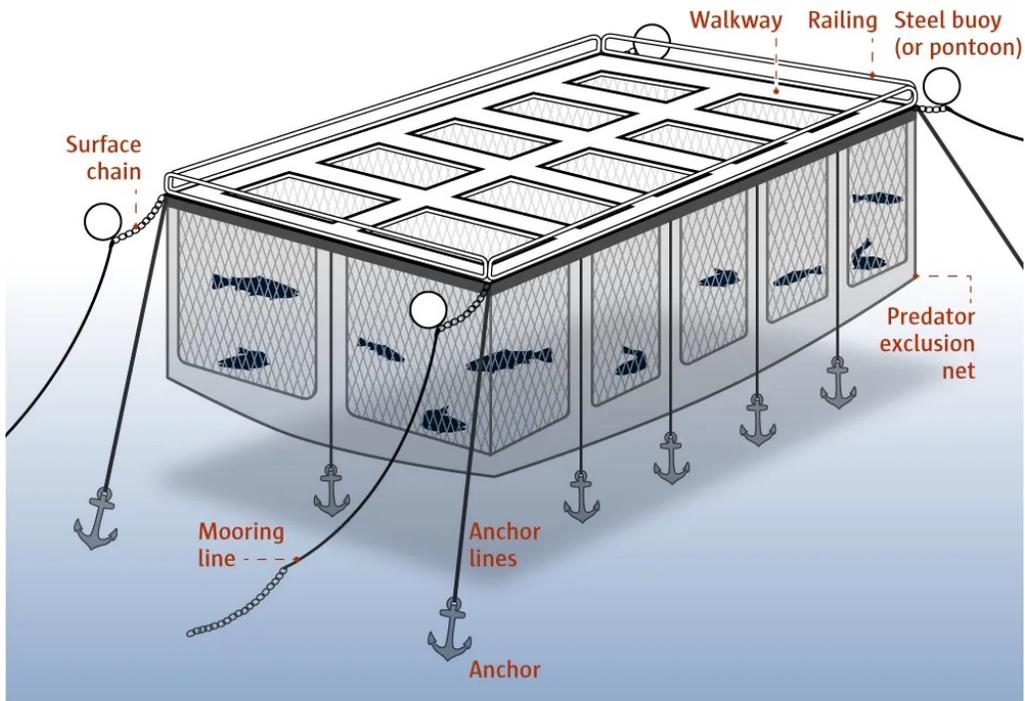


Net Pen Fish Farms in Puget Sound
A Position Paper from the Olympic Forest Coalition
by Karen Sullivan
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What is a net pen?

Cooke Aquaculture keeps fish in arrays of nets surrounded by a walkway. The pens are secured to the seafloor with anchors and mooring lines.



Source: Department of Natural Resources

EMILY M. ENG / THE SEATTLE TIMES

Executive Summary:

Healthy estuaries are essential for healthy populations of fish and wildlife that use forests and the streams that nourish them. These include endangered and declining species such as marbled murrelets and salmon, which rely on both ecosystems. The bodies of spawned-out salmon help keep forest soils fertile. Gravity and erosion cause forests to continuously lose soil and nutrients to the water, and migrating salmon help reverse this process by eating fish and krill at sea and bringing their nutrient-rich body mass back upstream into the forests. When bears pull fish onto the shores of rivers and streams every year, the decomposing salmon, rich in nitrogen, enhance the soil.¹ Streams that lack dead adult salmon also have fewer insects (less 'fish food'), so that the surviving fish fry are smaller and belong to fewer families. The resulting loss of genetic diversity could make these salmon populations more vulnerable to extinction in a changing world.²

The Olympic Forest Coalition³ is concerned about impacts from commercial fish aquaculture as it has been conducted in Puget Sound. We take positions only after thorough investigation of the science and documented facts of an issue, and we offer this paper as our position on net pen aquaculture in Puget Sound waters.

By coincidence, all commercial net pen leases in public waters in Washington State and licenses in British Columbia (B.C.) expire in 2022, with the majority terminating in June.⁴ Expired leases in Washington have converted to month-to-month. Washington's Commissioner of Public Lands Hilary Franz and Canada's Fisheries Minister Joyce Murray have both been independently deciding between acceding to pressure from mega seafood corporations to issue new 6-12-year contracts, or to coastwide calls from Tribal and First Nations, scientists, wild fish and orca advocates, and the public to remove this polluting industry from public waters. Many are calling for a transition to land-based, closed containment systems.

More than 100 of B.C.'s fish farm licenses were set to expire on June 30, 2022. On June 22, Minister Murray announced⁵ that the Canadian government is moving to transition all net pen salmon farms from B.C. The government plans to hold consultations in each region with the industry, First Nations, and local communities. In the interim, she renewed the majority of the leases for two years. This is important because two years is not enough time for a full grow-out cycle of Atlantic salmon, signaling that the likely intent is for the industry to grow out what fish remain, ahead of the transitions.⁶

Washington is now at a major decision point. As a result of B.C.'s announcement that they will transition away from open water net pens, Washington is not only the last state to allow this practice, but also the last jurisdiction on the entire North Pacific Coast that has not already banned, excluded, or committed to phasing out this industry.

While most people would agree that feeding a hungry world is necessary and good, most would also agree that damaging or destroying natural ecosystems (or bending regulations) in order to do that is bad - and, with the aquaculture industry, completely unnecessary. Aquaculture is considered an essential way to produce protein for humanity, a "blue economy" defined as "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems." But aquaculture in the form of net pens in ocean

water has proven to be a double-edged sword for Puget Sound, with significant impacts⁷ in the absence of conscientious oversight and ethical management.

It's not like models of sustainable finfish aquaculture don't exist. Near Canada's Bay of Fundy, Atlantic salmon are profitably raised in a saltwater closed-loop land-based facility that has zero chance of fish escape, uses no antibiotics or growth hormones, and produces zero wastewater.⁸ Then there's the up-and-coming technology of offshore fish farms raising warm-water fish.⁹ And in southwestern coastal Spain, a formerly degraded cattle ranch has been converted to an ecologically sustainable form of fish farming that uses no feed, no chemicals, and no medicinal compounds, produces not only remarkably delicious fish that are in high demand, but also has no outbreaks of viral or parasitic disease. This fish farm has also become a bird sanctuary.¹⁰

None of these are without their own problems. Land-based recirculating farms can require 24-hour electricity and the attendant greenhouse gases that come with it. A power failure or a viral outbreak could be devastating. Even without such disasters, the expenses make it harder to be profitable. Of the 61 recirculating fish farms that were developed in the United States over the past 20 years, only 14 were still in operation by 2016.¹¹ But there are land-based models that remain both financially and ecologically successful.¹² Offshore fish farms are vulnerable to severe weather and to predators breaking through nets; in the case of air-breathing marine mammals, drownings can occur when, for example, a seal gets trapped. And in Spain's Veta la Palma, birds eat 20 percent of the fish produced, but the farm owners call this a measure of success for a self-sustaining ecological loop.

Both the global seafood corporation Cooke Aquaculture and Washington's advocacy group Wild Fish Conservancy (WFC) have applied to lease the Puget Sound net pen sites when the existing contracts end.¹³ WFC proposes to restore the habitat and public access to the sites,¹⁴ while Cooke would continue to use and presumably degrade them for another twelve years.

These leases are nearly impossible to terminate once agreed upon. For example, in 2017, a catastrophic collapse of a net pen at Cypress Island operated by Cooke Aquaculture released more than 250,000 diseased Atlantic salmon into the Salish Sea and beyond, which caused Washington's Department of Natural Resources (DNR) to terminate Cooke's lease there. DNR also terminated Cooke's lease at Port Angeles after inspections found it too was out of compliance. Several years later, Cooke has continued to appeal in four separate lawsuits the termination of these two leases, despite multiple Court rulings upholding DNR's decision on both lease sites. Even in the most obvious cases of an industry breaking the terms of its lease, it is extremely difficult to terminate the leases once they exist. Who will now get the lease in Washington? It is as yet undecided.

This position paper presents evidence of chronic malfeasance by Cooke Aquaculture, along with why we support for the Wild Fish Conservancy's plans to lease and restore the sites presently occupied by Cooke.

Who regulates net pen aquaculture?

Net pens are regulated primarily by Washington State's Department of Fish and Wildlife (fish health), the Department of Ecology (pollution impacts), the Department of Natural Resources (lease compliance), and the Department of Agriculture (regulator in name only with no clear duties). The Department of Fish and Wildlife (WDFW) arguably has the most regulatory power; it was the lead public process coordinator and final decision-maker on Cooke's application to transition to triploid steelhead after a law was passed in 2018 banning Atlantic salmon farming. The Department of Ecology (DOE) is responsible for issuing water pollution permits, and has often deferred to WDFW's opinions.

