

Rich Passage Estates Homeowners' Association
PO Box 11683
Bainbridge Island, WA 98110

Dear Ms. Niewolny,

Please accept the following public comments from the Rich Passage Estates Homeowners' Association located on Bainbridge Island, Washington related to the Department of Ecology's announcement of permit modifications related to Cooke Aquaculture's application to raise all-female, triploid steelhead in its net pens on Bainbridge and Hope Island. The goal of the Department of Ecology should be to solicit public comment that will aid in the development of a robust NPDES permit that will ensure that a potential net pen operator is in compliance with maintaining water quality standards at the highest level.

Troubling, is the notion of forging ahead with this public comment during a global pandemic and constrained opportunities for public input. This net pen modification should include opportunities for public meetings when considered safe under Governor Inslee's Stay Home, Stay Healthy order. Ecology is the same agency that spanned 20+ months from the expiration of the last NPDES, October 26, 2017, to the issuance of the current permit on July 11, 2019 surrounding the Cypress Island disaster. There, Ecology provided several public comment opportunities in the communities where net pens operate. There is no urgency to populate Puget Sound net pens with Steelhead while the net pen operator has the necessary permits in place to continue farming Atlantic salmon for the near term. Further, there is no rush to proceed with the issuance of modifications to the NPDES permits until a determination has taken place related to lawsuits against the Washington Department of Fish and Wildlife brought by environmental groups.

As some of the closest neighbors to a Cooke facility, we are conveying concerns surrounding the lack of available updated science, resistance by Ecology to modify certain aspects of the permit conditions in the last NPDES permit, the company's failure to fully incorporate the lessons learned from the Cypress Island net pen disaster, issues related to transparency, and Cooke's appalling record in Washington State and elsewhere.

Updated permits issued in July 2019 incorporate lessons learned from the net pen failure

Lessons learned from the net pen collapse at a Cooke Cypress Island site in August 2017 and the investigation are reflected in the updated permits issued in July 2019. To protect Washington waters as much as possible, additional protective measures in the permits include:

- *Increasing underwater video monitoring of net pens*
- *Conducting inspections to assess structural integrity of the net pens and submit inspection reports certified by a qualified marine engineer to Ecology*
- *Improving net cleaning and maintenance procedures to prevent biofouling and fish escape*
- *Requiring the permittee to develop site specific response plans in the event of a fish release, and to conduct and participate in preparedness trainings*
- *Requiring improved maintenance of the net pens*
- *Maintaining contact information to notify area tribes in the event of a fish release*

Updated Science-Based Approach

Commenters on both sides of the proposal to modify the NPDES permit have recommended a science-based approach to decision making. Science is objective. It is not political.

The reality here is that the risks and guidance to mitigate the impacts are based on decades old science and outdated assumptions. The passage below is from the Department of Ecology fact sheet for NPDES permits and states that the conclusions from NOAA, which drive much of the guidance, are based on three major assumptions which may no longer be valid:

In 1990, at the direction of the Legislature, WDFW published a programmatic environmental impact statement of net pen aquaculture (Parametrix 1990). Risk to native fish by Atlantic salmon was determined to be low.

In 2002, NMFS published its review (Waknitz et. al 2002, NOAA Tech. Memo NMFS-NWFSC-53) of the impacts Atlantic salmon net pen aquaculture would pose to Puget Sound Chinook and Hood Canal summer-run chum salmon. This was done because the two native species were listed as threatened under the ESA in 1999.

Their conclusions were caveated with three major assumptions: 1) the industry remains near the current size at the time of the assessment (2002), 2) the net pens only reared Atlantic salmon, and 3) no new Atlantic salmon stocks than already are present be farmed in the net pens.

The NMFS concluded there were no serious or moderate risks posed by the Atlantic salmon net pen industry to native fish. Their findings included that there was one element with no risk, some with low risk, and some with little risk.

There was no risk of adverse genetic interaction from transgenic salmon because there are currently no transgenic salmon being commercially cultured. Transgenic fish, as defined in WAC 220-370-100, are not permitted (the regulatory authority being WDFW) to be used in Washington State.

After Cooke purchased assets from Icicle Seafood in 2016, they attempted to increase the limit on the size of net pen acreage by 150% in Rich Passage. Cooke has had an industry pattern of growth through acquisition and expansion which is counter to assumption number 1. From the Cooke story on their website: *“In recent years, we have embarked on an aggressive plan for growth, including acquisitions and an ongoing strategic search for development opportunities.”*

Steelhead have never been raised in salt water net pens on this scale in Washington State or elsewhere. Cooke has provided no evidence that they have experience in raising steelhead which is not consistent with assumptions 2 and 3.

The raising of Rainbow Trout and Steelhead in fresh water commercial applications has a long history of problem free operation. The risks for fresh water and marine water are different as are the mitigations to reduce risk. The following excerpt provides some relevant information on the U.S. Trout Industry as a whole. The U.S. Trout industry appears to use environmentally sustainable and responsible means in **fresh water**.
https://en.wikipedia.org/wiki/Rainbow_trout

*“Rainbow trout are commercially farmed in many countries throughout the world. The practice began in the late 19th century,[45] and since the 1950s commercial production has grown dramatically.[46] Worldwide, in 2007, 604,695 tonnes (595,145 long tons; 666,562 short tons) of farmed rainbow trout were harvested with a value of about US\$2.6 billion.[46] The largest producer is Chile. In Chile and Norway, sea cage production of steelhead has expanded to supply export markets. Inland production of rainbow trout to supply domestic markets has increased in countries such as Italy, France, Germany, Denmark and Spain. Other significant trout-producing countries include the U.S., Iran, the United Kingdom,[46] and Lesotho.[47] **While the U.S. rainbow trout industry as a whole is viewed as ecologically responsible,[48] trout raised elsewhere are not necessarily farmed with the same methods.[45]***

About three-quarters of U.S. production comes from Idaho, particularly the Snake River area,[45] due in part to the quality and temperature of the water available there.[49] California and Washington also produce significant numbers of farmed trout. In the east, Pennsylvania, North Carolina and West Virginia have

*farming operations.[45][50] Rainbow trout farming is one of the largest finfish aquaculture industries in the U.S.[45] **They are raised inland in facilities where raceways or ponds have continuously flowing water with little pollution and a low risk of escape.** The U.S. industry is noted for using best management practices.[48] Imports constitute only about 15 percent of farmed rainbows sold in the U.S., and nearly all domestic production is consumed within the country; very little is exported. The U.S. produces about 7 percent of the world's farmed trout.[45] Rainbow trout, especially those raised in farms and hatcheries, are susceptible to enteric redmouth disease. A considerable amount of research has been conducted on redmouth disease, given its serious implications for rainbow trout farming. The disease does not infect humans.[51]"*

With respect to Steelhead, or Rainbow Trout raised in saltwater, the U.S industry has not employed responsible measures. Per the Seafood Watch (Seafood Watch U.S. Farmed Trout March 28, 2006)

Rainbow trout is also marketed as 'steelhead or 'steelhead trout'. US farmed steelhead trout is raised in the same manner as farmed rainbow trout and therefore, is also included in this recommendation. A relatively small amount of farmed rainbow trout is also imported, however, production techniques for imported trout can be significantly different from the domestic production techniques. Imported farmed trout can be raised in saltwater net pens, which release waste directly in the ocean. Due to differences in production method, imported farmed trout are not included in this recommendation.

Similarly, the use of triploid Rainbow Trout by State Agencies for recreational purposes is consistent with State Goals related for the use of public waters. While controversial from angler's perspectives, there is a balance to catch large fish versus species preservation. Note, the program of using triploid rainbow trout in lakes and streams for recreational purposes in Washington was discontinued in 2017.

Unfortunately, for the second year in a row no triploid rainbows are being released due to state budget constraints. These popular fish are known as eating machines and really provided a boost to the trout fishery with their novelty. In the past they were purchased from an outside vendor. (Seattle Times March 26, 2019 Andy Walgamott)

Fresh-water rainbow trout/Steelhead are not the same as a large-scale first-time experiment in a marine environment that Cooke is now proposing. Cooke cited the following study in their annotated bibliography (Carasco et al 1998).

"In spite of the growing commercial use of triploids, their reproductive development remains poorly understood. Evidence to date indicates that the reproductive effects of induced triploidy vary in different fish species and between the sexes, from complete or partial sterility to functional reproduction."

While the use of induced triploidy in Rainbow Trout has been common, there has been limited **adoption** by the aquaculture industry with respect to marine salmonids. Below is an abstract from a researcher at the University of New Brunswick.

"The concept of using induced triploidy as a means of providing sterile fish for aquaculture and fisheries management is not new, having been first suggested over 30 years ago. Triploid Atlantic salmon were first produced almost 25 years ago, and they have been evaluated in the European, North American and Australian aquaculture industries. Through this work it has been demonstrated that it is easy to mass produce triploid salmon and that, when combined with simple and proven methods for producing all- female populations, triploidy is highly effective at suppressing gonadal development in Atlantic salmon. However, aside from Tasmania, there is currently no use of triploid Atlantic salmon in commercial aquaculture. This paper will review the development of triploidy as a management tool and outline some of the limitations of

triploid performance that have influenced the decisions of industry not to adopt this technology. Finally, suggestions will be made for how to approach genetic and husbandry improvements to enhance the potential of triploid Atlantic salmon in commercial culture.” (Tillmann J. Benfey, Triploid Atlantic salmon: current status and future prospects, 2009)

Previous owners and Cooke never acted on using Sterile Same Sex fish in the 30 years of operation.

This only became critical when the public and State Legislators sent a strong message limiting their future operations. Absent the passage of State Law, Cooke might still not be considering farming sterile monosexual fish of any species. When researching Triploid Salmonids online, a significant number of the research articles only address the commercial aspects such as growth rates, efficiency, and the potential for aquaculture. Very little information is available about issues of verification, adaptive to feeding, and dispersion from escapes. Most research on Steelhead was related to freshwater and almost none was focused on Marine environments. Even in the research cited by Cooke in their application, there is non-conclusive evidence plus a conclusion that more research needs to be done.

Nowhere in Cooke’s SEPA Checklist does Cooke state that they have had any experience farming sterile female Atlantic salmon or Steelhead on the scale that they are proposing in marine waters or dealing with the residual risks associated with triploid fish. This appears to be their first experiment for their global company. Washington State waters should not be used as a commercial aquaculture experiment.

“What Cooke is proposing right now is something that isn’t done in Washington, which is to raise the species in marine net pens for the entire duration of their grow out,” says Warheit. “No one is doing that in marine waters.” (Ken Warheit-- WDFW, From Crosscut, August 5, 2019)

To date the only experiments that we know of in the United States related to raising ocean steelhead in sea cages are the following: The University of New Hampshire and Maine have focused on the viability of raising steelhead in small sea cages that contain 2,000 fish in order to help commercial fisherman supplement their income. The focus has not been on either the effects of triploidy or environmental impacts but on commercial techniques to produce marketable fish.

“Chambers says Maine’s long, protected coastline offers many feasible spots to set up steelhead trout farms. Additionally, Chamber’s team hopes to develop submergible systems that could be sited farther offshore and be pushed under the surface of the water in the face of bad storms that otherwise could toss the pens around, damage them and potentially allow the trout to escape into the sea. If do they get out, they could cross-breed with wild fish, but proponents argue these fish have been stocked in lakes and river here for almost 60 years, and some have made their way to the ocean of their own accord without wreaking havoc. Another objection often heard to ocean-farmed fish is that they can pass diseases on to surrounding wild fish, but this IMTA approach helps keep diseases down, Chambers says. He also made it clear these pens are intended for small-scale farming, not for industrial fish production.” (Portland Press Herald, 2014)

Another project proposal by Chambers raises the question of marketability and scale of implementation:

<https://seagrant.unh.edu/project/research/seawater-acclimation-juvenile-steelhead-trout-onchorhynchus-mykiss>

One observation we, as well as commercial growers in Canada, have made over three years working with this species is that a portion of the cultured population (~10%) is stunted. This results in: (1) difficulty in the harvesting schedule because not all individuals are ready for market at the same time; and/or (2) loss of a portion of the crop if some individuals never reach market size.

“We are interested in finding the cause(s) of stunting, and trying to minimize or eliminate it. One potential cause relates to acclimation of the fish from their freshwater hatchery environment to seawater. In nature, juvenile steelhead trout migrate from freshwater rearing habitats, through estuaries, to ocean environments -

- a process that can take from weeks to months depending on the strain of steelhead. During this migration they undergo smoltification, a complex morphological, behavioral and physiological process that alters their appearance, behavior, and their osmoregulation from ion retention to ion excretion. In contrast to the gradual transition from fresh, to estuarine, to salt water that occurs in nature, cultured steelhead are typically moved from a freshwater hatchery directly into seawater, which may impair physiological functions in some individuals, and cause them to be stunted.

We propose to test the hypothesis that the rapid transfer of steelhead from fresh to salt water (no acclimation) can result in stunting. Further, we hope to determine if the length of time spent in estuarine (low salinity) conditions affects the proportion of stunted individuals. In a subsequent Sea Grant proposal, we plan to hold steelhead in replicate cages near the Jackson Estuarine Lab for varying lengths of time before moving them to the coast, and compare their survival, growth, blood chemistry and size frequency distribution to fish moved directly into seawater with no acclimation.

If fortunate enough to be funded by N.H. Sea Grant, the funding would not be available until 2014. We hope to gather some preliminary data in 2013, refine our methods, and work on the logistics of holding the fish at two different locations. Accomplishing this work would ensure our chances of success in the full proposal. Further, the supplies we purchase this year would decrease our budget request in the full proposal.

