

American Aquafarms (AA) is proposing one of North America's largest ocean salmon farming operations to raise 66 million pounds of salmon at two 60-acre lease sites in Frenchman Bay, and a third land-based hatchery and processing facility in Prospect Harbor. Each ocean lease site will have 15 pens. The firm says that 90% of the solid waste from the pens will be separated and removed on barges. However, the 15 pens at each lease site would discharge a 'primary' liquid stream of 90 m³/sec, or 2.05 billion gallons/day of untreated effluent. The combined, total 'primary discharge' between the two lease sites would be 4.1 billion gallons / day. A 'secondary' discharge from each lease site of 178,000 gallons day (356Kgal/day for both) would be the product of 'dewatering' captured feces and unused fish food.

Summary of Concerns (short version):

1. **Prior use:** AA's proposal ignores prior use of the proposed lease areas and it conflicts with Maine's duty to sustainably manage the Public Trust for use of finite marine resources and submerged lands for the benefit of all. AA's project must not decrease the direct value of Hancock's \$128M lobster catch, or revenues from tourism or recreation that depend on views and a pristine, largely wild natural environment.
2. **Water Quality:** Pens are not closed as AA stipulates. Effluent will be transported around the bay, degrade water quality, and adversely impact fisheries and the environment. Untreated effluent discharge is 2000x the treated Bar Harbor sewage treatment plant discharge.
3. **We should learn from countries more experienced w/ aquaculture** This project would not be permitted in Norway due to their regulations that limit adverse impacts to water quality, and that ensure biosecurity and working waterfronts. Maine needs to update regulations to address those concerns, and to handle and limit industrial-scale aquaculture. That process should prioritize cumulative impacts, which current regulations do not adequately consider.
4. **Scale & Biosecurity:** AA's project plans to produce 50% of eastern Canada's farmed salmon in one site. Water transport between pens provides no isolation to limit contagion in a disease outbreak. The project's scale presents huge challenges in the face of reasonably likely disease outbreaks and mass mortality events that are expensive to handle and relatively common in our marine environment.
5. **Modeling and Validation:** The proposed technology is unproven at this scale. Because of this, there is no design data to allow informed decision making based on validated models particularly those that predict water quality outcomes and their impacts. AA plans to build with the hope of validating models after construction by ongoing monitoring. That's far too risky. Data must be collected to validate models to confirm predictions before anything gets built.
6. **Carbon Footprint:** This project produces huge carbon impact and pollution in Maine. This will degrade our environment and health, increase our healthcare costs, make it unlikely that we'll hit Maine's Climate Action Plan, and therefore make it unlikely that we'd receive federal climate incentive dollars.
7. **Jobs:** While some jobs from the proposed project would go to local people, most of the economic benefit from this project flows to the same well-connected legal, PR, environmental consultants, and construction firms that are backing all the heavily contested industrial-scale salmon projects elsewhere in the state. Few of these benefits flow to local workers as advertised. In contrast, many people project a net loss of local jobs due to declines in fisheries, recreation, tourism, and hospitality that all depend on wild, historic views and environmental quality.

Concerns (more details):