After the collapse at Cypress Island, the passage of HB 2957¹⁵ in 2018 was intended to eliminate disaster-prone net pen aquaculture for non-native fish and all the risks it poses to Puget Sound, by December 2022. So, Washingtonians who overwhelmingly supported it thought they were getting rid of net pens, and were not expecting to see a loophole in the law exploited when Cooke immediately applied to farm native steelhead trout. While the law does not explicitly prohibit native fish from being reared in open water net pens, it does impose a series of other requirements, and establishes the legislature's clear intent that future marine net pen aquaculture be subjected to greater scrutiny.

New guidance¹⁶ issued in April by DOE describes the regulatory requirements for siting, permitting, and operating commercial net pens for fish farming. It also summarizes current science and best management practices. This guidance was issued after passage of the aforementioned law banning the raising of Atlantic salmon in net pens. The DOE needed to respond to the public outcry not only over the Cypress Island net pen collapse, but also for its granting of a permit to Cooke Aquaculture to continue operations with steelhead despite overwhelming public opposition.

The new guidance focuses on water quality, the benthic environment, biofouling, marine debris, fish health, fish genetics, ecological issues, and escape prevention and response. We applaud DOE for this guidance, but with Cooke Aquaculture's documented history of negligence, noncompliance and ecological disaster informing our sense of caution, we question why the regulatory community would expect a leopard to change its spots.

Unfortunately, by considering Cooke's new triploid steelhead net pen project as merely an extension of past practices, and by appearing to ignore the will of the public and their unprecedented, knowledgeable participation in the public process, the DOE by granting Cooke's permit is not only failing to meet the new standards set by HB 2957, it is also circumventing the will of the public.

Public Trust, Private Subsidy:

A legal principle derived from ancient English common law, called the Public Trust Doctrine,¹⁷ is based on the idea that certain natural resources cannot be fairly or effectively managed by private owners. Rather, these resources should be held in trust by government, which must manage their consumptive use and protection on behalf of present and future citizens. If government fails to do so, citizens can seek remedy in the courts.

Historically, the Public Trust Doctrine applied to a limited set of natural resources, such as shellfish beds and submerged lands under navigable waters, in order to protect them from becoming private property. But courts and legal scholars have expanded the definition of trust resources to include wildlife, oceans, and ecosystem services in general. The Public Trust Doctrine is created, developed, and enforced by the judiciary rather than the legislature, so the extent of its applicability can only be determined by state court decisions. States are free to determine the geographic extent of the resources and lands they hold in trust, as well as the degree to which they recognize private rights in trust lands. But they are not free to abolish the Public Trust Doctrine.

A subsidy can be defined as a financial contribution by a government, such as grants, loans, price support, or revenue foregone or not collected.¹⁸ The public could reasonably be expected to construe that a subsidy may exist if a government agency fails to enforce regulations designed to prevent a private entity from harming public resources, especially when that failure benefits the exploitation of the resource. The same could be said if a government agency ignores or downplays public complaints about abuse of permit privileges, or allows an industry to be dishonest while self-monitoring. Similarly, a subsidy could be construed if a government agency fails to collect fines and penalties after violation of permit conditions, or even the law. And where the government lacks the enabling legislation to provide better oversight, it is up to the legislature to fix it. Finger-pointing is no excuse. In the case of net pens in Puget Sound, the State claimed its regulatory hands were tied; therefore, they said, legislative scrutiny is warranted.

However, this is not a new problem. Yet the finger-pointing continues.

If, after repeated violations, the fines and penalties levied over time do not appear to provide enough disincentive for an industry to stop violating its permit or the law, then the public is entitled to perceive that the industry regards these fines as an acceptable cost of doing business. Lack of enforcement resulting in insufficient penalties for harm done to the public trust could therefore be construed as a subsidy that helps the industry stay more profitable. Headquartered in New Brunswick, Canada, Cooke Aquaculture has finfish operations in several countries, and in 2018 alone had sales of \$1.9 billion.¹⁹ Between 2000 and 2018, Cooke paid more than \$11 million in fines, mostly for environment-related violations.²⁰ It averaged out to about \$611,000 per year in fines, or, for perspective, about 1/3 of one percent of 2018's sales.

Behavior can indicate intent. While leasing public waters in Washington State, Cooke Aquaculture threatened during legislative testimony, to sue the State under the North American Free Trade Agreement (NAFTA) if a bill was passed banning commercial marine net pen aquaculture for non-native fish. It has appealed several government actions, including lease terminations and fines, and it has used cease-and-desist letters to attempt to silence local environmental advocates. At least one cease-and-desist letter came during the public comment period that was determining the future of their new proposal to farm triploid steelhead. That could reasonably be interpreted as intimidation.

A company that habitually uses threats and litigation to avoid accountability for violating environmental laws, or to influence the decision-making process of legislators, government officials and Washington citizens, is not acting in the best interest of the public. Beyond costly lawsuits and appeals, this industry puts a substantial financial burden on Washington citizens through the inherent public costs required to manage and regulate them. These costs include (but aren't limited to) general monitoring, oversight, enforcement, development of management criteria, compliance monitoring of water quality and sediment accumulation, and emergency responses to diseases, viral and parasitic outbreaks, and escape events. **These costs would be significantly reduced and, in many cases, eliminated entirely by transitioning to closed containment land-based facilities.**

Most of the hundreds of fish farms worldwide (in Canada, the U.S., Norway, Scotland, and Chile) are owned by four large companies. Each of these companies, including Cooke Aquaculture, owns facilities in multiple locations.²¹

With Cooke Aquaculture's enormous size worldwide, fines for local violations have not appeared to be a significant enough deterrent to stop the violations. The following timeline demonstrates how Cooke's management of its net pens has impacted Puget Sound and other areas in multiple ways, including:

1. Fish sewage, dropped food, carcass leachate, blood water, extra feed, dead fouling organisms, heavy metals and marine debris on the environment around and beneath the net pens;
2. Spread of viruses and parasites not only throughout the pens but also into wild fish that tend to congregate near them, and also via net pen escapees into wild fish populations;
3. Impacts to non-targeted species (including humans) from the use of antibiotics, growth hormones, anti-parasitic poisons, and other compounds;²²
4. Impacts to public capacity to trust the government agencies that regulate this industry.

As an example of the sheer scale of impacts, the effluent from these net pens is huge. A detailed study using data from multiple sources²³ found that the estimated amount of untreated nitrogen discharged by Cooke's Atlantic salmon net pens in Puget Sound on a daily basis was roughly equivalent to the amount of nitrogen discharged in waste to be treated by the city of Tacoma. Municipalities would never be allowed to discharge untreated waste directly into Puget Sound, but this restriction does not apply to net pen operations. For phosphorus, the amount of daily discharge from the net pens was **roughly equivalent to the cities of Port Angeles, Everett, Bellingham, and Tacoma combined**. Excess nutrients can pollute groundwater supplies as well as seawater.

Timeline:

2010

A Judge orders federal agencies to reconsider the effects of Atlantic salmon net pens in Puget Sound on endangered species, using best available science, as mandated under the Endangered Species Act.

A scientific study suggests that "Fish-farming structures in coastal waters are highly attractive to wild fish. Several studies have estimated that tons to tens of tons of wild fish aggregate around fish farms. These estimates assumed that the majority of wild fish are concentrated immediately beneath farms. [We found] the total abundance of wild fish was 20 times greater at the farm than at the 200-meter sampling distance [away from the farm]."²⁴ Fish farms also attract predators such as sea lions and birds.



Figure 1: Predators (sea lions) covering horizontal surfaces of net pens, Rich Passage, 2018. Photo obtained from public comments by a homeowner at Rich Passage, Bainbridge Island.



Figure 2: Seabirds are attracted in large numbers to net pens. Photo obtained from public comments by a homeowner at Rich Passage, Bainbridge Island.

2011

EPA and NOAA complete an *informal* review and maintain their stance that the regulations in place are adequate. The agencies conclude that Atlantic salmon net pen aquaculture is “not likely to adversely affect” any Endangered Species Act (ESA) listed species in Puget Sound.

2012

Three Cooke executives including the CEO face federal felony charges for dumping gallons of deadly insecticide near their salmon cages in Canada's Bay of Fundy.²⁵ They used an agricultural pesticide that's illegal for marine use in Canada and is highly toxic to lobsters (many were killed), but is used to treat sea lice in Europe. A \$500,000 penalty is assessed and charges are withdrawn. Several years later, the same thing will happen again.