Our plan for 2013 would include purchasing 1000 steelhead trout (200g average weight) in late April. This number is needed since we see a small proportion of stunted fish, and we need to ensure an adequate sample size of small individuals. Half the fish would be held in a small net pen located in the estuary near Jackson Lab, and half the fish would be located in a similar net pen at the Judd Gregg Marine Research Facility. Temperature and salinity data loggers would be attached to both net pens to record these environmental variables. Fish would be fed 5% of their body weight in two daily feedings, and the number and size of any mortalities would be recorded. On the first day, and at weekly intervals thereafter, a random sample of fish from each location would be anesthetized, weighed, and measured. On the same schedule, a blood sample (caudal vein) from a random sample of 20 individuals would be obtained, and blood osmolarity would be measured. At the end of three weeks, fish held near JEL would be moved by boat (estuarine water in insulated containers) to a separate net pen at the coast. Sampling of length, weight, survival and blood chemistry would continue, for both groups of fish, over the following three weeks.

This project would give us good preliminary data on the value of acclimation, and allow us to work on the logistics of maintaining fish at a new location Great Bay (e.g. mooring a cage, feeding the fish twice per day).

As indicated, we have been working with six commercial fishermen on steelhead trout aquaculture over the last two years. In order to continue our outreach goals and support of this group, they would participate in this preliminary research, and we would donate the fish to them, for on growing and marketing, when we completed our studies.”

Basically, these experiments demonstrate that the focus is on growing and not protecting the environment or native species and nothing anywhere near the scale that Cooke is proposing.

The experiment that should be undertaken is using land-based, closed-containment systems. Cooke is presently experimenting with land-based systems in Chile. Why not here?

<https://thefishsite.com/articles/cooke-set-for-several-land-based-farms>

“The first of these projected projects will be in Chile, with the exact terms set to be finalised next month, while the deliveries of the land-based systems are forecast to occur between Q4 2019 and Q4 2021.”

DFW in their response to public comments provided a clear statement of the intent of EHB 2957. One of the key elements along with eliminating fish escapes is **that guidance be updated.**

1.1. 2018 law sunseting non-native finfish marine net-pen aquaculture

*EHB 2957: “AN ACT Relating to reducing escape of nonnative finfish from marine finfish aquaculture facilities.” EHB 2957 became 2018 session law June 7, 2018, after passing the Washington Legislative House on February 14, 2018 and Senate on March 2, 2018, and signed by Governor Inslee on March 22, 2018. In signing the bill, Governor Inslee issued a partial veto, deleting Section 1 of the bill from the enacted law. The Governor stated that “[s]ection 1 is unnecessary to implement the bill and [he does] not agree with all the assertions made in this section.” Despite the Acts title, the law’s intent is three-fold: (1) the elimination of commercial nonnative finfish marine aquaculture; (2) the elimination of escapes of finfish from commercial marine net-pens; and (3) **the completion of a guidance document for the planning and permitting of commercial finfish marine net-pen aquaculture.** With Governor Inslee’s veto of Section 1, the new law does not characterize commercial marine net-pen aquaculture as posing unacceptable risks to native salmon or the marine environment.*

The Governor’s decision to veto Section 1 of the bill ended all net pen guidance that began in 2016 which was based on guidelines published in 1986 and science best industry practices at that time with regard to Atlantic salmon. Since the operator has requested a change in species, there is a critical need to update both the guidance and the science as it relates to the raising of steelhead in marine net pens.

Ecology adopted discharge standards representing AKART for marine salmon net pens as part of chapter 173-221A WAC. From the permit fact sheets:

In 1995, Ecology adopted discharge standards representing AKART for marine salmon net pens as part of chapter 173-221A WAC. The adoption of these standards was required by RCW 90.48.220. In accordance with the marine salmon net pen discharge standards, the permit requires the same operational requirements applicable to all facilities (WAC 173-221A-110(4)). These requirements address feeding, disease control chemicals, chemical storage, and the development and implementation of a Pollution Prevention Plan designed to reduce or prevent the discharge of pollutants.

Prior to the issuance of the previous (2002) permit, the PCHB heard testimony on three alternative technologies to marine net pens. The Board ruled that none of the technologies constituted AKART because they were not technologically reliable and/or economically feasible, and dismissed with prejudice all AKART issues relating to all structural alternatives to net pens. Ecology will implement AKART in this permit by requiring compliance with the requirements in WAC 173-221A-110(4).

We recommend that the guidance be updated with current science and best industry practices with respect to raising steelhead in marine net pens. The State should withdraw their Mitigated Determination of Non-Significance, issue a Determination of Significance, and draft an Environmental Impact Statement to assess the full impacts of this proposed permit modification.

State Guidance for the Developing Marine Net Pen Aquaculture

If the document referenced in the links below was used to guide decision making related to the NPDES permit then, no decision to modify the NPDES permits should be made until the public has a chance to comment on State of Science on Net-Pen Aquaculture in Puget Sound, Washington. That document according the website:

- *Was not formally peer reviewed, although experts in marine aquaculture contributed to its development.*
- *Contains portions which may be inconsistent with the state's understanding of the biological, physical, and cultural environment in Washington.*
- *Is but one source of information that state agencies are using to inform their recommendations.*
- *Does not necessarily represent the management or policy views of the state.*

<https://fortress.wa.gov/ecy/ezshare/sea/Shorelines/StateScience.pdf>

<https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Shoreline-coastal-planning/Aquaculture/State-guidance-for-net-pens>

No decision to modify the NPDES permits should be made until the public has a chance to comment on State of Science on Net-Pen Aquaculture in Puget Sound, Washington.

Conducting inspections to assess structural integrity of the net pens and submit inspection reports certified by a qualified marine engineer to Ecology

7.4.3 Net Pen Structural Integrity Report

Approximately every two years, when the farm site is fallow, Cooke contracts a licensed engineering firm to conduct inspections and assess structural integrity of the net pens. Inspections include environmental data and projections for the farm location, cage component, and mooring assessments related to escapement potential, structural integrity, permit compliance, and operations. The net pen structural integrity assessment reports are certified by a licensed professional engineer and submitted to Ecology within 60 days.

To our knowledge, no inspection of this type has taken place for some of the net pens whose permits are under consideration that have been fallow for an extended period e.g. Fort Ward Pens. The last inspection, listed on Ecology's PARIS website, was conducted in December of 2017. If the net pen operator is working to comply with this element of the permit, why hasn't an inspection occurred? If some inspections have occurred, then they are not available on the PARIS website?

To further compound the process, two pens in the Orchard Rocks South Rocks array contain fish and the rest have been empty for many months. When does the testing occur? When all pens are fallow: Clam Bay, Orchard Rocks and Fort Ward? This means that the time line could be extended, depending on when pens are stocked, harvested and fallowed, well beyond the "Approximately every two year" permit requirement.

The need for increased inspections is highlighted during Ecology's last public comment period:

Response: *This requirement was codified in law in RCW 77.125.060 - Facility operator must hire marine engineering firm to conduct inspections. EHB 2957 was signed and it stated (bolded added): A new section is added to chapter 77.125 RCW to read as follows:*

1) For marine finfish aquaculture, the facility operator must hire, at their own expense, a marine engineering firm approved by the department to conduct inspections. Inspections must occur approximately every two years, **when net pens are fallow**, and must include topside and mooring assessments related to escapement potential, structural integrity, permit compliance, and operations.”

Ecology interprets and conditioned the permit to have the assessment done approximately every two years but more importantly when it's fallow. Ecology added more clarity to this special condition to better define. It now states “. Inspections must occur within two years of the effective date of the **permit if not completed and to be done routinely, approximately every two years**, when net pens are fallow, and must include current Doppler data, topside and mooring assessments related to escapement potential, structural integrity, permit compliance, and operations.

Also from WDFW related to net pen inspections:

In December 2019, a Consent Decree was reached between Cooke and Wild Fish Conservancy, where both parties agreed that before Cooke restocks any of their net-pen facilities, they are required to conduct a load analysis of the mooring and cage systems using environmental condition data that are consistent with the Norwegian aquaculture standard NS 9415. As part of the inspections mandated by EHB 2957, WDFW will require that Cooke provide an engineering analysis certifying that the net-pens conform to the parameters derived from the NS 9415 standard. Each net-pen facility will be evaluated independently as conformity to parameters derived from the NS 9415 standards require evaluation of the environmental conditions (e.g., currents, winds, waves, depth) specific to that net- pen facility.

The structural integrity of the pens becomes even more critical as the net pen structures age. Risk assessments should include both the impact and likelihood of an event over the life of an asset. There have been a number of events over the lifetime of net pens in Washington State and the probability of an event likely increases with age.

Mott MacDonald | Rich Passage Orchard Rocks
Atlantic Salmon Net Pens Engineering Assessment

4 Net Pen Structure

The three Rich Passage net pen structures were initially permitted and installed in the mid 1970's per the lease documents. The net pen structures have undergone several structural improvements, including complete replacement of the floating structures and anchoring equipment during its service life. The lease documents state the last replacement cycle began in 2000 when all three cage structures in Rich Passage (Clam Bay, Fort Ward and Orchard Rocks) were replaced with new steel floating structures. From GoogleEarth, the Orchard Rocks net pens appear to have been installed between 1994 and 5/31/2002. Orchard Rocks facility is composed of two separate net pen structures that are connected together with synthetic lines. Based on all available information, the age of the net pen structures (but not the mooring lines) is estimated to be approximately 17 years for Orchard Rocks. They are referred to by Cooke as Orchard Rocks North (ORN) and Orchard Rocks South (ORS). There are a total of 20 pens at Orchard Rocks north and south.

From the current DNR lease:

1.) Cage Descriptions and Useful Life of Improvements

The three Rich Passage net pen structures were initially permitted and installed in the mid 1970's. The cages have undergone several structural improvements, including the complete replacement of the floating structures and anchoring equipment since this time. The last replacement cycle began in 2000 and all three cage structures in Rich Pass (Clam Bay, Fort Ward and Orchard Rocks) were replaced with new steel cages.

The new cages have an average expected service life of approximately 15 years. Life spans of steel cage structures are variable depending upon exposure to storm energy, wave heights, wave frequencies, the corrosiveness of the marine environment, and the operational and maintenance programs of a company. Over the past 25 years, cage manufactures have made significant technological and structural advances in the design and the materials utilized to construct marine net pens. These advances have greatly increased the efficiency, durability, safety and life-span of the sea cages. The current cages deployed at the sites are well within the design and engineered capacity for this type of application.

Any modification of the NPDES permit should be conditioned on strict adherence to inspections that are required "approximately" every two years and the requirements of other legal actions. A decision to modify the current NPDES permit should be tabled until all pens are inspected and deficiencies addressed.

Structural integrity of the net pens and Emergency Contact Protocol

An NPDES permit that requires a structural engineering assessment every two years does not absolve the net pen operator of its duty to report and address structural deficiencies in the interim and we understand that the net pen operator is already supposed to be conducting visual inspections.

Recently, we observed and documented, in October of 2019, disregard for structural deficiencies which were apparent to the public and indications of the lack of appropriate contact information needed in case of emergency. According to the NPDES permit in place at the time:

The Permittee must maintain all structural and mechanical systems associated with the net pens, including but not limited to floats, walkways, mooring points, and all components of the anchoring systems in good working order. Maintenance and repairs to the structural or anchoring systems shall be documented and records maintained on site and available to Ecology upon request, as well as reported to Ecology as specified in Section S9.

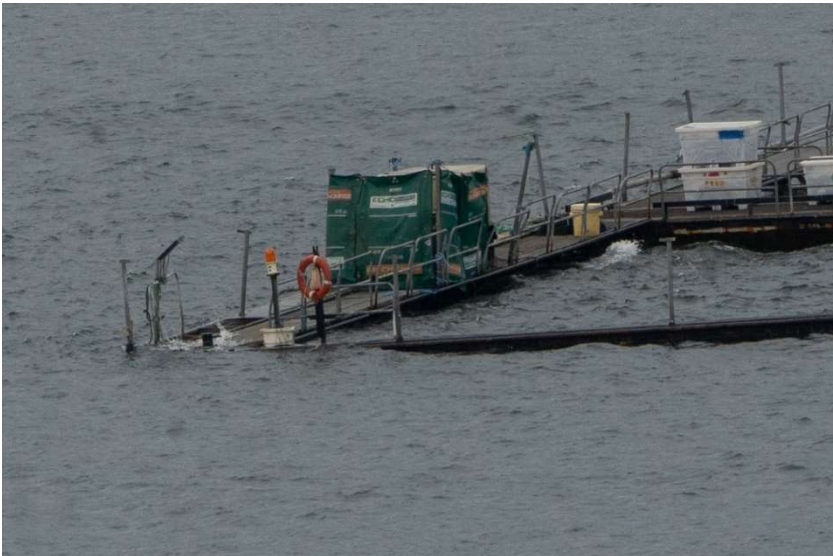
The net pen structure, Orchard Rocks South shown in the photo below, with the southeast corner low and submerged for several days was, did not appear to be "in good working order". While the corner pen did not contain fish, it does support equipment and there are fish in at least two of the Orchard Rocks South pens at the other end. The low level of the pens was reported to Cooke Management on 10/20/20 who responded in part, "it is typical for that end to ride low on a flood tide." According to the farms DNR lease, the pens in Rich Passage are "designed to withstand maximum wave heights in excess of 12 feet." We are wondering how this compromised pen would have fared in a major storm or if it had been fully stocked?

Here are our observations:

On October 15th we observed the pens in Orchard Rocks south much lower than usual.



