception, "Congress reiterated its commitment to citizen suits, which a Senate Report described as 'a proven enforcement tool.'" *Black Warrior Riverkeeper, Inc.*, 548 F.3d at 988 (quoting the legislative record). The Clean Water Act thus alters the ordinary *res judicata* rule to allow a prior-commenced citizen suit to pursue a claim for civil penalties, even after a federal or state enforcement action related to the same violation has been resolved. *See id.*

This prior-commenced exception for citizen suits applies here.[6] On August 24, 2017,

[6] In a prior order, the Court found that the only Clean Water Act statutory bar to citizen suits that "could conceivably apply" to Ecology's enforcement action is § 1319(g)(6)(A)(iii), which bars citizen suits in which a state agency has issued a final order under the Clean Water Act, or comparable state law, and the violator has paid the penalty assessed. (*See* Dkt. No. 76 at 19.)

Plaintiff notified the EPA and Ecology of its intent to sue Defendant, and Plaintiff provided a supplemental notice letter on September 6, 2017. (Dkt. No. 1 at 22, 30.) On November 13, 2017, Plaintiff filed its complaint against Defendant asserting several CWA violations related to the Cypress 2 collapse and violations at Defendant's seven other Puget Sound net-pen facilities. (*See* Dkt. No. 1.) Ecology issued its notice of penalty on January 30, 2018. (Dkt. No. 52-1 at 160–66.) On April 24, 2019, Defendant and Ecology entered into a consent decree regarding the Cypress 2 collapse, and on April 25, 2019, the Pollution Control Board, pursuant to the consent decree, dismissed Defendant's appeal of Ecology's administrative penalty. (*See* Dkt. No. 74-1 at 4–11, 18.) Because Plaintiff commenced its action before Ecology, the entry of the consent decree between Defendant and Ecology cannot preclude its enforcement action. *See* 33 U.S.C. § 1319(g)(6)(A)–(B).

Defendant argues that, notwithstanding § 1319(g)(6), the common-law principle of *res judicata* precludes Plaintiff's S1 claims because there is a final order in Ecology's state enforcement action on the identical CWA violations. (*See* Dkt. No. 103 at 2–4.) Defendant relies on a pre-*Astoria* case in which the Ninth Circuit concluded that the 1972 amendments to the Clean Water Act did not modify "the normal rules of preclusion." (Dkt. No. 103 at 4 (citing *United States v. IIT Rayonier, Inc.*, 627 F.2d 996 (9th Cir. 1980).) But *IIT Rayonier* did not interpret Congress's 1984 amendments to the Clean Water Act, nor did it apply the principles that the Supreme Court announced in *Astoria*. *See IIT Rayonier, Inc.*, 627 F.2d at 1000–02. Defendant also argues that a Ninth Circuit case involving a class action of sport fishers alleging state law violations demonstrates that § 1319(g)(6) did not alter normal claim preclusion rules. (*See* Dkt. No. 103 at 11 (citing *Alaska Sport Fishing Ass'n v. Exxon Corp.*, 34 F.3d 769 (9th Cir. 1994).) But the parties in that case did not argue, and the court of appeals did not consider, that § 1319(g)(6) created a specific statutory preclusion rule for citizen suits. *See Alaska Sport Fishing Ass'n.*, 34 F.3d at 773–74.

Defendant's interpretation would render meaningless the prior-commenced citizen suit

exception. "If the statutory language is plain, [a court] must enforce it according to its terms." *See King v. Burwell*, 135 S. Ct. 2480, 2489 (2015). Accordingly, the Court begins and ends its analysis with the plain language of the statute, which clearly permits prior-commenced citizen suits to proceed notwithstanding a final order in a state-initiated administrative enforcement proceeding. *See Burwell*, 135 S. Ct. at 2489. Thus, Plaintiff's S1 claims are not barred by *res judicata*, and Defendant's motion for partial summary judgment is DENIED on this ground.