At Bainbridge Island, WA net pens, which at the time were owned by Icicle Seafoods, a large-scale outbreak of Infectious Hematopoietic Necrosis²⁶ (IHN) kills over one million pounds of farmed Atlantic salmon over a 5-month period during a time when juvenile wild salmon are out-migrating through Puget Sound.²⁷ Icicle/American Gold Seafood refuses to allow the state access for inspection. This incident is not mentioned in required annual reports either from the industry or by any of the state agencies involved.²⁸

2013

January: The Canadian Food Inspection Agency (CFIA) declares fit for human consumption 240,000 Atlantic salmon with Infectious Salmon Anemia (ISA), an influenza-like virus that can mutate in unpredictable ways, including if it comes in contact with another flu virus in a human being. It also infects brown and rainbow trout. It is the first time the CFIA opts not to destroy fish carrying the virus since it started regulating the fish farming industry in 2005. Previously it had reimbursed Cooke for losses via disease, but this grew too expensive. The U.S. does not import fish that carry the ISA virus, but this implies rigorous inspections. Domestically-raised fish are not subject to an import ban. The U.S. imports 80 percent of its seafood.²⁹ Proving infection in farmed fish for human consumption is extremely difficult because:

1. The industry self-reports its own disease outbreaks.
2. State agencies don't test at all once fish are planted in pens, arguing they have no authority to test without permission from Cooke Aquaculture.
3. All information about where aquaculture products are sold is completely proprietary, so we have no idea where Cooke sells its products.
4. Even if you can find Cooke's products, it's extremely expensive to sample and test those fish for the presence of viruses and other diseases.

2014 - 2015

In 2014 Cooke buys the Scottish subsidiary of Marine Harvest in the Orkney and Shetland Islands in a deal worth \$203 million. In 2015, Cooke buys Virginia's Wanchese Fish Company

and announces formation of Cooke Seafood USA Inc.³⁰ By 2022 Cooke will have bought more than 100 companies and employ more than 9,000 employees worldwide.



Figure 3: From Cooke Aquaculture's website.³¹

2016

Cooke purchases the net pens in Puget Sound from Icicle Seafoods for about \$70 million,³² and immediately attempts to increase the limit on the size of net pen acreage in Rich Passage near Bainbridge Island by 150 percent.

At least two recalls and "Do not buy" notices are issued for Cooke salmon and other products based on evidence that products might contain particles of a foreign substance and marine biotoxins.³³ The Seafood Watch consumer guide cites farmed Atlantic salmon grown by Cooke and others in "feedlot" conditions in open net pen cages as food to avoid.³⁴

Warning letter from Washington State to Cooke Aquaculture about pollution permit violation for unpermitted washing and discharges. (See photo below.) This warning letter follows a month-long incident of power washing stock nets into State waters. Nets are supposed to be removed from the water and washed upland, with effluent and debris caught and disposed of, but Cooke employee explained to citizen complainants that it's a cost saving measure approved by management. Previous net pen owners were known to transport nets at the end of the growing season by truck, which left foul debris and discharges on Bainbridge roads. The appropriate remedy was that nets would be shipped away from the pens by barge. Cooke did not do that, and was photographed two years later, in 2018 using a power washer at Rich Passage, that carried effluent high in the air as well as into the water.³⁵



Figure 4: Power washer cleaning nets, Fort Ward (Rich Passage) pens. Photo from 2018, a year after Cooke was fined for doing this in violation of permit. Photo obtained from public comments by a homeowner at Rich Passage, Bainbridge Island.

2017

May: Anchor break at Clam Bay net pen.

July: Notification, illicit discharge.

August: One of the largest ecological disasters in Puget Sound history. A net pen on Cypress Island owned and operated by Cooke Aquaculture collapses (see photo below), and at least 250,000 non-native Atlantic salmon infected with an exotic virus escape into Puget Sound and beyond.³⁶ Drone footage captured the devastation.³⁷ The virus originated in Iceland where Cooke purchases their eggs. Cooke publicly blamed extreme tides coinciding with a solar eclipse for tearing apart their net pens, a claim that was met with scathing disbelief by the State.³⁸ Employee interviews revealed that on Cypress Island the entire net pen structure was "bending and twisting" after at least 3 anchor lines broke. The problem had existed for at least a month, but Cooke chose to stock the pens anyway. "Walkways on east end buckling ... main bridge disconnected, pens disconnected, failing," wrote the site manager before he deemed the net pens too unsafe for workers. "Two compromised cages, then four, then six ... after that, walkways were flipping, it was catastrophic, at that point it was a salvage operation."

At the time of the collapse, every other net pen in Puget Sound was stocked with fish that also originated from Iceland and were reared in Cooke's hatchery. WDFW never conducted viral testing of other stocked net pens, including two at Cypress, because they said they did not have authority to test fish once they were stocked in net pens without permission from Cooke Aquaculture.

September: In the month after Cooke's Cypress Island spill, Canadian officials find escaped Atlantic salmon have traveled further than expected and are 250 kilometers north of the spill site. In a multi-year watch/alert program for reporting Atlantic salmon, few sightings were reported

since 1991, with only three confirmed between 2011 and 2017. Sightings are now reported more than 42 miles up the Skagit River,³⁹ and the Lummi Indian Nation reports catching more than 43,500 Atlantic salmon.⁴⁰

October: Cooke offers the Lummi Tribe a premium price for Atlantic salmon they caught after the spill in exchange for their silence/nonsupport on getting rid of net pen aquaculture. The Tribe refuses.⁴¹

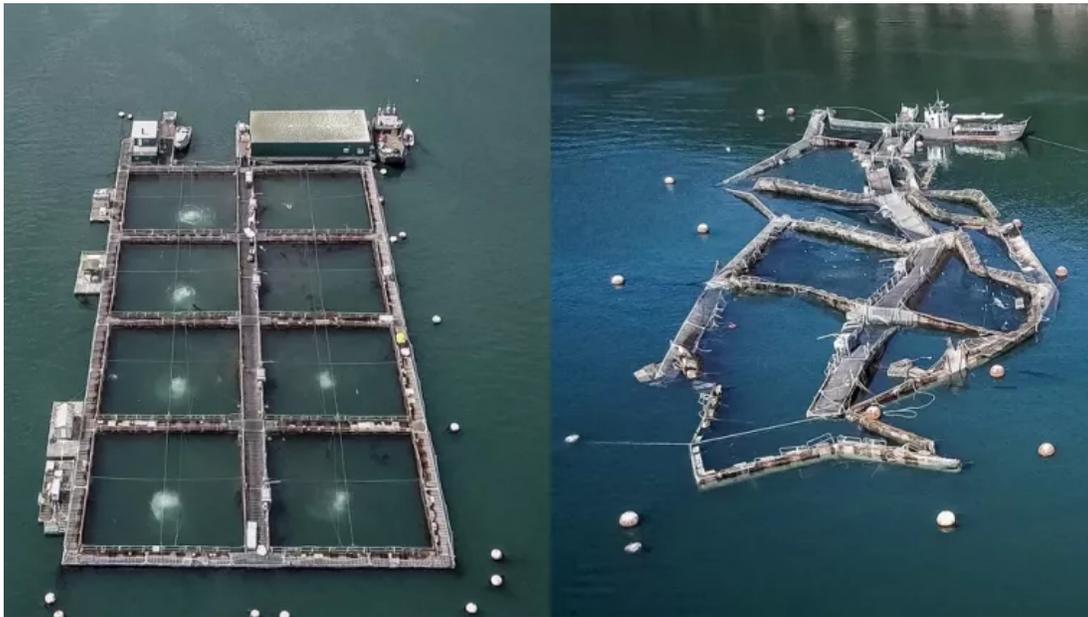


Figure 5: Cypress Island net pens before and after collapse.

October: Governor Jay Inslee and Commissioner of Public Lands Hilary Franz respond to Cooke Aquaculture's plan to transfer 1 million Atlantic salmon smolts from Rochester, WA to an existing net pen in Puget Sound, only two months after the Cypress Island collapse and after a moratorium on new permits and leases. The Governor and Commissioner reiterate their lack of confidence in Cooke Aquaculture and state their inability to prevent Cooke from moving forward with its plans.⁴²

November: Wild Fish Conservancy files a citizen suit against Cooke Aquaculture under the Clean Water Act to hold the company accountable for the collapse of the Cypress Island net pens.⁴³

December: Notice of penalty. Cooke's pollution discharge permit issued under the Clean Water Act⁴⁴ requires that "... after harvest, nets [are to] be cleaned at an upland facility where fouling waste and water is collected. This method virtually removes impact to the surrounding environment associated with cleaning (sedimentation, noise). Also important, removing the nets breaks pathogen cycles and effectively fallows the farm." However, at net pens near Bainbridge Island and without water quality protections in place, Cooke repeatedly cleans dirty equipment and discharges polluted wastewater into Puget Sound. **After a year's worth of warnings from the Department of Ecology, Cooke is fined \$8,000.**

Upper S'Klallam Tribe reports catching Atlantic salmon from the Cypress Island spill 40+ miles up the Skagit River.

A scientific paper finds that wild salmon exposed to Atlantic salmon net pens are much more likely to test positive for PRV (Piscine Reovirus) than those located further away from the pens. This is the first study to provide evidence that exposure to PRV-infected farmed fish can result in the spread of PRV to wild salmon.⁴⁵

More violations at Port Angeles prompt the State to shut down Cooke's Atlantic salmon farm there. After deeming the operation unsafe, the State revokes Cooke's license and cancels the lease. Cooke sues twice to reclaim that license, but loses both bids. Their attempts to reinstate the Cypress Island license/lease are ongoing.