October 16, 2019 photo shows submerged corner of pen with what appears to be a generator covered with noise-abatement material and mort containers nearby



October 16, 2019

Photo shows a work boat on its way to Clam Bay



Photo taken about one hour before high tide on October 16, 2019



October 17, 2019

A generator appears to have been moved and noise abatement material removed to the walkway.



October 18, 2019



October 19, 2019

Photo of what appears to be noise abatement material floating in the pen



We observed what looked like noise abatement material floating in the submerged pen on 10/19/19. Later that same day, a neighbor emailed that what looked like something from the fish farm had washed up on the shore of nearby Fort Ward Park. We reported this to an employee on the dock who said he didn't have any contact information other than "Ronnie" on the Clam Bay side. The information was reported to farm management by us and, to our knowledge, debris retrieved the next day.

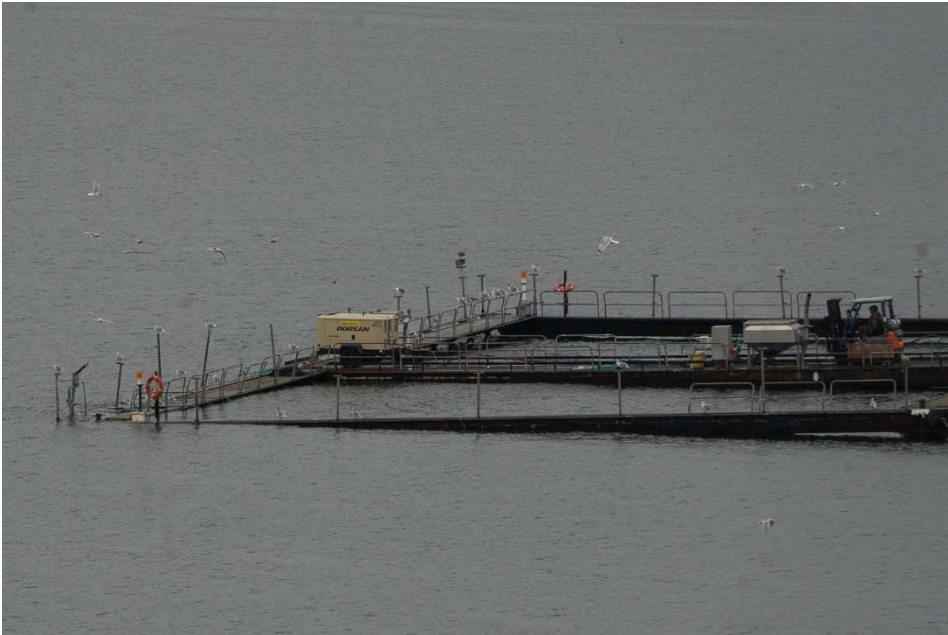
Photo of noise-abatement material washed up on the shore of Fort Ward Park



On October 20, 2019 we, reached out to Cooke Management with notice of the sinking pen.

Cooke's response: *"The south end of the farm is empty and has been for months. Please do not make uninformed assumptions. Divers are checking but it is typical for that end to ride low on a flood tide."*

October 20, 2019 10:00AM Photo showing forklift operator on the pen



October 20, 2019

Photo of diver in the small boat

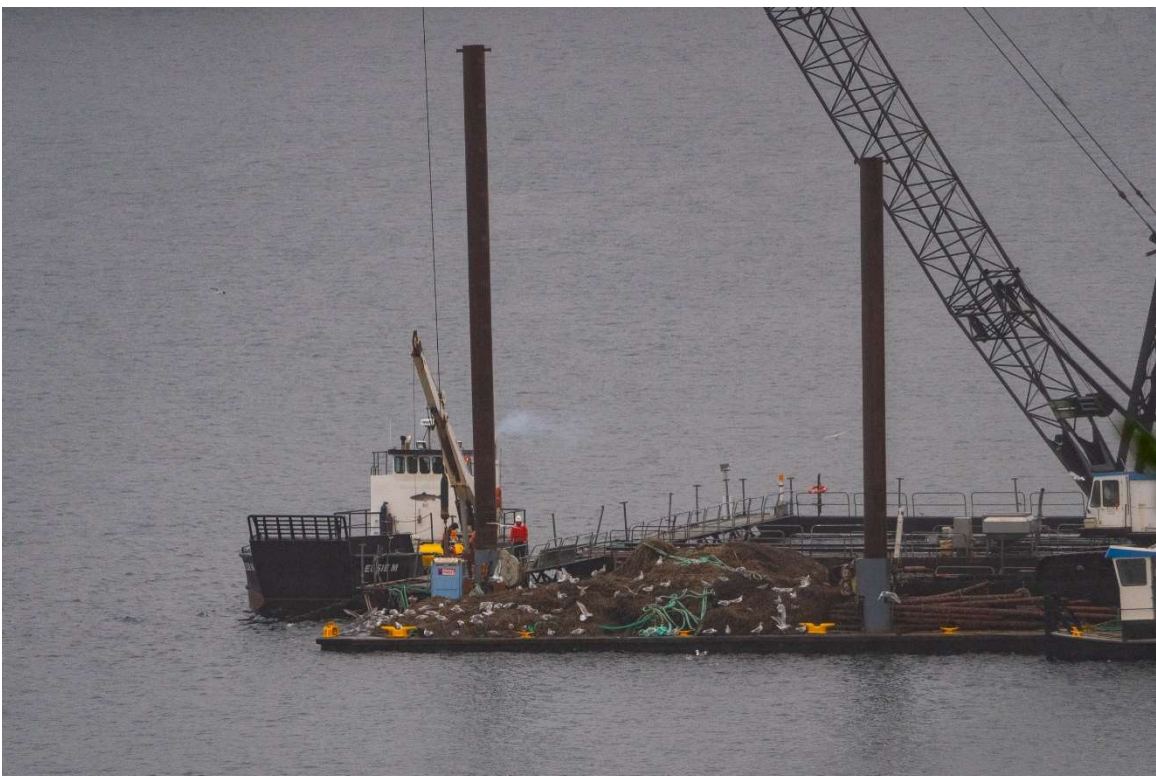


We are aware that the cause was a leaky pontoon that required days of work to re-engineer the net pen structure.

Media accounts minimized the failure by referring to a “dime-sized” hole in a pontoon, but the facts remain. The farm did not report a sinking net pen for days and did not do so until alerted by the Deputy Director of WDFW who, coincidentally, was visiting nearby and called the Coast Guard to secure the perimeter.

In this incident it is questionable if Cooke even noticed the sinking pen.

Needed repairs to the pen spanned over several days: Two photos taken on October 22, 2019



We are aware that updated NPDES guidance is in place to address this type of failure.

Steel Flotation Pontoons	Excess corrosion or mechanical damage leading to loss of airtight chambers in steel pontoons.	<ul style="list-style-type: none"> ■ Maintenance and repair reporting and recordkeeping through Weekly Surface Inspection Reports. ■ Annual below-surface inspections. ■ Ultrasonic survey of metal thickness of steel pontoons every two years. ■ Inspections every two years by marine engineering firm assessing structural integrity, mooring analysis, and analysis of risk.
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We do know, from direct conversation, that an employee who was on duty had little in the way of contact information to retrieve the debris that was washed ashore in the park. We have little confidence in the farm’s ability to reach out in the event of escapement or emergency. It is our understanding that the farm attempted to reach the Department of Ecology by email during the sinking net pen incident when a contact number is available, even to the public, online or from past Emergency Contact lists. The same 24-hour phone number has been in place for the Department of Ecology SW Regional Office in the past and is listed today in the farm’s current NPDES permit.

This is not the first failure in Cooke’s Emergency Contact protocol: A power boat incident that occurred in November 2018 and documented in Cooke’s 2018 annual Fish Release Report received by Ecology on 1/28/19, says that emergency personnel were unable to reach farm employees and that Cooke’s focus had been on *“improving how the company could notify various state and federal agencies...during an emergency situation.”*

Incident Response Review

Lastly, it should be mentioned that there was an incident during the past year that created an opportunity to test the agency contact procedures. In November, a small pleasure craft accidentally ran into one of the marine net pens during the middle of the night. While the fiberglass vessel suffered damage to the bow when it struck the steel net pen system, the cage system and fish containment nets were not damaged. A Coast Guard vessel was the first to arrive at the scene shortly after it was hailed by the vessel operator. There was however challenges for the Coast Guard and other emergency services to locate a contact number for Cooke representatives that caused some delay in communication to Cooke staff. A Cooke employee was eventually contacted and arrived at the site in the early morning hours. The Cooke employee did an assessment of the situation and determined there were no signs of damage to the stock containment nets and there was no risk of fish escapement posed by the vessel strike. The employee communicated this information to other Cooke management during the early morning

nours and that they would be doing a precautionary below surface inspection near the boat with the Cooke divers at first light in the morning. The state agencies were notified by Cooke personnel later that same morning with more details about the incident and specifically that company divers had completed a below surface check and confirmed there was no damage to the containment net or cage system. Cooke also made arrangements that same day with Ecology to facilitate the transport of an Ecology employee out to the fish pens to do an independent assessment of the event.

While the incident was minor, it did point out areas that could be improved upon in communications during an unusual event such as this and more specifically some challenges that occurred with information flow. Over the past several years, the primary focus by Cooke has been on improving how the company would notify various state and federal agencies and other emergency management services during an emergency situation. Less attention had been given as to how the emergency management services could find contacts for Cooke personnel during an emergency event if they were the first to arrive on scene.

A debrief conference call with the stakeholders was initiated by the Department of Natural Resources shortly afterwards that included state personnel from DNR, DOE and DFW and Cooke representatives. The focus of the conference call was to review what worked and what could be improved upon. As a result of this discussion, updated Cooke employee contact information has since been provided to the U.S. Coast Guard Sector Puget Sound and the Joint Harbor Operations Center (JHOC) dispatch personnel. Cooke contact information has also been provided to the various local law enforcement agencies and particularly the marine patrol units with jurisdiction near the net pen farm areas. Additionally, the company has since installed new emergency contact information signage at the various net pen sites and on the outside of nearby onshore Cooke office buildings at Bainbridge Island and Port Angeles. These actions should further improve the communications and information flow between company personnel, state agencies and the emergency management services.

The company is committed to working with the agencies on improving fish escape prevention, response and reporting procedures and continuing to raise a much needed future protein source in a sustainable manner that has minimal impact to the environment.

Sincerely,



Kevin Bright, Cooke Aquaculture Pacific
Permit Coordinator

The fish farm has a long history of inability to maintain an appropriate emergency contact protocol even though the same permit coordinator is in place even to this day. After a 2011 fire at a Bainbridge Island net pen, conclusions in a Department of Ecology report stated that:

SUMMARY AND CONCLUSIONS

It was evident in the early stages of this fire and spill event that local authorities had no contact numbers for the management or responsible officials for the net pens. Since this event, American Gold Seafoods has provided the City of Bainbridge Island and Kitsap County emergency personnel with contact numbers.

American Gold Seafoods - Saltwater IV Orchard Rocks~WA0031542~11-03-11.pdf	Inspection Related
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Adobe Acrobat
Document

We are aware that NPDES permit calls for: *Requiring the permittee to develop site specific response plans in the event of a fish release, and to conduct and participate in preparedness trainings.*

The response during the sinking net pen incident leads us to doubt that the farm is able to follow and implement the requirement from Cooke's Pollution Prevention plan:

Cooke facility staff and Site Managers will be trained on the policies, procedures, and practices contained in the Plans. Staff training will occur annually for current employees and within the first 3-month probationary period for a new employee. If the plans are updated or changed, staff will be provided training on the new material. Annual training will occur by March 30th of each calendar year. The Site Manager will maintain an employee training log for each specific location and provide an updated copy of that log to the General Manager, Permit Coordinator and Business Support Analyst as updates or new training activities are made.

The annual training will cover safe handling practices, spill prevention and spill response procedures, review the locations of spill kits and contents, and emergency notification procedures. The training will include a full review of each facility's O & M Manual, Pollution Prevention Plan, Fish Escape Prevention and Fish Escape Response and Reporting Plans. The instructor will determine whether an employee understands the plan as it relates to their job duties and can competently perform the tasks described in the Plans. The Employee Training Log will include the instructors' name and signature, the employees' name and signature, the date of instruction and determination of competency.

The Fish Feeding Technicians are trained on the job through an apprenticeship. This Fish Feeding Technician's main duty is to supervise the feeding process to ensure the maximize ingestion of feed by the fish stocks and to reduce the occurrence of feed loss. Site Managers and employees receive periodic training on the latest feeding science research by outside professionals and researchers, and Cooke corporate staff.

We have documented failures in the emergency contact protocol in 2011, 2018 and 2019 here on Bainbridge Island alone. While records may be available to Ecology upon inspection, there is no internal or external audit to ensure that the process is being followed and that records are reliable.

Ecology should require, at the net pen operator's expense, an internal and external audit to ensure the reliability of training and emergency response protocols.

Marine Mammal Predation and Public/Worker Safety

We have concerns regarding the number of marine mammals that have significantly increased since first reported to the Department of Fish and Wildlife, Ecology and DNR in January 2020 and the possibility of escapements with their increasing numbers as well as impacts on public safety. Photos and videos in January document sea lions lining only the west side of the Orchard Rocks South pen and swimming freely in a pen containing Atlantic salmon. We were told by WDFW that:

Sea lion activity around these net-pens is normal, but seasonal, and what have you have documented is not out of the ordinary. At this point the net-pen structure itself and the sea lion activity on, in, and around the net-pens do not present a risk of escapes. Cooke is required to report back to us if the situation changes.