2. Mootness

To establish mootness, a defendant must show that the district court cannot order any effective relief. *See City of Erie v. Pap's A.M.*, 529 U.S. 277, 287 (2000); *Sierra Club*, 853 F.2d at 669) ("The burden of proving that the case is moot is on the defendant."). The cessation of illegal conduct following the commencement of a suit "ordinarily does not suffice to moot a case" because civil penalties still serve as a deterrent to future violations. *Friends of the Earth v. Laidlaw*, 528 U.S. 167, 193 (2000) (holding that a citizen suit was not moot where the polluting facility at issue had been "permanently closed, dismantled, and put up for sale, and all discharges from the facility had permanently ceased."). "Only when it is 'absolutely clear that the allegedly wrongful behavior could not reasonably be expected to recur' will events following the commencement of a suit moot a claim for civil penalties." *San Francisco BayKeeper, Inc. v. Tosco Corp.*, 309 F.3d 1153, 1160 (9th Cir. 2002) (quoting *Laidlaw*, 528 U.S. at 189). This is because civil penalties under the Clean Water Act serve "to deter future violations and thereby redress the injuries that prompted a citizen suitor to commence litigation." *Laidlaw*, 528 U.S. at 174. The deterrent effect of civil penalties is no less potent when the defendant no longer operates or owns the polluting facility. *See San Francisco BayKeeper*, 309 F.3d at 1160. "Allowing polluters to escape liability for civil penalties for their past violations by selling their polluting assets would undermine the enforcement mechanisms established by the Clean Water Act." *Id.*

Here, Defendant argues that Plaintiff's claim for civil penalties for violations at Cypress 2

should be dismissed as moot. (Dkt. No. 84 at 17.)[7] Cypress 2 was destroyed and is no longer operational. (*See* Dkt. Nos. 29-2 at 210–212, 43 at 3.) Ecology completed its closure monitoring of the site, and Defendant has represented that the Cypress 2 permit has been terminated as of September 28, 2019. (*See* Dkt. No. 86 at 6.) But in its previous order, the Court found that it could still provide Plaintiff effective relief in the form of civil penalties because it was not absolutely clear whether the site could be rebuilt and because Defendant continued to operate its other seven net-pen facilities in Puget Sound under identical permits. (*See* Dkt. No. 76 at 16.) Now, it seems clear that Cypress 2 is permanently closed, but Defendant continues its operations in Puget Sound. Thus, civil penalties still serve to deter future Clean Water Act violations. *See Laidlaw*, 528 U.S. at 193; *San Francisco BayKeeper*, 309 F.3d at 1160. Therefore, Defendant's motion for partial summary judgment in DENIED on this ground.

III. CONCLUSION

For the foregoing reasons, Defendant's motion to exclude expert opinions (Dkt. No. 82) is DENIED. Plaintiff's motion for partial summary judgment (Dkt. No. 79) GRANTED in part and DENIED in part as follows:

1. Plaintiff's request to strike the declarations of Stephen Weatherford and Bill French is GRANTED, and Plaintiff's request to strike Parsons's and Hodgin's declarations is DENIED;
2. Plaintiff's motion for summary judgment its Condition S7.1 claim is DENIED;
3. Plaintiff's motion for summary judgment on its S6.F claim is:
    a. DENIED as to Cypress 1 and 3 between 2013 and 2016,
    b. GRANTED as to inspections of anchoring components deeper than 100 feet at Orchard Rocks, Clam Bay, Port Angeles, and Cypress 1 and 3 in 2012, 2013, 2014, 2015, and 2016. 2012 to 2016;

[7] The Court previously dismissed as moot Plaintiff's claims for injunctive relief at Cypress 2. (Dkt. No. 76 at 15.)

c. GRANTED as to Cypress Island Sites 1 and 3 (2018) and Port Angeles (2017); and

d. GRANTED as to completion of the Annual Below Surface Visual Inspection forms for Cypress Island Sites 1 and 3, Port Angeles, Orchard Rocks, Fort Ward, and Clam Bay in 2017 and 2018.

4. Plaintiff's motion for summary judgment is GRANTED as to its claim that in 2012–2015, 2016 and 2018, Defendant violated the permit requirement to report all fish escapements and track the number of fish in its net pens.

Defendant's motion for partial summary judgment (Dkt. No. 84) is DENIED.

DATED this 25th day of November 2019.

John C. Coughenour
UNITED STATES DISTRICT JUDGE