2018

January: State inspections at all nine of Cooke's net pen facilities throughout Puget Sound reveal poor conditions due to negligence,⁴⁶ such as cracks in buckling walkways, deterioration of anchor lines, corrosion, rust, and concern about whether the anchors had been set outside of leased boundaries. In Rich Passage near Bainbridge Island, chain links on anchors have lost 75 percent of their holding capacity because of corrosion.⁴⁷

Cooke's nets at Skagit Bay are so fouled with kelp, algae and mussels that they are no longer visible. According to the Seattle Times, "Mussels rained down on the dock as the nets were lifted with a crane for disposal. Heaps of mussels on the dock were so high they had to be scooped up with a front-end loader."⁴⁸ The state found that Cooke's negligence⁴⁹ in not cleaning the nets resulted in the failure.⁵⁰

Cooke's failure to be truthful with state investigators complicates their investigation. In a press release, Cooke dismisses the State's multi-agency report as "neither accurate nor objective," and complains that it unfairly "stacks the deck against Cooke" in the legislature.⁵¹

The Seattle Times reports, "Leaders from 21 Washington Tribes sent a letter to every state lawmaker asking to shut down Atlantic salmon open-water net pens in Puget Sound. Cooke hired lobbyists, spokespeople and lawyers to defend its operations, the 181 jobs the company sustains in Washington, and its investment in the farms."^{52 53}

February: The advocacy group Our Sound, Our Salmon delivers a petition letter addressed to Governor Inslee to the Washington State legislature. It is endorsed by 109 businesses and organizations and over 12,000 individuals, urging the Governor to support a phase-out of Atlantic salmon net pen aquaculture.

Commissioner of Public Lands Hilary Franz announces termination of Cooke Aquaculture's Cypress Island lease, saying, "Cooke has flagrantly violated the terms of its lease at Cypress Island... The company's reckless disregard endangered the health of our waters and our people, and it will not be tolerated. On behalf of all Washingtonians, and in fulfillment of my duty to protect our state's waters, I am terminating the lease."⁵⁴

Wild Fish Conservancy announces that nearly 100% of sampled escaped Atlantic salmon sent to an independent lab for viral testing, test positive for PRV (Piscine Reovirus)

March: In reaction to the catastrophe at Cypress Island, Washington's legislature passes a bill (HB 2957) banning Atlantic salmon farming in state waters, and Cooke immediately applies for a permit to switch their farming operations to genetically manipulated 'triploid' steelhead trout in the same locations. Nothing in their application indicates Cooke has fixed problems.

Cooke harvests all fish in their southern Newfoundland (Canada) facility after discovery of infectious disease.

April: From a \$25 million dollar loan, Cooke is eligible for \$4 million in loan forgiveness to fund a Canadian university chair that they name after their company. The \$800k spent for the chair funds an industry-friendly researcher.⁵⁵

A Thurston County Superior Court Judge denies Cooke's motion for a preliminary injunction order to override DNR's refusal to allow the company to restock its Cypress Island facility with Atlantic salmon. As a result, DNR is not required to allow Cooke to restock the site. This motion is filed in an ongoing lawsuit by Cooke against DNR for the termination of their Cypress Island lease. Commissioner Hilary Franz encouraged Cooke to "...drop this baseless lawsuit and work with us to safely and quickly wind-up its operations and vacate the site. We will continue to defend our right to responsibly manage and protect our public lands. And, as we did today, we fully expect to prevail."⁵⁶

May: For the second time in several years, Cooke is fined \$500,000 for illegally using a pesticide known to kill lobsters, for treating salmon lice in a facility just off an island at the Maine-Canada border.⁵⁷

A paper released by a team of scientists at the Department of Fisheries and Oceans Canada (DFO) and the University of British Columbia, including DFO's Head of Molecular Genetics, finds PRV (Piscine Reovirus) causes lethal disease in Chinook salmon.⁵⁸

The Our Sound, Our Salmon campaign delivers an urgent request and letter of petition to WDFW. It is supported by 26 groups and urges the department to conduct PRV testing internally, using appropriately qualified staff, and to make the results of those tests available to the public.

WDFW denies Cooke Aquaculture's transport permit, blocking the transfer of 800,000 Atlantic salmon from the industry's hatchery in Rochester, WA to vacant net pens in Rich Passage after the smolts test positive for PRV.⁵⁹

August: Between 2,000-3,000 farmed fish escape from a Hermitage Bay, Newfoundland facility. No public notice is given by Cooke.⁶⁰

A federal judge denies motions filed by EPA, NOAA and by Cooke Aquaculture, to dismiss all claims in an on-going suit filed by Wild Fish Conservancy under section 7 of the Endangered Species Act.⁶¹

October: After a decade of litigation by Wild Fish Conservancy, NOAA Fisheries and EPA make an 11th hour decision to prepare a biological opinion on harm caused by Atlantic salmon net pens in Puget Sound to ESA-listed salmon and steelhead.

December: For the second time in a year, WDFW deems an exotic virus strain to be an unacceptable risk to native salmon, and Cooke is required to destroy 800,000 juvenile fish.⁶²

2019

February: Cooke Aquaculture partners with Martha Stewart for ready-to-cook meals.⁶³ Cooke also buys a shrimp farming company in Central America, making more than 100 companies acquired in its 30-year history.

April: Cooke is assessed a \$332,000 fine for the Cypress Island net pen collapse.

Following the 2017 Cypress Island net pen collapse, a paper published in Virology Journal and co-authored by the Wild Fish Conservancy⁶⁴ showed that not only were 100 percent of fish tested infected with PRV, the genetic sequencing of the virus determined it had originated in Iceland, where Cooke Aquaculture purchases its Atlantic salmon eggs. The Icelandic strain of PRV had never been documented in North Pacific waters before, and this genetic sequencing showed that Cooke had been importing eggs infected with the virus and amplifying and spreading the virus in their Puget Sound net pens.⁶⁵

A federal Court grants Wild Fish Conservancy's motion in an ongoing Clean Water Act case against Cooke Aquaculture, finding Cooke is in violation for failing to develop adequate plans. The Court holds that Cooke's Pollution Prevention Plan lacks necessary procedures for inspecting the fish containment cages. The plan also fails to adequately address the proper storage at the floating net pens, of chemicals used for controlling diseases, and lacks required procedures for the disposal of blood generated from harvest activities. With respect to the Fish Release Prevention Plan, the Court held that Cooke's plans did not include required procedures for tracking the number of fish in the salmon farms and those lost to predators and escapes.⁶⁶

June: A marine hydraulic engineering report⁶⁷ is submitted to a federal court as evidence in the ongoing Clean Water Act lawsuit by WFC. An outside expert's review of conditions at all eight net pen sites finds all of them exceed maximum standards and are at risk of partial or catastrophic failure. Cooke tries to exclude this report from testimony.⁶⁸

A paper released by Fisheries and Oceans Canada says, "...nearly all sea-farmed salmon likely become infected with PRV prior to harvest, and the virus has been detected in archived specimens dating back to at least the mid 1980's in British Columbia."⁶⁹

August: In Maine, as salmon are being transferred via a pipe for sea lice treatment, the pipe breaks and between 1,000 and 2,500 fish escape.⁷⁰

October: The Maine Department of Agriculture finds unacceptable handling/animal welfare conditions at the Bingham Hatchery after a video goes viral.^{71 72}

Just weeks after Cooke agrees to pay the State of Maine more than \$156,000 to settle numerous violations at several of its salmon net pen sites, (including having too many fish in its pens and failing to follow accountability procedures), the Maine Department of Marine Resources seeks public comment on Cooke's application for a 20-year lease renewal.⁷³

WDFW issues a "Mitigated Determination of Non-Significance" about Cooke's proposal to raise a highly domesticated and partially-sterile form of steelhead trout in their surviving net pens, triggering a 21-day comment period. WDFW's Determination does not require a full environmental impact statement and assumes the proposal would be unlikely to pose significant environmental consequences.

According to public comments during the State Environmental Policy Act (SEPA) process, the Rich Passage Estates Homeowners Association, which understood from the DNR lease agreement that the Rich Passage pens were beyond or near the end of their useful lives, reports that the uncertified Orchard Rocks South net pens are partially stocked, and a hole in a pontoon has caused the southern end to sink. No action is taken against Cooke for the violation despite the State's "unusual event" determination or the fact that Cooke had waited for several days while the structure sank. (See citizen photo series below.)