The number of sea lions has almost doubled than when first reported. We have been recently told by WDFW that the net pen structure is not at risk of collapse. WDFW calculations for 250 marine mammals is a combined weight of 75 tons. What are the impacts, in terms of water quality, from hundreds of marine mammals rafting on a man-made atoll? Many long-time residents here concur that there have **never** been marine mammals on the pens in these numbers. Additionally, if marine mammals can breach predator netting and swim freely in pens containing fish, how are fish, potentially, not able to escape?

Marine mammals are attracted to the pens for a reason. Sea lions are known to eat five to seven percent of their weight in food each day---about eighteen kilograms of fish and squid for a typical male. If not Atlantic salmon, except for the one who swam freely in the pen, then they may well be attracted to other fish that converge on the area including endangered species.

Escape Prevention, Response, and Reporting:

Other, often small-scale escapes, termed leakage, may occur due to errors during transfer of fish, maintenance errors, or small holes in nets caused by predators, floating debris, or vandalism (Jensen et al. 2010). Leakage of salmon from farms is typically undetectable (Britton et al. 2011, Fisher et al. 2014). There is a growing understanding that more gradual, low-level leakage of fertile fish can have a greater negative demographic and genetic impact on native species than the rarer, large-scale escape events (Baskett et al. 2013, Yang et al. 2019).

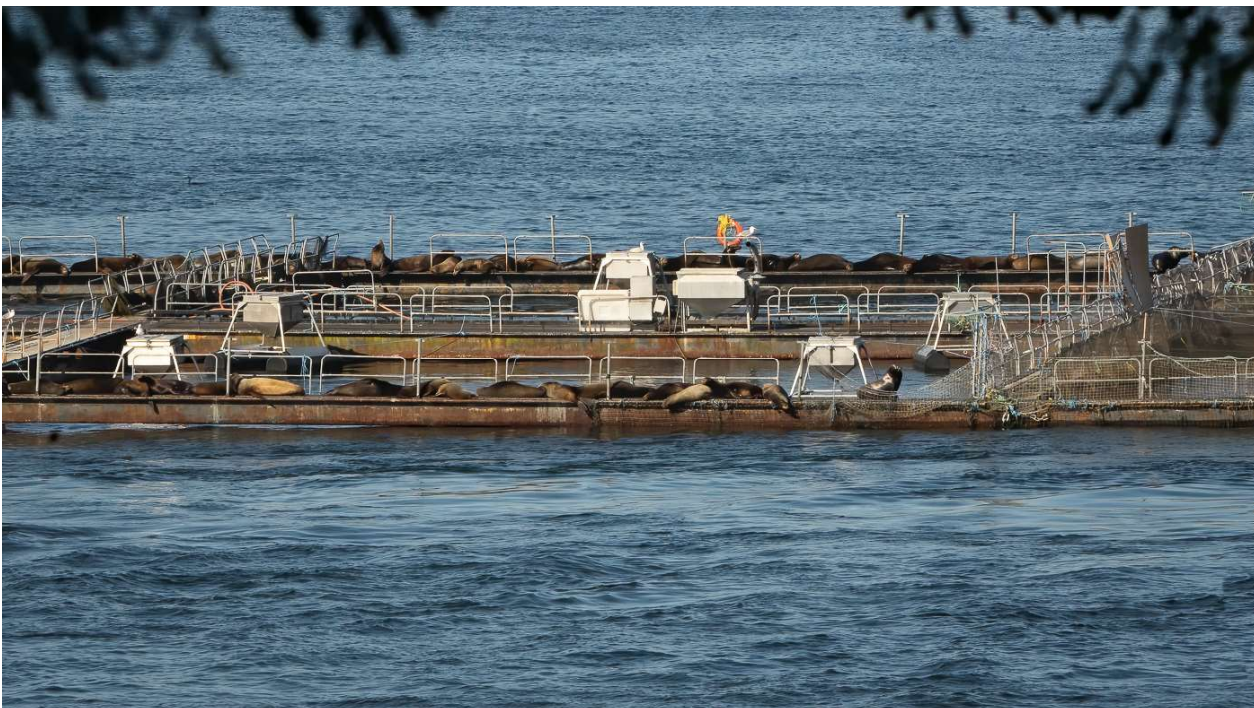
From WDFW Permit

Cooke must report to WDFW Fish Health Supervisor, Lead Veterinarian, or Aquaculture Coordinator within 24 hours of discovery of any fish that has been observed to have escaped from any net-pen facility or during transfer into or out of a net-pen facility, regardless of numbers of fish involved (i.e., the minimum reporting number is one)

December 8, 2019 East side of Orchard Rocks South



May 5, 2020 East side of Orchard Rocks South (pens to the right of the marine mammals contain fish)



Disconcerting, were farm worker initial attempts, allowed by NOAA, to displace these animals by traversing the walkway where they raft. The sea lions jumped back almost immediately after workers passed. The supply ship that had circled the pens, in what appeared to be an attempt to displace the sea lions, only temporarily forced them to nearby beaches where residents and kayakers are now threatened by the irascible and five-month residents on Cooke net pens. One area resident shared this recent account:

“On Monday June 1 A Boston Whaler was operating as a safety boat for a swimmer in front of our house. One Sea Lion approached, not a pack of 6-10 and the boat pulled the woman from the water. What will it take to realize that those pens attract Sea lions and that they aren't amiable toothless mammals. I imagine they could be eradicated if depredation permits were issued, but that's unlikely. Will it take a few kayakers or swimmers to be injured or killed for anyone to see the folly of this operation in such tight quarters?”

Efforts are currently under way to exclude them from Orchard Rocks with the use of some type of above-water skirting. The results remain to be seen. Cooke has a responsibility to put measures in place on all pens to reduce marine mammal predation and to protect the public and its own workers.

The population of marine mammals can be deterred by employing the guidance in the NPDES draft when pens are fallow. **This could be a clean set of predator nets or other barrier put in place after harvest to deter marine mammals on all net pen structures. Another way to prevent marine mammal predation and potential fish escapements is to disallow the partial stocking of a net pen array.** An additional benefit would be to ensure that all pens in an array are fallow at the same time and prevent delays in the net pen inspections that are required “approximately” every two years.

5. Review of Critical Structural Components

Floating marine net pen cage systems consist of a semi-rigid steel or plastic floating structure held in place by a series of external mooring lines attached around the perimeter of the structure. The fish containment nets (stock nets) attach to the floating cage structure above the surface of the water. The bottom of each square stock net attaches to sinker tubes or other types of weighting systems that submerge and hold the net in place. The combination of the semi-rigid floating structure and the net weighting system creates the open growing space (fish pen) in which the fish can be reared. Additional netting materials cover the surface of each fish pen to prevent avian predation and surround the perimeter of the submerged stock nets to protect against marine mammal predation.

Maintenance of Net Pen Structures

We have continued concerns regarding the methods for the maintenance of net pens structures that may be required and its impact on water quality. We are requesting, as we have in the past, that Cooke provide documentation that containment measures are in place for overwater maintenance/repair like the pounding off of rust on Orchard Rocks pens by sometimes multiple workers that took place from February 2018 until September 2018. There, the City of Bainbridge received multiple noise complaints, some from over a mile and a half away, which were mistakenly dismissed and closed by a city code compliance officer as related to an expired permit for dock repairs.

Photo of workers hammering rust off the Orchard Rocks facility 2018



In addition to the noise complaints with the city, Ecology was contacted as **no containment measures were observed. For all incidents related to noise and pollution, the public has to provide evidence that an infraction has taken place. Cooke is not required, in these instances, to provide evidence that their procedures are actually being followed and is allowed to continue on their good word. We urge you to employ the same type of proof from the net pen operator that you require from the public to ensure that containment measures are actually in place like photos or video evidence.**

In another example, while a permit to do work on the Bainbridge dock calls for replacement of creosote covered piles, we were told that no creosote-covered piles were actually removed and that the process would take place over three years (because the permitting was *easier*). At the time of the construction, a floating boom around the entire perimeter of the work area was required, but no boom was ever observed.

To our knowledge, the last phase has not been completed and the creosote-covered piles remain.

<https://ci-bainbridgeisland-wa.smartgovcommunity.com/PermittingPublic/PermitDetailPublic/Index/e11514bd-2df5-4218-877c-a68200f7df89? conv=1>

<https://ci-bainbridgeisland-wa.smartgovcommunity.com/PermittingPublic/PermitDetailPublic/Index/da07ef48-b0b8-46c6-af71-a61101186dc0? conv=1>

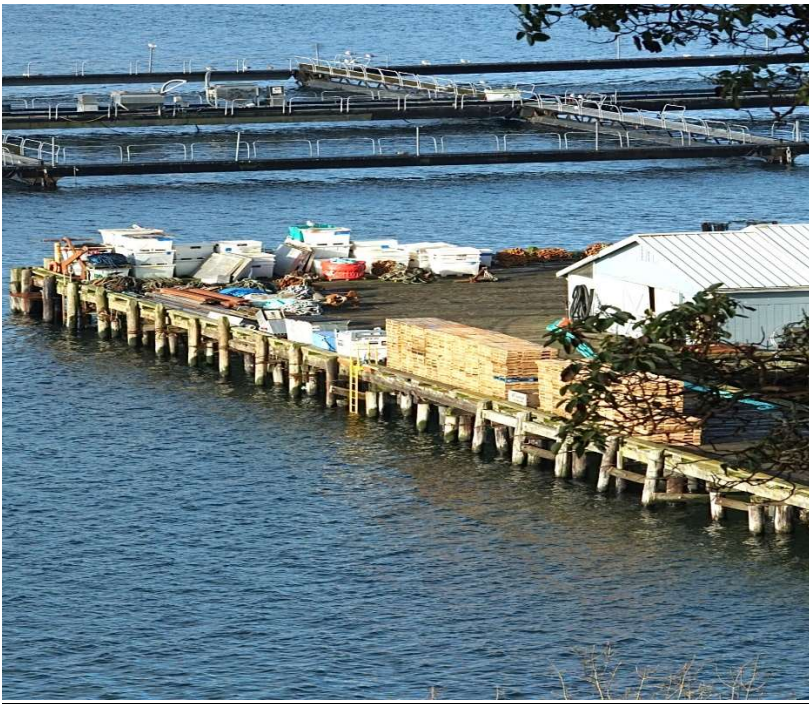
Solid Waste Disposal

We are again, as we have in the past, requesting a specific collection interval...weekly, bi-weekly related to the collection of recyclables like pallets and feed bags. This would prevent over accumulation as shown in the photo below and increased likelihood of their ending up in the water as has happened in the past. Permit language is not specific in terms of **how often** materials should be collected. **With no specific guideline, the net pen operator is the arbiter of what is routine and there is no basis for enforcement by the State agency.**

Solid Waste Storage and Disposal Practices

Solid wastes generated by the daily operation of the sites include feed bags, wooden pallets, used line, ordinary household wastes, and other non-hazardous items. Proper containment, handling and storage of these waste materials shall be the priority of all employees to ensure these materials do not enter the water. These items shall be stored in secured containers or bundles before transport to a land-based facility. Solid waste is collected and routinely removed from the facilities and transported to the land-based support facilities for proper disposal and/or recycling.

February 2, 2020 shows an over accumulation of pallets



Additionally, the sound barrier that washed ashore the park in October was not marked as Cooke property nor were Cooke personnel aware that it was missing even though it had been floating in the sunken pen prior to its release.

Preventable Discharges to State Waters

We are encouraged that the intentional pressure washing of equipment that resulted in fines had ended, but were surprised to document twenty minutes of washing of the dock in February of 2020 which included the outsides of containers that held dead fish or morts that were being stored on the dock. We understand that morts are supposed to be in totes lined with plastic and while not pressure washed per se, see no reason to wash the outside of these containers slated for transport or the dock itself.

Screen shot from video taken February 10, 2020



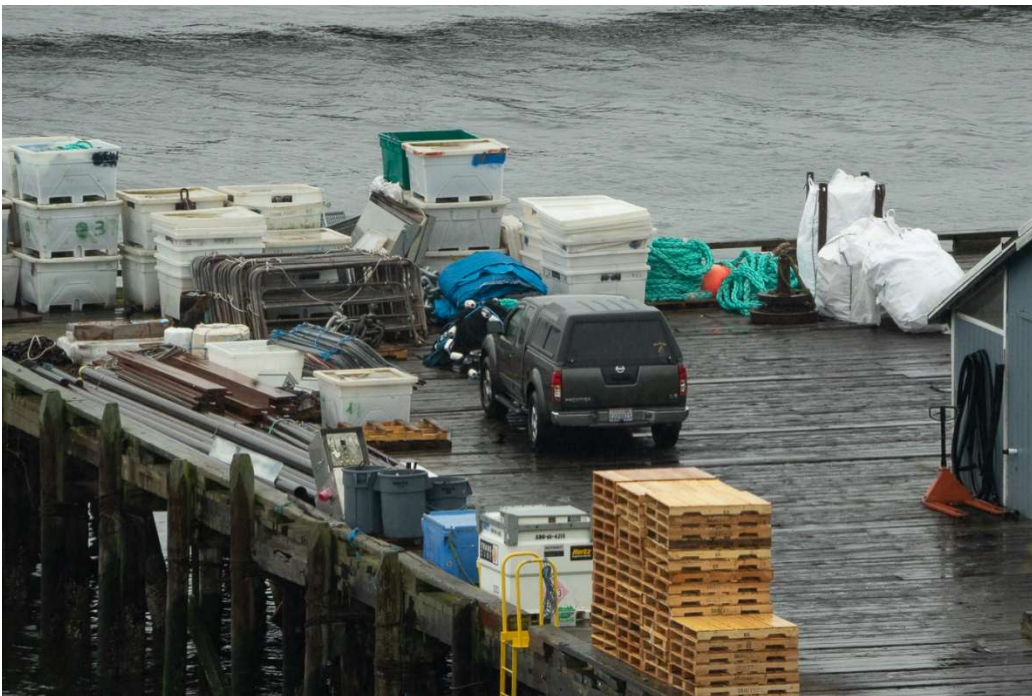
The four totes in the back contain dead fish shown in the close-up shot February 10, 2020



Any washing of containers that hold dead fish should be prohibited to prevent discharges to State waters.