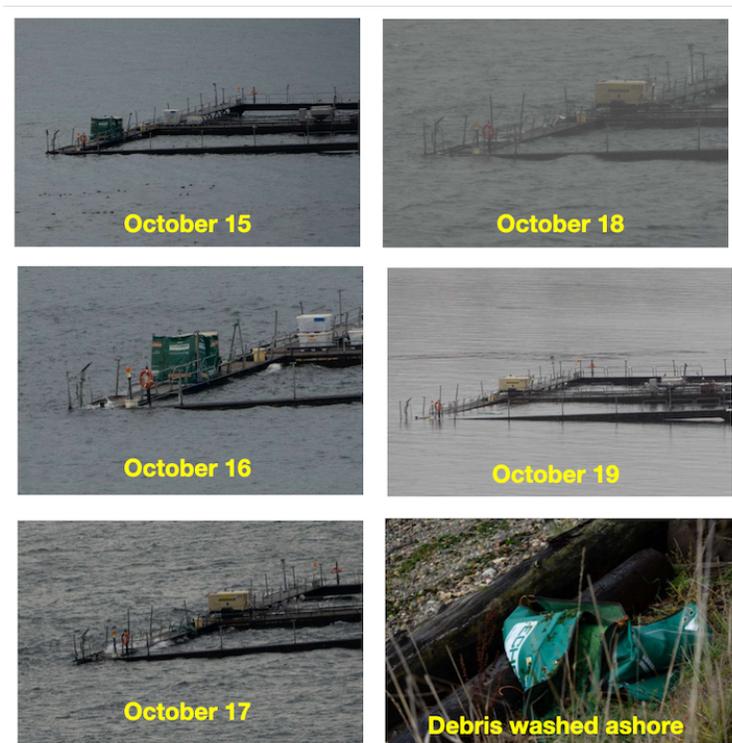


Figure 6: Orchard Rocks net pen south corner sinks over several days.

October: Due to unprecedented public participation and requests for a longer public comment period, WDFW announces a second extension to the SEPA comment period on Cooke's proposal to farm sterile (triploid) rainbow trout/steelhead in Puget Sound. The comment period, which was originally scheduled to close on Oct. 22 before an initial 10-day extension, is extended to 5 p.m. on Nov. 22.

November: Cooke settles a lawsuit by Wild Fish Conservancy for \$2.75 million. Funds go toward protecting wild salmon and killer whales, and to pay legal fees. The suit was over the catastrophic collapse of the net pen at Cypress Island.

November 2019 through January 2020: Cooke reports several virulent disease outbreaks at facilities in eastern Canada, including one in a pen stocked with 483,886 Atlantic salmon.⁷⁴

December 2019: Cooke admits that its subsidiary, Omega-3 Protein, has overharvested 30 percent more Atlantic menhaden from the Chesapeake Bay than allowed under interstate rules. Cooke had purchased this company in December 2017 for \$650 million.⁷⁵

2020

January: WDFW approves Cooke's application to farm triploid steelhead trout, granting the company a five-year permit for existing net pens in Puget Sound where Cooke holds valid aquatic land leases with the Washington DNR. This decision comes in spite of 3,500 public comments including individuals, businesses, other agencies, and seven Tribal Nations, all largely opposing the decision and calling for more environmental review.

February: Conservation and environmental groups file a lawsuit in Superior Court challenging the January decision by WDFW permitting Cooke Aquaculture to rear domesticated steelhead in Puget Sound net pens. The suit alleges the state violated SEPA by failing to conduct the appropriate environmental review, and is calling on a state Court to invalidate WDFW's Determination and permits issued to Cooke Aquaculture until a full environmental impact statement is conducted.

A Thurston County Superior Court Judge rejects Cooke's challenge to the DNR's termination of Cooke's Port Angeles lease. The ruling finds that DNR's termination was supported in the record and is not arbitrary or capricious.

March: Cooke appeals the February 2020 ruling upholding DNR's termination of the Port Angeles lease.

A huge drain on the public purse is finally addressed by a bill ⁷⁶ requiring the director of WDFW to develop rules providing for the recovery of actual costs incurred for the required inspections, monitoring, and compliance testing of marine aquatic farms. While the total cost of all leases paid by Cooke in Puget Sound does not exceed \$100,000, costs of oversight are enormous.

In a letter to NOAA Fisheries, EPA finally concedes that commercial marine finfish aquaculture in Puget Sound is likely to adversely affect endangered and threatened salmon, steelhead, and

rockfish. This decision comes after ten years of litigation over two previous “not likely to adversely affect” decisions. As a result of this new initial determination by EPA (the action agency), they direct NOAA Fisheries (the expert agency) to begin preparing a formal Endangered Species Act biological opinion within 135 days.

After 19 fish farms are removed from Canada's Discovery Islands area in 2020, migrating wild salmon are free of lice for the first time in decades.⁷⁷

June: The Nova Scotia Department of Fisheries and Aquaculture grants a 20-year permit to Cooke Aquaculture to raise farmed salmon in Liverpool Bay. **On selling diseased fish for human consumption,** Canada's Atlantic Salmon Federation wrote, "Cooke has grown diseased fish in Nova Scotia, Newfoundland, New Brunswick, Scotland and as far away as Chile. At one time, diseased fish were destroyed and the industry was compensated by government for the loss. In 2012, Cooke aquaculture received \$13 million in compensation for diseased fish which were being raised in Shelburne County. The Canadian Food and Inspection Agency (CFIA) began regulating this industry in 2005, and in 2013 they decided that they could not continue compensating the industry for their losses. At that time, they decided for the first time to approve the sale and processing of fish with this “flu-like” virus and we began seeing it in our supermarkets and fish retailers.”⁷⁸

On its website, CFIA describes how the Infectious Salmon Anemia (ISA) virus can kill up to 90 per cent of infected salmon, causing them to slow their swimming, lose their appetite and gasp at the surface.⁷⁹ Infected fish may have grey gills, a swollen abdomen and areas of bleeding along their belly and sides. However, the CFIA stated on their website, “Infectious salmon anemia poses no human health or food safety risk, and there is strong scientific proof of this.” No links to such proof are offered, yet on a fact sheet the CFIA advises the public to not use grocery store-bought finfish as bait, to wash and disinfect footwear, wash and dry clothing at a high temperature, and when cleaning or gutting these fish, to dispose of waste in municipal garbage, not in the water.⁸⁰ A former Canadian government fisheries scientist said, “I don’t think it’s a good idea for people to be eating it. We know that pathogens are becoming more virulent all the time and it’s events like this [the CFIA decision to sell diseased fish for human consumption] that I believe really risk human health safety.”⁸¹

Within the U.S., federal law has long forbidden anyone to load, unload, sell, transport, offer for sale or transportation, or receive for transportation, in commerce, or to buy, any dead, dying, or diseased fish or parts of fish that died otherwise than by slaughter, "...unless the fish and parts are consigned and delivered, without avoidable delay, to establishments of animal food manufacturers, renderers, or collection stations..."⁸²

July: Wild Fish Conservancy sends a letter and official applications to Commissioner of Public Lands Hilary Franz and DNR requesting to lease all state-owned aquatic lands currently or recently leased by Cooke Aquaculture for net pen aquaculture. WFC's goal is to restore these habitats and public access. At the same time, the Our Sound, Our Salmon campaign launches a new "Taking Back Our Sound" campaign to engage the public in this effort to take back public lands from the commercial net pen industry.

August: A lawsuit filed by animal activist group Animal Outlook (maker of aforementioned viral video) alleges misleading and deceptive advertising by Cooke, which filed four unsuccessful motions to dismiss.⁸³

September: Around 310,000 of Cooke's net pen **trout** are affected by infectious disease in Newfoundland, Canada.⁸⁴

November: The City of Banbridge Island City Council passes an official resolution declaring support for the Taking Back Our Sound campaign and its proposal to lease all waters in Puget Sound leased and degraded by the net pen industry for at least 30 years.⁸⁵

The Wild Fish Conservancy and others file an appeal to the State Supreme Court over the validity of the permit issued by WDFW to transition from Atlantic salmon to steelhead trout. The permit was affirmed in Superior Court.

2021

January: Cooke proposes to build a \$58 million dollar land-based hatchery in Digby, Nova Scotia that would grow three million salmon per year and supply 13 fish farms.⁸⁶

February: Wild Fish Conservancy issues a 60-day notice of intent to sue Cooke Aquaculture over Endangered Species Act violations at their net pens.

May: Cooke Aquaculture Inc. is recognized as a 2021 winner of the Canada's Best Managed Companies Platinum Club designation.⁸⁷

August: Despite ongoing litigation and timing questions on the expiring lease, WDFW grants Cooke a permit to stock its Hope Island net pens with 365,000 steelhead.⁸⁸ DNR issues a letter to Cooke notifying them that they are assuming risk by planting fish during ongoing litigation challenging their permits, and because DNR has not yet decided whether or not they will issue new leases when these expire in 2022.

2022

January: A second Washington state court rejects efforts by Cooke Aquaculture to sue Washington State over the termination of the company's lease for their Port Angeles net pen operation. Shortly after, the Court of Appeals issues an opinion affirming a lower court ruling upholding DNR's decision to terminate the lease.