Additionally, the dock is often traveled by eighteen wheelers, delivery drivers and workers in their personal vehicles who may not wish to walk the length of the dock from the parking area.

May 25, 2020



Permit language:

9. Discharges

No discharges are allowed of sanitary waste, floating solids, visible foam (other than in trace amounts), or oily wastes that produce sheen on the surface of the receiving water

Below is the Best Management Practices Manual that was sent to me in the past by Ecology:

<https://fortress.wa.gov/ecy/publications/documents/95056.pdf>

While parking over water might be restricted under general provisions of the Bainbridge Island Shoreline Master Program (SMP), we told by a former city planner that: *“The aquaculture facility predates the City, so there is no conditional use permit. They are essentially “grandfathered” and many of the City’s SMP do not apply to the facility.”*

According to Cooke’s NPDES application materials for their current NPDES permit modifications, the shoreline permit in place was issued by the Kitsap County Department of Community Development on June 13, 1988, over thirty years ago. (Permits 502 for Fort Ward and Orchard Rocks pens and Permit 503 for Clam Bay)

Parking of personal vehicles over water should be prohibited to prevent accidental discharges to Washington State waters.

Improving net cleaning and maintenance procedures to prevent biofouling and fish escape

With all due respect, we feel that it is important to address, once again, net washing procedures. From the Department of Ecology’s last public comment period:

From Rich Passage Home Owners Association, authored by Kathleen Hansen, letter sent to Ecology postmarked 2/16/2019

Comment: *At the end of the growing cycle all stock and predator nets must be removed from the facility by barge and transferred to an upland facility for complete cleaning and repair. And in-situ washing of nets with pressurized seawater may only be used during the growing cycle to minimize biofouling.*

Response: *Comment noted. In the Pollution Prevention Plan submitted in the application materials Cooke identifies net washing practices that are similar to your request but do not specify barging nets offsite.*

1. No anti-foulant paint will be used on the netting materials at the farm sites.

2. Fish containment nets are typically pulled to the surface once per year. Net rotations or net changes can occur during the production cycle of the fish and clean fish containment nets can be rotated into the farm during the growing period to minimize the amount of marine fouling growth on the nets.

3. Nets will be frequently rinsed in-situ with pressurized seawater to minimize bio-fouling growth. If large amounts of growth begins to occur it will be collected and taken to an upland soil composting facility.

4. At the end of the growing cycle after the fish have been harvested out, the nets are removed from the water and transported to a land based cleaning and repair facility.

5. Cleaning and repair of the nets is to be carried out by an approved net repair facility that is designed for this purpose. Materials washed from the nets will be captured and disposed of properly.

Comment: *During in-situ washing how are portions of the net pen structure itself not affected by underwater washing as reference in Section 2. O&M Manual Components, Subsection s? “The Permittee may not pressure wash any portion of the net pen structure or any equipment....”*

Response: *Comment noted. This requirement is meant to prevent intentional washing of the structure.*

Please require that nets be barged offsite and not warehoused on the dock. This would prevent additional discharges to State waters ensure that materials are captured and disposed of properly as required in point 5. *Cleaning and repair of the nets is to be carried out by an approved net repair facility that is designed for this purpose. Materials washed from the nets will be captured and disposed of properly.*

Nets, after removal have been stored on the dock in the past and Ecology can prevent unwanted discharges to Washington State waters by requiring that they be removed directly by barge.

Additionally, we are requesting that the Department of Ecology strictly adhere to point 4 of the permit language. *4. At the end of the growing cycle after the fish have been harvested out, the nets are removed from the water and transported to a land based cleaning and repair facility.*

From our public comment for the last NPDES permit:

Like thousands of others, we are well aware of the dangers of poor net-maintenance as demonstrated by the failures and mismanagement at Cypress Island. Last summer, at the end of the growing cycle, instead of predator nets being removed from the Fort Ward Pens here on Bainbridge, nets were cleaned by divers using power washers...the spray shooting many feet into the air.



The response from Ecology was:

“I spoke to Kevin Bright with Cooke regarding this activity. Kevin indicated that all the nets were removed from the Orchard Rocks site, but only the stock nets had been removed from the Fort Ward site. The reason was that Cooke anticipated approval of a transfer permit from DFW to re-stock the Fort Ward site. The permit was eventually was denied due to problems with the fish they were going to stock. Cooke has procured new smolts to stock the Fort Ward pens and timing will not allow for removal of the predator net. Ecology is not overly concerned that the predator net was not removed (even though it is not in complete compliance with the Pollution Prevention Plan), and that it is being pressure washed in place. In situ pressure washing is in compliance with Cooke’s Pollution Prevention Plan. Net biofouling is not contingent on the presence of fish in the pens. Mussels and other marine organisms will accumulate regardless, especially during the summer months. So if nets are present, diligent washing of the nets is considered a BMP. A greater concern for Cooke

could be the transfer of any legacy fish health problems from the previous stocking being transferred to the next crop of fish from the uncleaned net. However even if the nets were removed there could still be transfer from the floating structure itself. “

Ecology appears to acknowledge that:

1. Cooke was not in complete compliance with its own Pollution Prevention Plan
2. No matter what cleaning methods are employed (in situ or net removal) there still could be transfer of fish health problems from the structure itself

Additionally, a warning letter to Cooke from Ecology for unpermitted net washing was issued August 25, 2016 for discharges. This warning letter followed a month-long incident of power washing stock nets into State waters. Cooke explained this activity as a cost saving measure that was approved by management. Prior net pens owners were known to transport nets at the end of the growing season by truck which left foul discharges on Bainbridge roads. The previous Cooke GM communicated that nets would be shipped away from the pens by barge.

In Attachment A, Cooke states that in 2012, it switched company-wide to a “single stocking production plan that allows ample time for the containment nets to be removed from the farms and transported to an upland net washing facility for complete cleaning and repairs”. These upland facilities are designed to handle the nets and dispose of materials properly. Cooke’s practices during the last two production cycles are inconsistent with their pollution prevention plan or best practices as described in Attachment A. On paper, Cooke’s recommendations seem reasonable. Actual practice, however, seems to favor actions that are expedient and cost efficient. A lack of specificity in permits makes it difficult for State agencies to ensure that the proper practices are being followed.

To date, no fish have been stocked in the Fort Ward Pens. The operator should not have the option of short-cutting the net cleaning process at the end of the growing cycle.

We are asking that the net cleaning procedures at the end of the growing cycle be strictly adhered to in the future. The net pen operator should be in full compliance with the NPDES guidelines. Less than optimal cleaning such as cleaning with hand-held washers, should not be conditioned on the farm’s desire to stock pens quickly at the end of a growing cycle when more rigorous net cleaning at a net cleaning facility is required as a condition of the permit.

Impacts of large-scale dispersal of feed

In 2019, over twelve million pounds of fish food was dispensed into Puget Sound, four percent of which was medicated feed according to annual feed reports in Ecology’s PARIS website. All of this feed is not eaten by the fish in the net pens. Anecdotal evidence leads us to believe that some of this feed makes its way into the surrounding waters and is responsible for attracting other types of fish to the net pens themselves.

- The Orchard Rocks group of net pens alone, for example, accounted for nearly 28% of the total amount of food dispersed in 2019 and is operating in 60% of its total pens for the current grow-out cycle.
- Fisherman regard the area near the pens as a fishing hot spot and can often be seen fishing right next to the net pen structures containing fish.
- Long-distance swimmers have begun to be threatened by marine mammals that are drawn to the pens and avoid, what they describe as, murky and fishy-tasting waters.
- The creation of an artificial attraction to pens by migratory seabirds.

May 13, 2020 Fishing next to Orchard Rocks



May 31, 2020 Fishing next to Orchard Rocks



Keep in mind that the Orchard Rocks South net pens are now the pens that are overrun with sea lions and are the only pens in Rich Passage that contain fish. What other types of native fish are attracted to the pens or pass through the pens themselves? We understand from the Pollution Prevention Plan dated 2017 that:

Feed quantities are recorded for each fish pen every day. The Feed Conversion Rates (FCR's) and Specific Feed Rates (SFR's) are to be closely monitored for signs of over feeding or under feeding.

The interest from fisherman, sea birds, and marine mammals would lead us to believe that, despite those efforts, something is leading to the attraction to the pens themselves.

January 26, 2020 Seabirds near Orchard Rocks pens



February 4, 2020 Seabirds near Orchard Rocks pens



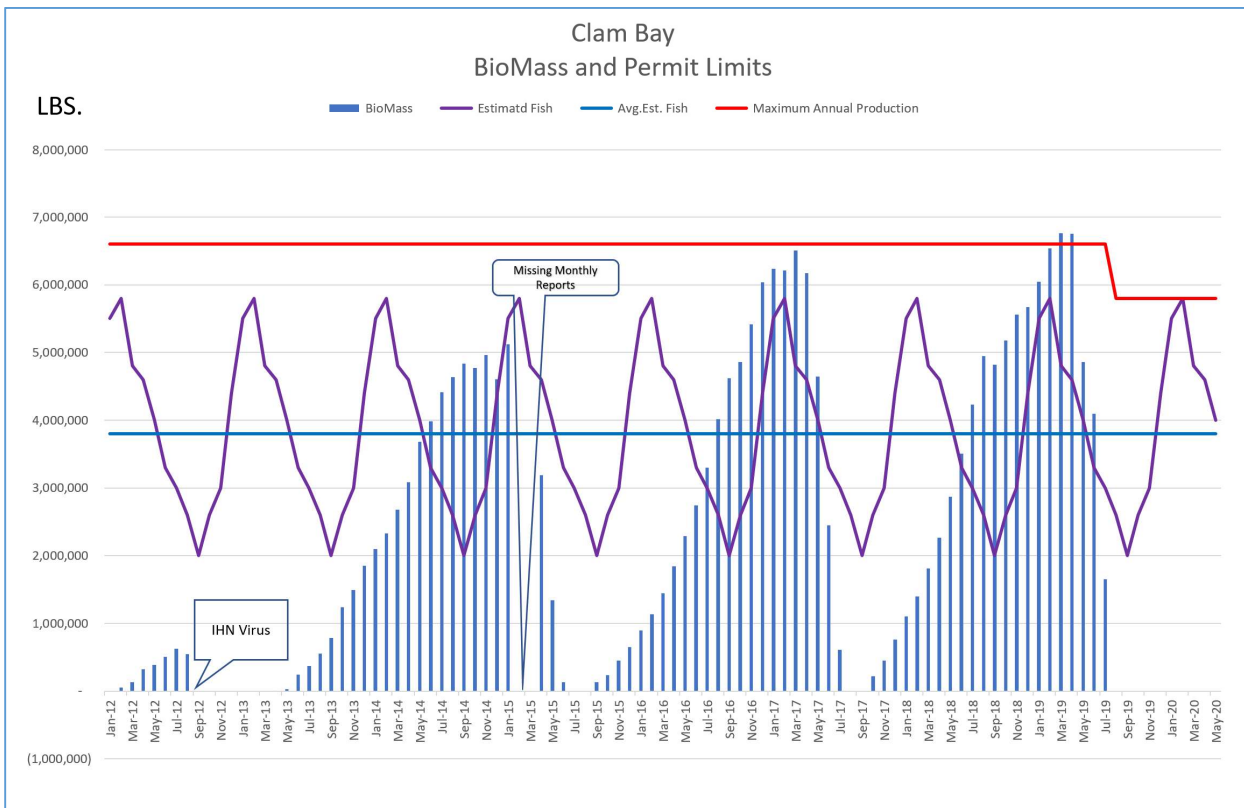
Data Monitoring Reports

We have concerns regarding how monthly monitoring reports are analyzed. Is the agency simply looking for exceptions or is there an overall model where trends can be visualized? In 2017 during net pen Guidance meetings, it was determined that monthly reports were being filed when they were input into PARIS rather than when they are received. Now they are categorized by date received, but the PARIS database is not organized or easily searchable. There is no transparency in terms of how the data is analyzed upon receipt.

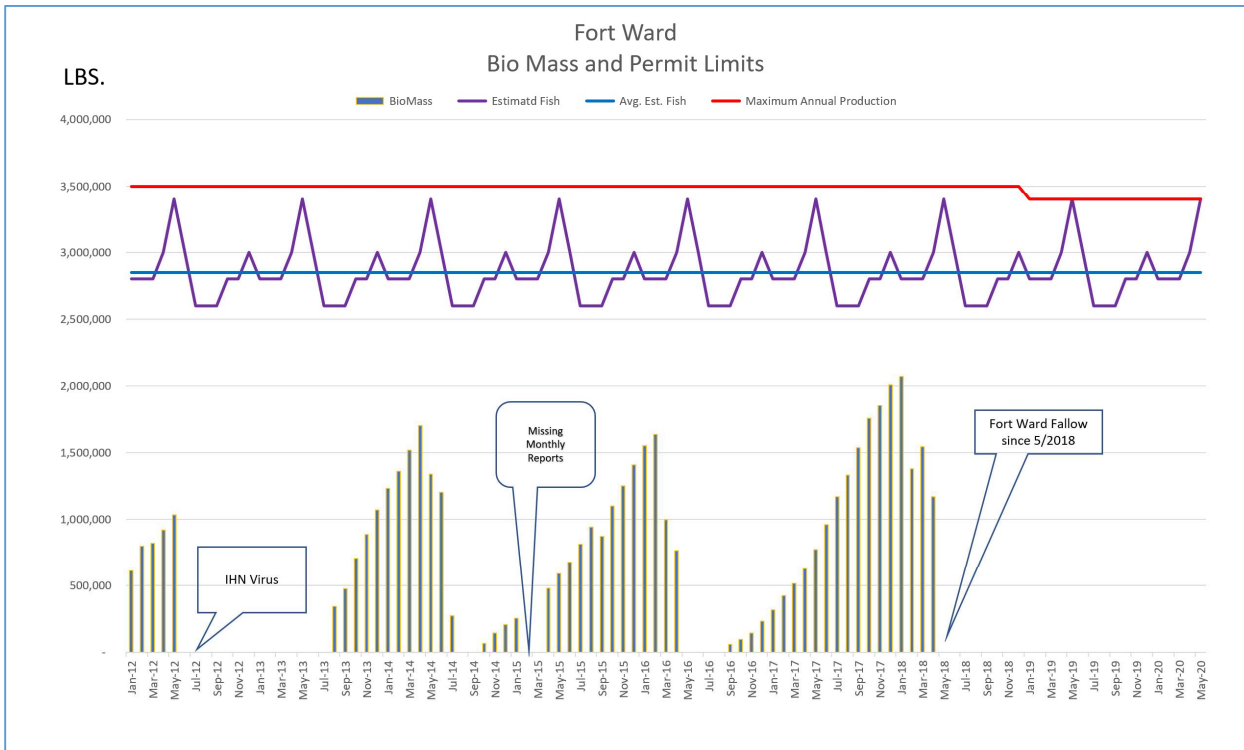
Bio Mass Data

Below, monthly bio mass data for Bainbridge Island Net Pens was analyzed from 2012 to present (Prior and Current NPDES Permits) along with permit application maximums and estimated fish. Most Sites when viewed independently appear to be operating generally within the permit parameters with some exceptions: Ecology failed to notice the significant decrease in Bio Mass during the 2012 IHN virus. Reported by the media but seemingly unreported by Ecology as well as missing reports on PARIS for February and March 2015.

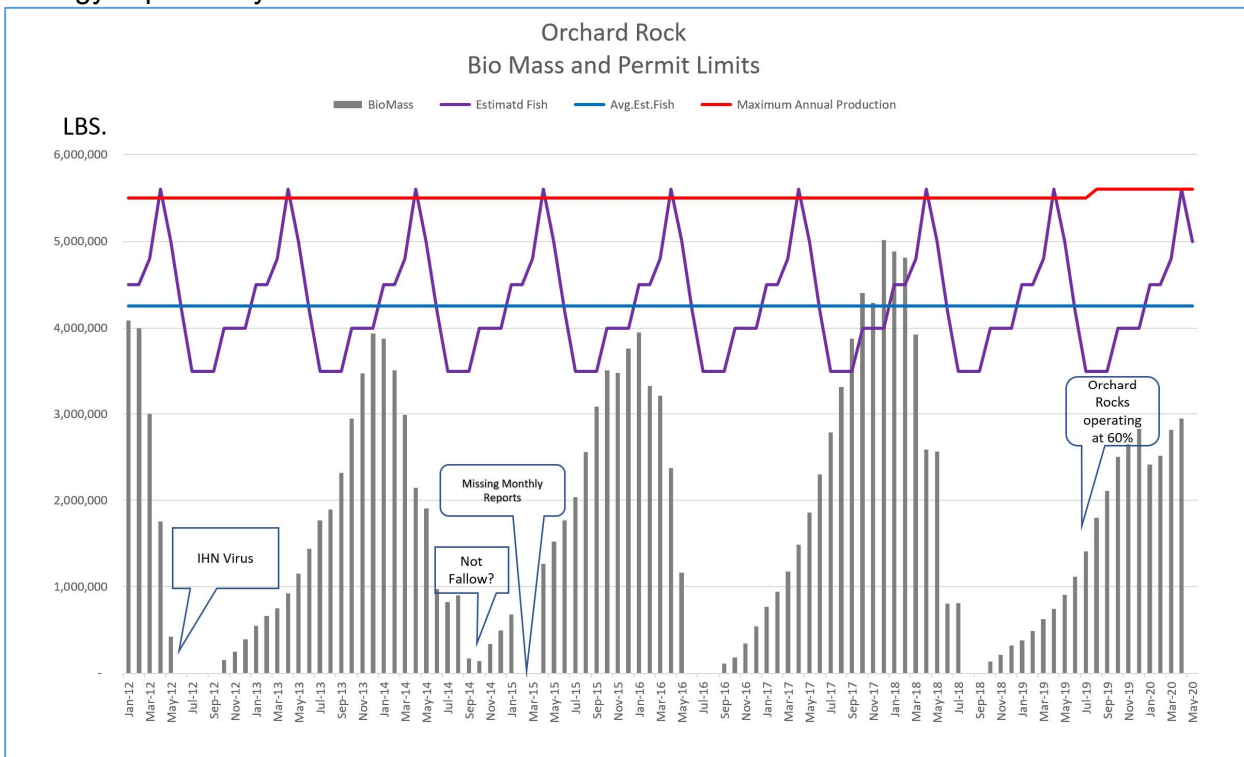
Clam Bay is reaching or exceeding the Production Maximum during the production cycles. Can Ecology explain why?



Fort Ward is operating significantly under due to long fallow periods for some unknown reason. Can Ecology explain why? Note: Fort Ward was denied a Fish Transfer Permit at the end of their last cycle in 2018.



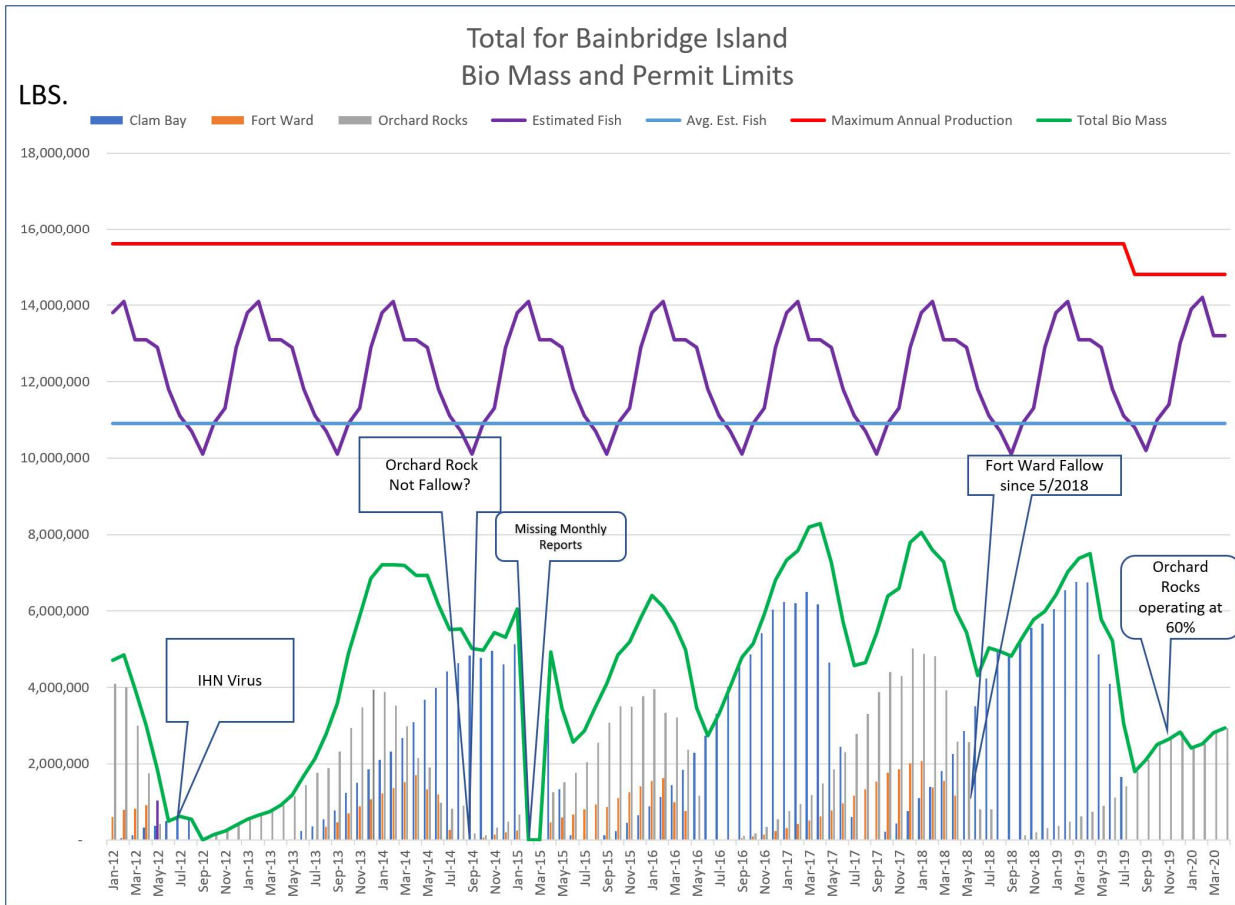
Orchard Rock appears to be within parameters currently operating at 60% capacity (12 of 20 pens) Orchard Rock appears to not have been allowed to stay fallow for two months in the 2014 production cycle. Can Ecology explain why?



Concerns:

If all sites were operating at their permit maximum level with their production cycles aligned in Rich Passage, there would be significant increases in biomass, regular and medicated feed, and fish waste above the historical levels and this could potentially lead to in a net loss in water quality.

Ecology needs to take into consideration a worst-case scenario.



The Department of Ecology should proceed with caution to prevent a situation in Washington like the one that occurred with Cooke in Maine:

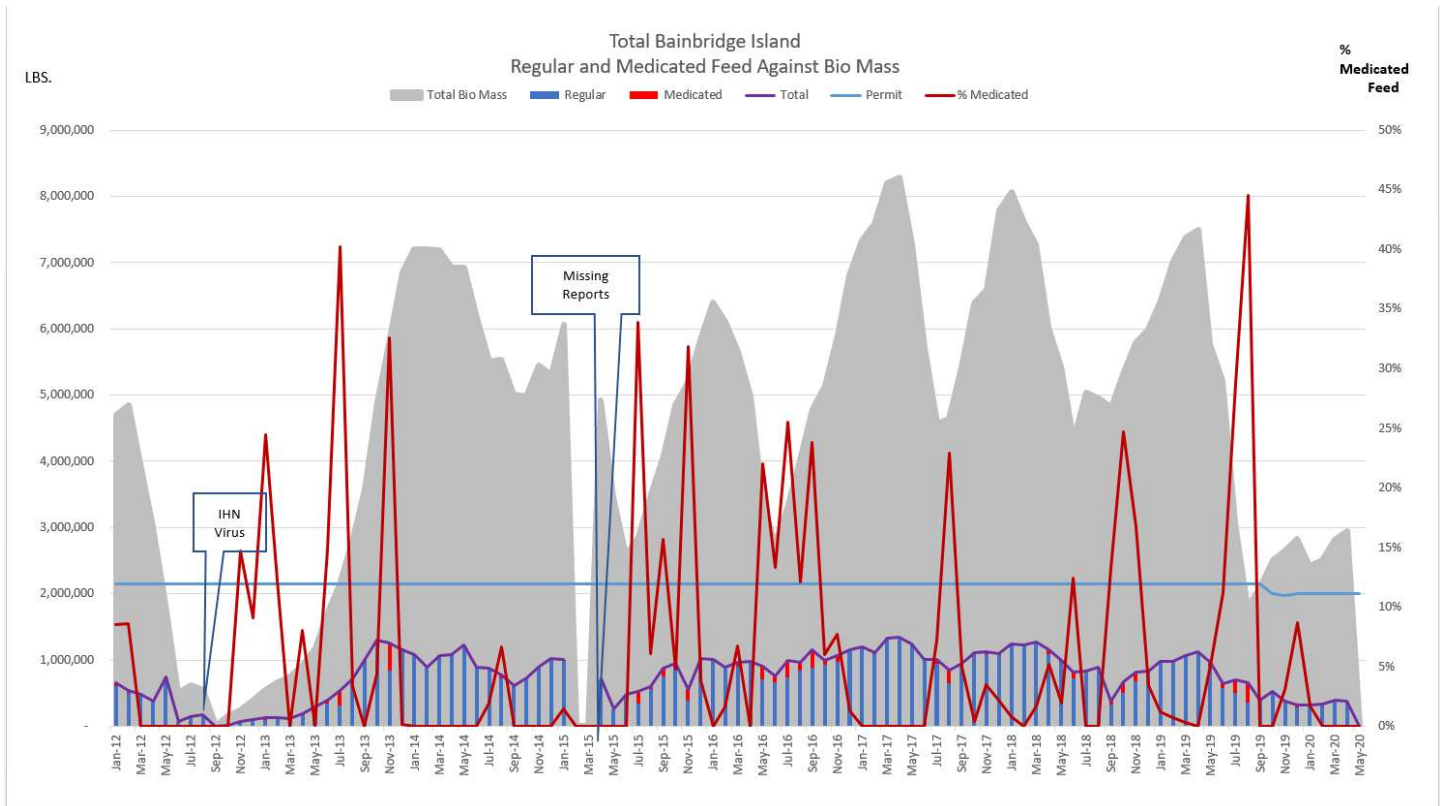
The Maine Department of Environment Protection has settled with Cooke Aquaculture for \$156,213 for a number of violations concerning its net pen facilities, an amount which will go to the funding of the Marine Rearing Atlantic Salmon Machias River Project.