Permits that will allow Cooke Aquaculture Pacific to farm steelhead trout in net pens in Washington waters are upheld in a unanimous 9-0 ruling by the Washington State Supreme Court.⁸⁹ (Discussion follows timeline.)

February: After a delay due to Covid, NOAA Fisheries releases a new biological opinion⁹⁰ finding Puget Sound net pens owned by Cooke Aquaculture **are adversely affecting** endangered

salmon, steelhead, and other protected fish as well as their critical habitats. This reverses NOAA's prior opinion that net pens posed little to no risk to ESA-listed species.

WFC has waited to file the suit until after NOAA's biological opinion was completed. As of July 2022, WFC has confirmed they are still considering moving forward with this litigation.

March: A petition signed by 8,000 individuals and over 100 businesses and organizations is delivered to Washington's Commissioner of Public lands Hilary Franz, urging the Commissioner not to issue new leases for net pen aquaculture in 2022 when all existing leases expire.⁹¹

Sea lice counts at a fish farm in Clayoquot Sound, B.C., were five times the legal limit during a critical window for out-migrating wild salmon.⁹² Sea lice are a huge problem for all fish farms, some of which have counts to 10 times acceptable levels.⁹³



Figure 7: Sea lice on a juvenile salmon. Photo by A. Morton. These are fully mature adult females, and thus the most lethal. In the wild, adult and juvenile salmon rarely mix, but fish farms along migration routes of wild juveniles means these salmon are 73 times more likely to suffer lethal sea lice than wild juveniles not near fish farms.⁹⁴

March: Cooke Aquaculture's Hope Island net pen lease expires after 12 years. DNR takes no action to renew or terminate the lease, and the lease rolls over into a month-by-month holdover tenancy that can be terminated at any time by Cooke or DNR with 30 days' notice.

A week before 105 fish farm licenses are set to expire in British Columbia, the Canadian Minister of Fisheries announces that government intends to transition all open water net pens out of B.C. waters. She terminates 19 leases permanently and renews all others for only two years, not enough time for a full grow-out cycle.

April: Cooke has continued to appeal both the Cypress Island and Port Angeles lease terminations. The ongoing litigation between DNR and Cooke Aquaculture involves four separate lawsuits over Cooke's former leaseholds:

- Court of Appeals, Div. 2, No. 54564-1-II: Awaiting Cooke's appeal to the Supreme Court.
- Thurston County Superior Court No. 18-2-01239-34: Trial dates awaiting rescheduling.
- Thurston County Superior Court No. 19-2-02643-34: Trial dates awaiting rescheduling.
- Thurston County Superior Court No. 18-2-01245-34: Pending. No hearing currently set.

June: In King County Superior Court, a jury orders Cooke Aquaculture to pay damages of \$595,000 to the Lummi Nation.⁹⁵ The tribe filed suit seeking compensation for harm and expenses incurred after the company's net pen collapsed near Cypress Island in 2017.

Canadian government officially moves to transition all B.C. fish farms away from open water net pens.

The Maine Department of Marine Resources renews a 20-year lease for Cooke Aquaculture's Atlantic salmon farms despite weak oversight and poor enforcement of regulations after a die-off of more than 100,000 salmon last August. The most frequent phrase used in the 14-page decision⁹⁶ by the Commissioner was "no legal requirements."⁹⁷

July: In their just-published book, *"Salmon Wars: The Dark Underbelly of Our Favorite Fish,"* Canada-based investigative journalists Douglas Frantz and Catherine Collins equate net pen salmon farming to "our generation's version of Big Tobacco." The book argues that the "industrialization of Atlantic salmon threatens the species, endangers human health and the environment, and lines the pockets of big corporations."⁹⁸

The Environmental Protection Agency announces that it will give \$50 million over the next five years to the Northwest Indian Fisheries Commission, which supports 20 treaty tribes. Previously, the EPA provided the commission with \$50 million over 10 years to support habitat restoration, infrastructure updates, water quality, commercial fisheries, flood protection and climate resiliency. The Canadian government pledges to add \$2 billion over nine years to the \$1.5 billion already set aside for ocean protection.

-----End Timeline-----

The public process of granting Cooke's permit:

In September and October 2019, the Washington Department of Fish and Wildlife (WDFW) held a State Environmental Policy Act (SEPA) public process in which public comments were accepted on whether to grant Cooke a 5-year marine aquaculture permit to transition production from Atlantic salmon to all-female, triploid steelhead trout. This would take place at their existing Puget Sound net-pen facilities where they have valid aquatic lands leases from the Department of Natural Resources (DNR). The SEPA process was problematic. WDFW did not prepare the required environmental impact statement, but instead claimed as relevant an EIS dated January 1990.⁹⁹ Also, and not in compliance with that 30-year-old EIS, "a minimum distance of separation between farms and river mouths" was not considered or adopted in state policy, as section 5.7.2.2 of that EIS would require for aquaculture involving native fish (and as is required in other nations). Nor was an analysis done of the proximity of net pens to steelhead spawning rivers.

The Swinomish Tribe noted in its comments that Cooke's application was deficient and lacked completed plans for pollution prevention, particularly on ecosystem health from antibiotic use, plus it lacked plans for fish escape prevention, and escape response and recapture. The NGO Wild Steelhead Coalition noted that NOAA's endangered species Biological Opinion had not yet been issued, and that the NPDES (pollution) permit conditions did not reflect the stricter water quality and risk assessment standards as passed in HB 2957. As a result of these deficiencies, the rationale for concluding that transitioning from Atlantic salmon to steelhead farming "is not likely to change the effect to water quality" appears to be based on far too many assumptions. This was reflected also in DNR's comment that the SEPA materials "did not adequately address how the proposal from Cooke [Aquaculture] might impact the already declining population of Puget Sound steelhead." Also, nowhere in Cooke's SEPA checklist did they state that they had any experience farming sterile female Atlantic salmon or steelhead on the scale proposed in Washington's marine waters. Nor did they indicate they had experience in dealing with the residual risks associated with triploid fish.

On the draft permit that the public commented on, WDFW wrote that state law (RCW 77.125.060) "...requires that approximately every two years, when net-pens are fallow, each of Cooke's facilities must be inspected by an independent marine engineering firm, approved by WDFW, and to receive fish the facility must be considered in good working order." WDFW also wrote, "Inspections must occur within two years of the effective date of the permit..." Unfortunately, RCW 77.125.060 does not contain the language "inspections must occur within two years of the effective date of the permit..." This was unenforceable and is a misrepresentation of the statute. The error was pointed out in SEPA comments, but it did not appear to matter. Such erroneous information, combined with the noncompliant use of a 30-year-old EIS, gave the public outdated information and false expectations. The SEPA process was seriously flawed, and the decision to grant the permit regardless of all that appeared arbitrary and capricious.

The Rich Passage Homeowners Association stated in comments that they called the State to report marine debris in the water, and were told that the Department of Ecology "... considers the reported activity *de minimis* in terms of water quality, but "technically" not in compliance with the permit requirements."¹⁰⁰ While this should have resulted in at least a warning letter, it apparently did not. The Homeowners Association further commented,

"The industry should be held to the requirements of the permit. The permit does not nor should it specify a matter of degree which is subject to interpretation. The permit should include language that is consistent with WDFW: The discard of carcasses, fish parts, or offal is also a violation of Cooke's NPDES permit."

WDFW received over 3,500 public comments, the overwhelming majority of which concluded that Cooke was untrustworthy and not competent to own or manage finfish marine farms in Washington State. Despite this, in January 2020 and evidently without considering Cooke's history of violations or adding extra accountability measures that might be expected with such a history, WDFW issued a 'Justification for a Mitigated Determination of Non-Significance,'¹⁰¹ and approved Cooke's 5-year permit for steelhead. The permit was justified on the basis of whether raising triploid steelhead trout "... would result in "significant genetic, ecological or fish health

risks ... [to] naturally occurring fish and wildlife, their habitat or other existing fish rearing programs." WDFW decided that despite pervasive diseases for which no vaccines exist (such as Rainbow trout fry syndrome, which requires extra antibiotics), that "... raising steelhead trout in the existing net-pen facilities would carry similar or less risk than raising Atlantic salmon."¹⁰²

This directly contradicts the very source that WDFW used to make such a statement.