Cooke violated the terms of the Maine Pollutant Discharge Elimination System (MEPDES) general permit for net pen aquaculture -- which was attained in 2014 -- by exceeding the maximum biomass in its pens and failing to submit a number of required notices and pieces of documentation.

We recommend that production maximums be reduced to align with historical levels and an annual maximum to control for a worst-case scenario.

Feed Data

For our purposes the analysis of feed, both regular and medicated, is shown in relation to biomass for 2012 until present using data available from the PARIS website for the Rich Passage net pens. In section S2.L. Antibiotic Resistance Monitoring of the current NPDES permit, Ecology is required to monitor unusually high usage levels of antibiotics by the Permittee.



The graph below appears to show consistent peaks in the use of medicated feed use. What monitoring is performed by Ecology?

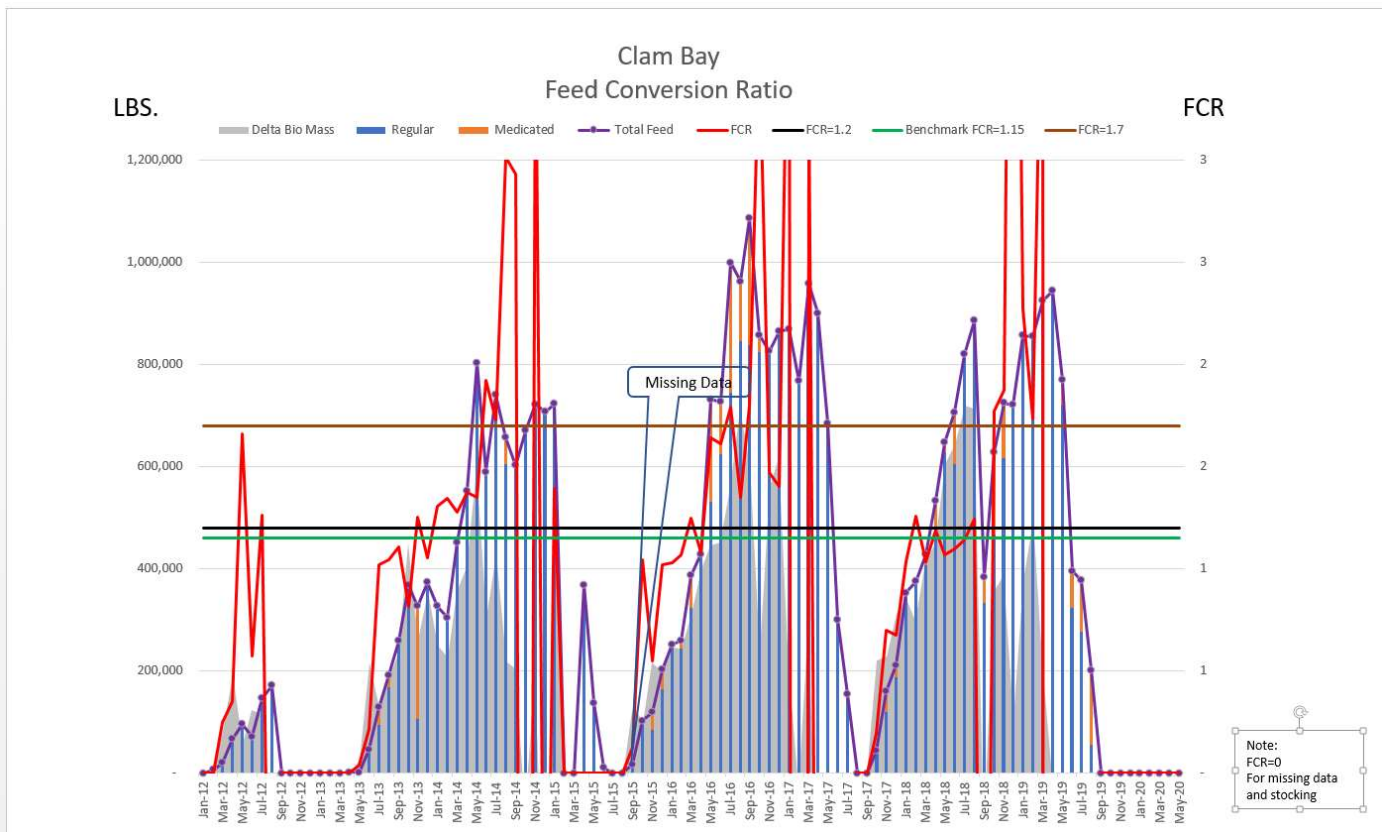
It is our understanding that medicated feed is generally removed prior to harvest. Why does the NPDES permit not contain specific requirements regarding the use of medicated feed during the harvest cycle?

We are also concerned that in all pens it appears, from review of your data, that medicated feed is consistently dispensed when pens are first stocked with what should be healthy fish. Can Ecology explain why?

Has Ecology ever audited the company's feed invoices compared to DMR data to test for reasonableness?

We are aware that: "Current biomass and feed reporting allows Ecology to calculate FCR providing a monthly monitoring point to compare with other months and note abnormalities. Currently, FCRs range from 1.2 to 1.7." (Related response from Ecology from last comment period.) Typically, Atlantic salmon need 1.15 kilograms of feed per one kilogram of body weight which is considered good for Atlantic salmon.

Not being fish scientists, we tried to view the simple relationship between Total Feed and delta Bio Mass for each month using the limited data available to the public. Using Clam Bay as an example, below, there would appear to significantly more variability than was described in Ecology's response during the last comment period. The Feed Conversion Ratio is critical to determining and controlling pollution from uneaten food and fish waste.



We recommend that a model for calculation and visualization be developed and additional data be added to the DMR data available to the public. These would include but not be limited to:

- Starting number of fish
- Number and weight of harvested fish
- Monthly Average Weight of Fish (based on sample)
- Monthly mortalities

The data needs to be auditable and independently verified. **Washingtonians have the right to know what is happening in Public waters.** Ecology has a responsibility to be transparent. It's easy to understand why the public in generally distrustful of the net pen operator and even the State agencies.

Other DMR Measures

During the 2017-2019 NPDES permitting process the Department of Ecology did not re-evaluate AKART based on an assumption that the net pen leases would be gone in the 2022. Because of the change in species, this is no longer a valid assumption and the Department should re-evaluate AKART before a determination of this permit.

Typically AKART is re-evaluated with each permit reissuance. However, with the passage of HB 2957, the marine Atlantic salmon net pen industry in Washington State will be phased out by 2022. Ecology concludes requiring any major changes to net pen siting is not feasible in the limited time the pens can continue to operate. With the legislative ban taking effect and the short anticipated lifespan of the industry, Ecology has determined that it is more important to reissue the permits for the net pens and continue to implement lessons learned since the previous permit issuance, and since the 2017 Cypress Island failure.

Update AKART parameters for the current NPDES Permit.

Impacts on Water Quality from Harvesting Operations

We understand from the permit that:

6.3 Carcass and Leachate Disposal During Harvesting

During harvesting operations, the harvest boat shall be tied securely to the net pens adjacent to the pen that is being harvested. The harvest fish are pumped from the pen and onto the harvest boat. Blood water from the harvesting operations (leachate) shall be contained within the fish harvesting machine that is located on the harvest boat. The harvested fish and blood water are contained and stored inside the fish holds of the harvestboat.

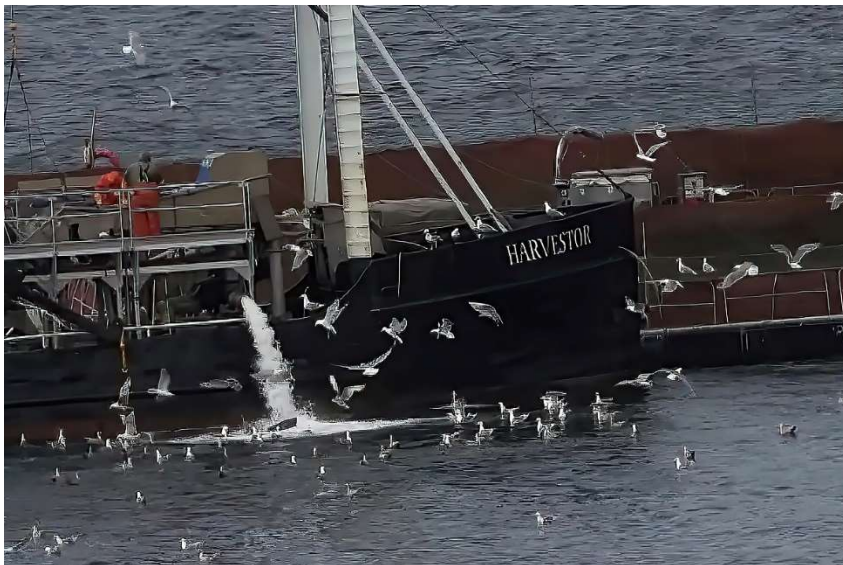
Upon completion of the harvesting operation by the harvest boat at the facility, the harvested fish and blood water are transported by the harvest boat to the upland fish processing plant. The harvested fish and the blood water are then pumped off the vessel at the fish processing plant and the blood water is disposed of into the sanitary sewer system located at the fish processing plant.

More on the harvesting process from the Cypress Island incident report:

The harvest vessel comes alongside the net pen and rigs a 12-inch diameter hose connection from a stock pen to a fish vacuum pump on the vessel. By pulling up on the sides of the stock net, the fish are crowded into a small location. Use of a grading net allows larger fish to be sorted for harvest first. The smaller fish stay in the stock containment net to grow for several more weeks before they too are harvested. The harvested fish are sucked through a pipe to a vacuum pump. Passing through the pump, which is designed to operate without the valves touching the fish, the fish are conveyed to a dewatering table. Workers stun and bleed the fish. The fish are placed in the hold, typically with refrigerated seawater. The vessel sails to Seattle where the fish are processed. All blood and any offal from the stunning and bleeding process is contained on the vessel and discharged into the sanitary sewer system in Seattle.

We're wondering then, **what** attracts large numbers of sea birds and marine mammals to the discharge from the Harvester pictured below during the harvesting operation? Has the discharge ever been tested? What is the potential impact from that outflow on water quality?

Harvesting operation Orchard Rocks net pen May 15, 2020



Harvesting as related to all three state agencies:

1. *Prior to harvest, Cooke must provide WDFW, DNR, and Ecology the approximate dates for harvest. Within one month after harvesting is completed Cooke must provide to WDFW, DNR, and Ecology a report documenting the facility harvested, dates in which harvesting occurred, the total number of fish harvested per day, and any complications that may have occurred during harvesting. Cooke must report immediately if any live fish escaped during harvesting, or if any fish carcass, parts, or offal were discarded into the Puget Sound waters. The discard of carcasses, fish parts, or offal is also a violation of Cooke's NPDES permit. Cooke also must report the number and species of bycatch caught during harvesting. If requested by WDFW, DNR, or Ecology, Cooke must allow appropriately trained personnel from these agencies to monitor the harvesting activities.*

We encourage Ecology to test the outflow from harvesting activities to ensure their compliance with water quality standards.

Ecology should not ignore Cooke's record

We have attempted to address the modification objectively with constructive criticisms and solutions, but from the public's view point, it is impossible to ignore Cooke's past and ongoing behaviors. Cooke purchased the pens in Washington State in 2016. Let's take a look a time line of their corporate behaviors to gain a perspective on how they choose to operate as a company that is "...dedicated to producing a high-quality seafood in a sustainable and environmentally sound manner."

Documented incidents in Washington State:

Date	Description	Source
August 25, 2016	Warning Letter: National Pollutant Discharge Elimination System	Department of Ecology PARIS
May 2017	Anchor Slip/Break Clam Bay	Confirmed by facility personnel and photos.
July 24, 2017	Ecology Illicit discharge noncompliance notification	Department of Ecology PARIS
August 23, 2017	Notice of Violation	Department of Ecology PARIS
AUGUST 22, 2017	It's open season on Atlantic salmon as the public is urged to help mop up a salmon spill from an imploded net holding 305,000 fish at a Cooke Aquaculture fish farm near Cypress Island . In a statement Tuesday morning, Cooke said "exceptionally high tides and currents coinciding with this week's solar eclipse" caused the damage. Cooke estimates several thousand salmon escaped following "structural failure" of a net pen.	https://www.thenewstribune.com/news/local/article168636307.html

Date	Description	Source
October 10, 2017	Just a week after the state Department of Fish and Wildlife approved shipment of 1 million more farmed Atlantic salmon to Cooke Aquaculture's fish farm near Bainbridge Island, another state agency says it has found a hole in the nets and corrosion in the structure of the facility. The Department of Natural Resources on Monday notified Cooke that it is in default of the terms of its lease at its Rich Passage operation. It ordered the facility repaired within 60 days, or the department may cancel the company's lease for the facility, which operates over public bed lands.	https://www.seattletimes.com/seattle-news/environment/fish-farm-has-60-days-to-fix-nets-outside-seattle-as-1-million-atlantic-salmon-move-in/
December 12, 2017	Administrative Order and Notice of Penalty Without water quality protections in place, Cooke Aquaculture Pacific (Cooke) has repeatedly cleaned dirty equipment and discharged polluted wastewater into Puget Sound. Cooke operates commercial Atlantic salmon net pens in Washington state.	Department of Ecology PARIS
December 17, 2017	Cooke Aquaculture must shut down and remove its Port Angeles Atlantic salmon farm after the state deemed it unsafe and illegal and canceled its lease.	https://www.seattletimes.com/seattle-news/environment/violations-prompt-washington-state-to-cancel-atlantic-salmon-farm-lease-at-port-angeles/
January 30, 2018	Cooke Aquaculture Pacific vastly underrepresented the scope of a catastrophic Atlantic salmon net-pen spill at its Cypress Island farm last August and misled the public and regulators about the cause, according to a new report by state investigators that blames the pen collapse on company negligence. The investigation found that Cooke lowballed the number of escaped fish by more	https://www.seattletimes.com/seattle-news/fish-farm-caused-atlantic-salmon-spill-state-says-then-tried-to-hide-how-bad-it-was/

Date	Description	Source
	than half, and did not do essential maintenance at its farm, causing the escape	
February 18, 2018	Cooke Aquaculture inspection finds problems at 2 other Atlantic salmon pens. At the Fort Ward facility in Rich Passage, inspectors found chain links on an anchor line had lost up to 75 percent of holding capacity because of corrosion. At Cooke's Hope Island facility, five miles from the mouth of the Skagit River, inspections conducted by Cooke also "do not appear in accordance with manufacturer's recommendations or industry standards," the report found.	https://www.seattletimes.com/seattle-news/environment/cooke-aquaculture-inspection-finds-problems-at-2-other-operations/
Feb-Sept 2018	Workers hammer rust off Orchard Rocks pens	Personal observations and communication from Ecology
Oct 15-20, 2019	Orchard Rocks net pen sinking due to hole in pontoon	Personal observations and photos
December 18th, 2018	The Washington Department of Fish and Wildlife considers the exotic strain of PRV to be an unacceptable risk to native stocks of Pacific salmon. Under the conditions of its permit, Cooke Aquaculture Pacific was required to destroy the fish.	https://www.seattletimes.com/seattle-news/environment/fish-farmer-destroys-800000-juvenile-atlantic-salmon-due-to-disease-second-purge-in-past-year/
October 22, 2019	"A small hole was identified in one bulkheaded pontoon on the Southeast portion of the Orchard Rocks net pen and we completed the necessary welding repairs immediately today. We will also have an engineer onsite tomorrow to assess the welding repair and pontoon. There were no fish in the corner section of the pen where the pontoon required repair," said a Cooke Aquaculture representative in a statement	https://www.king5.com/article/news/local/no-salmon-released-when-cooke-aquaculture-pen-sinks/281-b4741721-30f3-402a-bd2a-017edcc87b7b

These types of incidents are not just unique to Cooke here in Washington State. Below is a recap of events in North America:

Approximate Date	Description	Source
March 4, 2016	<p>New Brunswick-based multi-national farmed salmon producer Cooke Aquaculture had nothing but bad news during the past month, including yet another product recall from the Canadian Food Inspection Agency (CFIA), a valuable complaint from the mayor of the town housing Cooke's Nova Scotia headquarters and a notice to consumers to avoid eating Cooke's primary product, Atlantic salmon grown in Nova Scotia, New Brunswick and Newfoundland.</p> <p>Government product recalls</p> <p>In late January, CFIA issues a recall notice for salmon products produced by subsidiary True North Salmon, based on evidence that the fish might contain particles of a foreign substance. In 2012, CFIA issues a recall warning when Cooke distributed framed mussels which were alleged to contain marine biotoxins. Also in 2012, three Cooke executives - including CEO and founder Glenn Cooke - faced federal felony charges for dumping gallons of deadly insecticides near their salmon cages in the Bay of Fundy.</p>	http://www.southcoasttoday.ca/content/more-troubles-cooke-aqua-product-recall-do-not-buy-notice-farmed-salmon-loan-demands
September 11, 2017	<p>Atlantic salmon, believed to be part of a cohort that escaped from a U.S.-based fish farm on Aug. 19, are being hauled in by anglers fishing out of French Creek on mid-Vancouver Island. Cameron Wheatley, owner of the French Creek Store at the marina just north of Parksville, received the head of an apparent Atlantic salmon from a local angler late Sunday morning, Sept. 10. He is freezing the head, along with two more fish heads and one whole farm-raised salmon, to turn over to Fisheries and Oceans Canada</p>	https://fisherynation.com/archives/63166
October 12, 2017	<p>Cooke Aquaculture offered to pay a premium price for Atlantic salmon caught by the Lummi Nation after a major spill from the company's Cypress Island fish farm if the tribe would not advocate getting rid of net pen aquaculture. The tribe tartly rejected the offer. "Your demand to keep quiet for a few extra dollars is insulting," Timothy Ballew II, chairman of the Lummi Indian Business Council, responded in a Sept. 14 letter. Nell Halse, vice president for communications for Cooke, said Wednesday the offer "was not an attempt to muzzle or insult the Lummi Nation, but rather an effort to</p>	https://mynorthwest.com/781546/lummi-chairman-calls-bribery-attempt-insulating-and-preposterous/?show=comments#comments

Approximate Date	Description	Source
	negotiate toward common ground and respect the interests and concerns of both parties at the table	
March 30, 2018	Cooke Aquaculture harvested all the fish at its site near Gaultois last October following the detection of five fish with the infectious disease, and did so again in a facility on the south coast of Newfoundland in February.	https://aquaculturemag.com/2018/04/03/isa-virus-found-in-salmon-at-southern-newfoundland-aquaculture-site/
April 3, 2018	Freedom of Information Act request asking for the status of a \$25 million loan extended to Cooke Aquaculture in 2012. A newspaper article disclosed that Cooke Aquaculture is eligible for \$4 million in “loan forgiveness” to fund a university research chair named after the company. The \$800,000 spent by Cooke funded a chair held by an industry friendly researcher.	https://www.halifaxexaminer.ca/featured/cooke-aquaculture-is-eligible-for-4-million-in-loan-forgiveness-to-fund-a-university-research-chair-named-after-the-company/#1 . We’re giving Cooke Aquaculture a free research cha
May 17, 2018	For the second time in five years, a Canadian salmon aquaculture firm has admitted in a New Brunswick courtroom to illegally using a pesticide known to kill lobsters for treating salmon off an island that abuts the Maine border. Cooke was fined \$500,000 Canadian.	https://bangordailynews.com/2018/05/17/business/report-canadian-salmon-firm-admits-using-lobster-killing-pesticide-near-maine-border/
August 7, 2018	<p>Between 2,000 and 3,000 fish escaped from Cooke Aquaculture's Hermitage Bay salmon farm on Newfoundland's south coast in July, the company confirms. Incident happened after net extensions were sewn onto a pen at the operation. extensions were sewn onto a pen at the operation.</p> <p>The escape of thousands of farmed salmon on the south coast of Newfoundland is a significant concern, as is the lack of public notification about the incident.</p>	<p>https://www.asf.ca/news-and-magazine/salmon-news/salmon-escaped-from-cooke-aquacultures-farm-company-confirms</p> <p>https://fisherynation.com/archives/tag/cooke-aquaculture</p>

Rich Passage Estates Homeowners' Association
 PO Box 11683
 Bainbridge Island, WA 98110

Approximate Date	Description	Source
December 14, 2018	British Columbia will phase out 17 commercial salmon farms off the northeast coast of Vancouver Island to aid in the migration and restoration of wild West Coast salmon runs, under an agreement between the B.C. government and Aboriginal First Nations	https://www.seattlepi.com/local/politics/article/British-Columbia-salmon-orca-fish-farm-phase-out-13467254.php
August 20, 2019	A pipe broke at the Deer Island Bay of Fundy Cooke facility while fish were being transferred from a net pen to a boat for sea lice treatment. Initial estimates by Cooke Aquaculture set the total of escapees at 2,500, but company representatives have since lowered that estimate to 1,000 fish, Researchers for the Atlantic Salmon Federation have captured and removed 53 Atlantic salmon from a New Brunswick river	https://www.asf.ca/news-and-magazine/news-releases/salmon-escape-in-bay-of-fundy
October 9, 2019	Maine Department of Agriculture finds that unacceptable fish handling incidents have occurred at the Bingham hatchery after a video went viral.	https://www.timesrecord.com/articles/maine-1/ingham-aquaculture-facility-kept-fish-in-cruel-unsanitary-conditions-group-says/
October 16, 2019	As part of a consent agreement with the Maine Department of Environmental Protection, Cooke Aquaculture has agreed to pay \$156,213 to fund the Marine Rearing Atlantic Salmon Machias River Project, which aims to breed and restore native populations of Atlantic salmon in the Machias River. Cooke violated its operating permit by having too many fish in one or more pens, failing to conduct environmental sampling, and failing to follow a variety of clerical procedures that include timely filing of complete and accurate pollution sampling reports and timely submissions of fish spill prevention plans. The infractions violated the terms of Cooke's operating permit, DEP rules and state law. "The administrative consent agreement was created to determine a path forward and to start anew - wipe the slate clean," Cooke spokesman Joel Richardson said.	https://bangordailynews.com/2019/10/16/news/down-east/canadian-salmon-firm-will-pay-156k-over-fish-pen-violations-to-fund-salmon-restocking/ https://www.seafoodsource.com/news/aquaculture/cooke-to-pay-fine-for-overstocking-maine-salmon-farms-not-conducting-environmental-testing
October 31, 2019	Just weeks after Cooke Aquaculture agreed to pay the state more than \$150,000 to settle numerous violations at several of its salmon net pen sites in eastern Maine, the Department of Marine Resources is asking for public comment on the company's application for a 20-year lease renewal.	https://www.ellsworthamerican.com/maine-news/waterfront/dmr-seeks-comment-on-cooke-aquaculture-lease-renewal/

Approximate Date	Description	Source
November 6, 2019	Last week, the Atlantic States Marine Fisheries Commission, the partnership, or “interstate compact,” that sets harvest limits for 27 fisheries up and down the Atlantic Coast, officially accused Virginia of allowing Omega Protein to overfish,, In a December 2017 press release on the deal, Cooke hinted at a new use: “The animal feed ingredients produced by Omega Protein are an important component in Cooke Aquaculture’s production of healthy Atlantic salmon, making this acquisition a strategic move that greatly enhances Cooke’s vertical integration.” So instead of rockfish, maybe the Bay’s menhaden will be feeding farm-raised salmon in Canada.	https://fisherynation.com/archives/ag/cooke-aquaculture

Decisions to modify water quality permits should include Cooke’s record both past and present. The addition of more restrictions here is not a guarantee of future compliance.

Ecology should absolutely consider Cooke’s record in its decision to modify NPDES permits.

Conclusions

In some senses, we’re on the paradoxical road to Abilene where a group of people collectively decide on a course of action that is counter to the preferences of many. The general consensus among the public here is that marine net pen aquaculture should not be allowed to continue, but that is not what the current law allows.

Past experiences and ongoing patterns of behavior with this net pen operator alone should be enough to deny permit modifications and the continued operation of net pens in Puget Sound. Without incorporating the additional corrective measures as bulleted below, it is difficult to assess, control and mitigate critical aspects of the NPDES permit. We are asking the Department of Ecology to strongly consider each of the points below that have the potential to: provide needed information, improve water quality standards and reduce the risks associated with the net pen operations, and those designed to increase transparency:

- Discussions to modify the NPDES permits should be tabled until the lifting of Governor Inslee’s Stay Home, Stay Healthy proclamation has ended and Washington residents are afforded the opportunity to comment in the communities where these net pens currently operate.
- Discussions to modify the NPDES permits should be tabled until related lawsuits challenging the Department of Fish and Wildlife are concluded.

- We recommend that the guidance be updated with current science and best industry practices with respect to raising steelhead in marine net pens. The State should withdraw their Mitigated Determination of Non-Significance, issue a Determination of Significance, and draft an Environmental Impact Statement to assess the full impacts of this proposed permit modification.
- No decision to modify the NPDES permits should be made until the public has a chance to comment on State of Science on Net-Pen Aquaculture in Puget Sound, Washington.
- Any modification of the NPDES permit should be conditioned on strict adherence to inspections that are required “approximately” every two years and any other legally-binding provisions.
- A decision to modify the current NPDES permit should be tabled until all pens are inspected and deficiencies addressed.
- Ecology should require an internal and external audit to ensure the reliability of training and emergency response protocols.
- Require a clean set of predator nets or some other type of barrier after harvest on all pens to prevent predation by marine mammals on other stocked pens and disallow the partial stocking of pens in a particular net pen array to provide for public and worker safety.
- Require proof such as photo evidence or videos to document that containment measures are in place for activities related to structural maintenance that have the potential to impact water quality.
- Implement a specific collection interval...weekly, bi-weekly related to the collection of recyclables like pallets and feed bags to reduce the likelihood of discharge to State waters.
- Any washing of containers that hold dead fish should be prohibited to prevent discharges to State waters.
- Parking of personal vehicles over water should be prohibited to prevent accidental discharges to Washington State waters.
- Nets, after removal have been stored on the dock in the past and Ecology can prevent unwanted discharges to Washington State waters by requiring that they be removed directly by barge.
- Strict adherence to provisions related to the net cleaning requirement that at the end of the growing cycle, after the fish have been harvested out, that nets are

removed from the water and transported to a land based cleaning and repair facility.

- The Feed Conversion Rates (FCR's) and Specific Feed Rates (SFR's) calculated by the Department of Ecology should be made available in the PARIS website.
- We recommend that a model for calculation and visualization be developed and additional data be added to the DMR data available to the public. These would include but not be limited to:
 - Starting number of fish
 - Number and weight of harvested fish
 - Monthly Average Weight of Fish (based on sample)
 - Monthly mortalities
- Update AKART parameters for the current NPDES Permit.
- We recommend that production maximums be reduced to align with historical levels and an annual maximum to control for a worst-case scenario.
- We encourage Ecology to test the outflow from harvesting activities to ensure their compliance with water quality standards.
- Ecology should absolutely consider Cooke's record in its decision to modify NPDES permits. This alone should be enough to grant a denial to permit modifications.