Several months earlier, on March 25, 2019, WDFW had issued a "Fact Sheet for NPDES Permit WA0031542 Cooke Aquaculture Pacific, LLC Orchard Rocks Saltwater IV"¹⁰³ in which it reiterated and responded to public comments. Specifically, WDFW stated there would be "no serious or moderate risks."¹⁰⁴ This rebuttal to public concerns relied on a 2002 review¹⁰⁵ by the National Marine Fisheries Service of the impacts that Atlantic salmon net pen aquaculture would pose to Puget Sound Chinook and Hood Canal summer-run chum salmon. That review did not include native steelhead trout in its conclusion, and in fact, clearly stated:

*"These [low risk] conclusions regarding the potential impacts of Atlantic salmon culture on the Puget Sound chinook salmon and Hood Canal summer-run chum salmon ESUs are based on three important assumptions. The first assumption is that the salmon farming industry in Puget Sound remains approximately the same size as currently or in the recent past. A significant expansion of the industry may increase risks and would require a reconsideration of some of the potential impacts discussed in this review. The second assumption is that salmon farms in Puget Sound continue to rear only Atlantic salmon. Should the local industry shift production to coho or chinook salmon **or to steelhead, the risks for hybridization, dilution of the gene pool, colonization, and competition for natural resources with wild salmonids will be greater than they are now with Atlantic salmon culture.** Third, these conclusions assume that Atlantic salmon farmers in Washington continue to use only stocks presently in culture and that no new Atlantic salmon stocks are brought into the State."*

Thus, even the source WDFW quoted conflicts with their own conclusion that risks are similar or lower. The fact that WDFW briefly referenced numerous unnamed studies it had conducted in subsequent years does not adequately support their conclusion. When an agency behaves in a manner that causes the public to lose trust in it, it cannot claim that managing public trust resources is being done competently or even in compliance with the law. But the public may assume that a de facto subsidy exists.

Lawsuit:

As a result of WDFW's actions, the Wild Fish Conservancy and others sued them in February 2020,¹⁰⁶ for failing to analyze or suggest mitigation for the following. It should be noted that *native* Puget Sound steelhead are a federally listed threatened species with critical habitat designated. (See map below.) Failure to analyze included:

Impacts of climate change and warming waters to native species;

Impacts from net pen pollution to the benthic community, plants, and animals in nearby waters;

Impacts from poor escape prevention and net hygiene practices, including the impacts from pen sinking;

Impacts from escapements of farm-raised steelhead on wild steelhead genetics, wild salmonids' prey and habitat, and wild salmonids' predators, including the impacts of any recovery efforts or decisions;

Impacts from farmed steelhead diseases, pathogens, and parasites on native species, impacts from chemicals and pharmaceuticals used to rear farmed steelhead on native species and the environment;

Impacts from farmed steelhead that are not successfully sterilized to native species;

Impacts of seismic catastrophe on the proposed action, and their combined impacts on native species and the environment;

Impacts of harvest efforts, including water withdrawals and discharges and bycatch, on native species and the environment; and

Air and noise pollution impacts on adjacent lands and landowners.



Figure 8: Critical habitat for federally listed steelhead trout (native, not triploid)

Court decisions:

In November 2020, a lower Court ruled to uphold WDFW's approval of Cooke's steelhead proposal, stating that despite the acknowledgement of unprecedented public interest and participation in the SEPA process, "WDFW's SEPA review is not an issue of broad public import warranting direct review by this Court." In other words, since the Court did not have the scientific expertise necessary to overrule the agency's opinion, the Judge was unable to consider the merits of the lawsuit and deferred to WDFW, on the very decision and underlying scientific review being challenged.

In January 2022, the Washington State Supreme Court unanimously dismissed the lawsuit, finding that WDFW's analysis was not "clearly erroneous."

When the Court defers to an agency's decision, its deference often rests upon the unique expertise of that particular agency. So, for example, if a transportation agency is in court over a wildlife issue, the Court might not extend deference to that agency because its unique expertise is not in wildlife, but in transportation. Similarly, if a wildlife agency uses a 30-year-old EIS and a 20-year-old environmental review in a SEPA process, they are in essence claiming that either nothing has changed in 30 and 20 years, respectively, or they are saying that they have learned nothing of importance since then. So, if *after* their decision they get challenged in court where indeed, new information does exist that should have affected their decision, **they cannot bring forth the new information to justify their position, because it should have been in the original SEPA process. Should they wish to bring forth new information, there should be a new SEPA.**

Thirty years is a long time for no changes in a scientific field, and it seems irrational to use such old material. In fact, a quick Google search revealed more than 50 scientific papers subsequent to 2002 that are likely to contain at least some new information on net pen impacts and new technologies. Add this to the fact that in the old sources used in that SEPA process, climate change and warming waters were not factored into predicting disease trends or viral loads in farmed fish. Thus, it becomes transparently obvious that questions are warranted. An agency cannot cherry-pick old information to make its case while calling its actions honest, nor can it play things both ways by updating after the fact. There must either be a new SEPA process, or an erroneous decision should be reversed. If, in addition to all that, the agency has also failed to update permit conditions in line with newly enacted legislation, and if it has misrepresented a state statute during a SEPA comment process, and if its statements were contradicted by its sister agency (DNR), then the combined weight of all these procedural flaws should have invalidated the SEPA.

And here's where the fine print trips up what should have been an obvious "NO" by the Court to Cooke Aquaculture: First, this decision was not a ruling on whether or not commercial net pen aquaculture is a safe or appropriate practice for Puget Sound and the threatened and endangered species that live here. The point is that the SEPA process is broken. It no longer works to protect the public trust.

The question considered by the Court was whether or not WDFW violated our state's environmental laws by severely limiting the scope of environmental review to **only consider**

environmental impacts associated with Cooke Aquaculture changing the species they rear. It ignored the cumulative impacts that commercial net pen aquaculture poses as a whole. This defective SEPA left out not only the "public" in public process, but also the science.

Segmentation of impacts is one more unfortunate example of how Washington's State Environmental Policy Act is fundamentally broken, acting as a tool to rubber-stamp extractive and harmful industries rather than serving as intended: to protect the public's natural resources for future generations. The Court's dismissive statement that this is "...not an issue of broad public import warranting direct review by the Court" adds further insult to a public that overwhelmingly and knowledgeably opposes net pens and their associated impacts. The public deserved a better shake than this.

What is a triploid steelhead trout?

In a nutshell, triploids have three sets of chromosomes,¹⁰⁷ while normal fish have two and are called diploids. Having three sets of chromosomes instead of the standard two makes these fish mostly infertile. To create triploids, the eggs are subjected to heat-shock or intense pressure shock.¹⁰⁸ But sterilization is not 100 percent. WDFW admitted in their environmental review that given the failure rate of the sterilization process, an escape similar in size to the Cypress Island collapse (~250,000) would release more *fertile* farmed steelhead than all of the wild steelhead that exist in Puget Sound.

According to researchers, it is "...naive to think that genetically manipulated fish such as triploids won't have significant impacts on wild fish if they escape, even if they're not fertile."¹⁰⁹ Male triploid fish still develop gonads and can participate in spawning behavior, which could crowd out native fish, so all-female triploids are raised because all but a small percentage are supposedly unable to reproduce. Research indicates, however, that escapees can also outcompete wild fish for food, because young triploids are genetically programmed to eat more in order to grow faster. Higher food consumption rates can thus give triploid escapees a higher competitive survival rate than wild fish, whose bodies evolved to use less food more efficiently. If triploids do manage to spawn, their offspring will be of lesser quality than those of wild fish.¹¹⁰

There is a bright spot. In 2010, the Environmental Protection Agency wrote, "No self-sustaining runs of Atlantic salmon have been established in either Washington State or British Columbia, either from repeated intentional plantings by government agencies starting many decades ago or from farmed salmon escapes. It is apparent that the vast majority of these fish do not survive very long outside aquaculture facilities, as stomachs of recaptured fish in marine or freshwater are almost always empty. Five hundred fish stomachs were sampled from recovered fish in the 2017 Deepwater Bay (Cypress Island) releases. All stomachs were empty and that pattern occurs for the vast majority of other releases in the past."¹¹¹

No one knows whether this would apply to triploid steelhead trout.

Atlantic salmon are considered invasive species in Washington, and the Washington Pollution Control Hearings Board classifies escaped Atlantic salmon as "agricultural or industrial waste," which is another statutory example of the definition of pollutant.¹¹² If these fish were not

considered a pollutant, it is unlikely that the DOE, which issues pollution permits, would be the agency responsible for regulating fish escapes. Thus, the best understanding on whether farmed triploid steelhead trout would be considered a pollutant is yes, they would likely be considered so under the Clean Water Act if released, since this would violate Cooke's pollution permits.¹¹³

While hatchery steelhead are indeed stocked in lakes in Washington, those also require permits, and the fish could be considered pollutants outside of those specifically approved regions. Plus, WDFW's Marine Aquaculture Permits require triploids to contain one or more visual marks to distinguish them as commercial aquaculture fish (vs. hatchery or wild fish.) And finally, also contained within these pollutant discharge permits is a requirement to have a Fish Escape Recovery Plan in place. During the public process prior to DOE's granting of the permit, Cooke's application lacked completed plans for fish escape prevention, and escape response and recapture.

It is not only likely that escaped triploid steelhead will be considered pollutants under the law, but based on Cooke's past performance it is also likely that they will escape.

Farmed vs Wild:

Farmed fish, and in particular, salmon, have benefitted from a legal structure that limits the ability of the fishing industry to adjust to competition. Although research shows that the increased supply of salmon is responsible for the price decline, it's unclear how much of the change is due to farmed salmon and how much to hatchery salmon. Overall, the increase in farm production has a greater effect on the market, because the amount produced by farms annually is about 20 times that produced by hatcheries.¹¹⁴

Existing salmon fishing laws were enacted in a world where the important competition in the salmon business was among groups of fishermen. While these laws harmed consumers by artificially raising prices, and injured certain sectors of the fishing industry by forcing them out of the fisheries, they did create high employment and profitability within politically favored sectors. But farmers can collect their fish at a measured tempo over the full year, while fishermen catch fish in pulses over a short period of time. In the new context of competition with salmon farmers, these same fisheries laws have new, deleterious effects on all sectors of the fishing industry.¹¹⁵ The ability to control and thus predict supply gives farm fisheries a market advantage, where commercial fishery production is variable, cannot be increased, and is subject to 'openings', short periods as brief as 24 hours where fishing is available to permit holders.

Commercial fishermen are often independent operators, whereas, as previously stated, most of the hundreds of fish farms worldwide (in Canada, the U.S., Norway, Scotland, and Chile) are owned by four large companies. Each of these companies, including Cooke Aquaculture, owns facilities in more than one location.¹¹⁶

Clashing Subsidies:

Governor Inslee's 2019-21 budget package included over \$26 million in operating and \$300 million in capital investments for Southern Resident orca recovery,¹¹⁷ specifically for addressing

lack of prey, toxic contaminants, and vessel traffic issues. The 2022 budget contains \$187 million for salmon recovery.¹¹⁸ The State cannot ethically take taxpayer funds to protect the Southern Resident Orcas and salmon while simultaneously issuing permits that result in their significant harm. Permitting a foreign-based mega-corporation that discharges multiple toxic chemical, viral, and antibiotic pollutants that also impact human health to do this is even less logical. As a reminder, escaped farm fish are considered pollutants under the Clean Water Act. Since Cooke's history of pollution, disease and escapement violations is abysmal, the State's permissive behaviors toward them amount to aiding and abetting harm to wild salmon and the Southern Resident Orcas.

Alaska and the federal government have begun to take steps aimed at lessening the economic impacts of farming on the fishing industry. Thus far, these steps have consisted mainly of subsidies, although some funds have also been invested in marketing wild Alaska salmon.¹¹⁹

So, if one government is subsidizing wild salmon because farmed salmon are ecologically and economically out-competing them, and if another government is de facto subsidizing farmed salmon via lax or insufficient standards of oversight while spending millions on species recovery, our once-high water quality and its fish and wildlife, along with public health, will continue to pay the real price of these competing subsidies. Washington taxpayers understand with frustration that they are paying to simultaneously restore and wreck the ecosystem.

Endangered Species:

In early 2022 NOAA's National Marine Fisheries Service released a Biological Opinion¹²⁰ saying that fish farm net pens are "likely to adversely affect" threatened and endangered fish (specifically Puget Sound Chinook salmon, Puget Sound steelhead, Hood Canal summer-run chum, Puget Sound/Georgia Basin yelloweye rockfish and bocaccio.) Net pens will likely cause some harm to their critical habitats as well, but won't destroy them, said NOAA. Nor are net pens alone likely to jeopardize the species' continued existence. Meaning they probably won't cause extinctions all by themselves, but together with other stressors it still spells trouble. This is how Biological Opinions too often work since the changes made by the Trump Administration; everyone knows a piecemeal approach where cumulative impacts aren't examined is good for the applicant but bad for the ecosystem.

Shortly after NOAA's Biological Opinion was issued with its "likely to adversely affect" language, the president of Cooke Aquaculture Pacific released a public statement under a banner reading, "No negative impact from aquaculture in Puget Sound, says NOAA." He said, "Scientists at NOAA have concluded, with full scientific certainty, that net-pen aquaculture in Puget Sound is safe for the environment and safe for the endangered species that live in these waters."¹²¹

For a privately owned company that depends on public trust resources for its profits, this is egregious behavior that again demonstrates Cooke's untrustworthiness. This company has not earned the privilege of using Washington's public trust resources. When you work in the realm of public trust, you work for the people who own the resources you exploit. Most people would agree that if you can't do it responsibly, you shouldn't do it at all.

Sustainability:

An industry is ecologically sustainable if it maintains, or is part of a management system that maintains, the natural capital upon which it and other industries depend. In the case of potentially renewable resources such as fish stocks or coastal environments, maintenance means not impairing the ability of the resource to provide services from generation to generation. But for this discussion it might be easier to characterize unsustainability, whether ecological, economic, or political.

All forms of unsustainability have their roots in external costs. According to a Stanford University analysis¹²² of why farmed salmon outcompete wild salmon, industries that impose costs on society through pollution (economically unsustainable) are likely to attract the unwanted attention of the political process (politically unsustainable). Industries that destroy resources they need in order to persist in the course of their operations (ecologically unsustainable) will almost certainly need political intervention in order to remain profitable. Industries that destroy their resource base in the course of operations (ecologically unsustainable) impose costs on society by diminishing public capital (economically unsustainable).

The main disadvantage of going to a land-based, closed recirculating aquaculture system with zero effluent is that it's more costly to start up and has higher operating and energy costs. But while a subsidy in the form of polluting the natural resources that you don't have to pay to clean up may raise your profits, the costs are borne by the public whose trust resources you abuse.

Unfortunately, the State did not consider the availability of land-based aquaculture operations in its deliberations, nor did it compare the water quality discharges from them to those proposed in Cooke's application for a NPDES (pollution discharge) permit.

By making it easier for a finfish farming corporation with a dismal compliance record to remain ecologically unsustainable but profitable via permissive standards and lack of enforcement, (which amounts to a de facto state subsidy), the Washington Department of Fish and Wildlife and the Department of Ecology are negating a significant percentage of the State's expensive restoration funding, and contributing to the further decline of endangered species and ecosystems.

Competing interests funded by government, whether in kind or directly, guarantee chronic conflict and ecological degradation, not only in the areas where net pens operate, but also in species that range throughout the area, like wild salmon, whose recovery chances are being diminished. Yet demand for seafood is rising. It's a dilemma with hard choices whose consequences hinge on sustainability. The current model is not sustainable. The need for sustainable food production is obvious, but that's not what we have in Cooke Aquaculture. They have lost any benefit of the doubt they may once have enjoyed with the public, and their dismal record shows that they cannot be trusted with the public resources they have been allowed to use and abuse for too long. The answer lies in land-based fish farming.

Conclusion:

Puget Sound is a full ecological partner to forest ecosystems on the Olympic Peninsula, whose trees and soils are enriched by nutrients from, among other things, the bodies of spawned-out salmon. But Cooke Aquaculture's past history of violations, along with the State's permissiveness and lack of accountability, does not bode well for native wildlife trying to survive in ecosystems from pelagic to benthic, from plankton to our most iconic threatened and endangered salmon and orcas. We object to the way this permit process was handled, and we oppose the commercial ocean farming of any fish in Puget Sound by Cooke Aquaculture and its partners. Washington is the only state on the U.S. Pacific coast that still allows fish farming in ocean water. If past is prologue, the benefits will accrue to private interests and the costs will accrue to the ecosystem (and thus the public). If all it takes are full moon tides to rip a fish farm apart, as Cooke has claimed, then maybe they don't belong in these waters. We urge the Legislature and the State to promulgate laws and adopt rules that would prohibit open water net pen fish farms altogether, and to allow careful, ethical, and closely monitored aquaculture only in land-based, closed recirculating water systems with zero effluent.

Endnotes:

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<https://pangea.stanford.edu/research/Oceans/GES205/fish.pdf>
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- ⁵⁹ "Each of these factors [positive PRV tests and failure to adequately fallow pens] raised an unacceptable risk of introducing an exotic strain of PRV into Washington marine waters... This would represent an unknown and therefore unacceptable risk of disease transmission."— Ken Warheit, Fish Health Manager for WDFW.
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- ⁶¹ "The Agency's post hoc claim in this litigation that its prior consultations were "voluntary," and that it had no duty to review the effects of net pens, including disease and escapement—and in fact, no duty to conduct a consultation at all—is simply not credible... The Agency's position—which would have the question of whether or not an agency has a duty to consult turn on the outcome of a consultation—borders on the frivolous."— Federal Judge Barbara J. Rothstein, Excerpt from Court Order.
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- ⁶⁴ <https://virology.biomedcentral.com/articles/10.1186/s12985-019-1148-2>
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- ⁸⁵ "A RESOLUTION of the City Council of Bainbridge Island, Washington, hereby declaring the City Council's support for the Wild Fish Conservancy's proposal to the Washington Department of Natural Resources to lease aquatic lands in Rich Passage currently leased for commercial marine net pen finfish aquaculture for the purposes of restoring these aquatic lands to their natural state and restoring full access of these aquatic lands for the public's full benefit, use, and enjoyment." ~ City of Bainbridge Island City Council.
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