1. **Prior Use:** AA's proposal ignores prior use of the proposed leases and surrounding areas by those in the fishing community, by those in the recreation and tourism industries, and by many recreational boaters and visitors, as well as by those who value a pristine wild and historic view from shore. A foreign firm without connections to the bay or region should not be able to extract our resources, or dictate how the community uses resources it's used and shared for centuries. Doing so would be a violation of Maine's duty to sustain the Public Trust of our finite marine resources.
2. **Water Quality:** To put AA's proposed discharge in context, it's ¼ the 26,000 cfs flow of the Penobscot River. It's more than 2000X the 2 MGD discharge from the Bar Harbor sewage treatment plant, except it's untreated. Liquid effluent will include large amounts of dissolved nitrogen, phosphorous, sulfides and other contaminants. On one hand, AA says it pens are closed, but then it says they'll discharge 4.1 billion gallons of untreated liquid effluent. The pens are therefore not closed, and this pollution would be discharged into our bay. Contaminants will be diluted by large amounts of water, and because of this, AA says their concentrations will be below the DEP thresholds for concern. However, Frenchman Bay is a 'low-flush' water body and therefore these contaminants do not dilute. Instead, over time, they concentrate and, as they do, nutrients will continually accumulate to eventually trigger algal blooms that deplete oxygen from the water, in turn causing collapse of ecosystems and fisheries. The Gulf of Maine is among the fastest warming water bodies on earth, a fact that further exacerbates the potential for algal blooms in a bay that is already affected by them. Even if this discharge included no contaminants (and it does), this unprecedented mass transport is anticipated to have unpredictable adverse effects on the bay's nutrient webs and ecology. Why risk it?
3. **We should learn from countries more experienced with salmon farming.** As a world leader, Norway has three sets of regulations that together ensure water quality, biosecurity, and support of local, working waterfronts. The first is Maximum Allowable Biomass (MAB) per lease. AA's proposal exceeds Norway's limit by ~18x. The second is MAB per region per firm. AA's proposal exceeds Norway's by 6x - 13x depending on the region. The third is stocking density, and AAs exceeds Norway's limit by 1.4x – 3x depending on fish size and whether the salmon is organic. AA's project would not be allowed in Norway because its scale threatens water quality, biosecurity and because it essentially monopolizes finite marine resources and excludes access by non-industrial, local fishermen. Maine needs to update regulations to handle industrial-scale aquaculture. That process should consider cumulative impacts, which current regulations do not adequately consider.
4. **Scale and Biosecurity:** In 2019, eastern Canada produced 133 million pounds of farm-raised salmon from 216 sites. AA's project, among the largest ocean salmon projects in North America, would raise 50% of that volume in one site. When disease strikes, smaller sites limit contagion, and help to prevent economic and environmental collapse. AA's DMR application says "*each pen is separated from neighboring pens and there is no direct surface contact between pens in the water column. Each pen is a separate system with its own separate bio habitat.*" However, consider that pens are ten feet from each other. Each pen has six one-meter inlets, and one three-meter outlet in close proximity to neighboring inlets. It's inconceivable that there's no water transport from one pen to another. Therefore, there's disease transport too. In mass-mortality events, firms need to kill and dispose of all fish quickly. AA's annual production per

lease site is 33 million pounds. It takes 17 months for fish to mature. It's therefore likely that AA will have 40-50 million pounds of fish in the water at each lease site. Disposing of these volumes quickly is a concern as are the adverse impacts of not doing so when required.

5. **Modelling and Validation:** While elements of AA's technology have been proven at smaller scale, there are many aspects of the project that are untested and unproven at the proposed scale. AA claims to be doing lots of modelling to perfect their plan. Nevertheless, all models require validation. AA's consultant Elizabeth Ransom acknowledges both the need to validate models, and the absence of proven design data that would do so, particularly the ones that predict water quality in compliance with DEP regulations. As a solution, she's suggested that the facility should be built on faith, then actively monitored to ensure compliance. More specifically, there are models that forecast the transport and dispersion of discharged pollutants to answer where they really go, and their impact. Unfortunately, while models exist, we're not sure what they tell us since the bay has never been instrumented over an adequate area, time period, and range of weather conditions. Therefore, there's no proof that the models are useful predictions. AA's proposed strategy to build now, and measure later poses far too many risks. We should measure now, then assess proposed impacts once there's data to make informed decisions.
6. **Carbon footprint:** AA says producing fish in the US where the market is will save 100,000 metric tons (MT) of CO₂ by eliminating air transport from Norway. We need to ask who this 'saving' would benefit since most of the consumers for the proposed product would be outside Maine. Our resources would get extracted, and our environment degraded. We'd take the downsides and the risks. Most of the benefits would support Norwegian investors, not the people of Maine.

Look at the numbers. AA's draft DMR application indicates that equipment at the fish pens will include ten 500kW generators running nearly continuously and thirty 50kW backup generators burning 2.9 to 4.1 million gallons of diesel annually. This will emit 30 to 40 thousand MT of CO₂ or ~3-4% of the USEIA reported CO₂ emissions produced in Maine for electric power generation in 2018. For trucking to haul fish, fish pellets, diesel fuel, liquid oxygen and sludge, reasonable estimates suggest consumption of 11.6 million gallons of diesel emitting 160 thousand MT, or ~2% of the CO₂ produced in Maine for transportation in 2019. Together, generators and trucking produce ~200,000 MT of CO₂ in Maine. Compare that to the 100,000 MT tons AA supposedly 'saves'. Add to this reduced public health, and higher health care costs. And then recognize that this project will make it more difficult to achieve Maine's newly adopted [Climate Action Plan](#), and along with that, the likely failure to qualify for anticipated federal climate support dollars.

Jobs: While some jobs from the proposed project would go to local people, most of the economic benefit from this project flows to the same well-connected legal, PR, environmental consultants, and construction firms that are backing all the heavily contested industrial-scale salmon projects elsewhere in the state. Few of these benefits flow to local workers as advertised. In contrast, many people project a net loss of local jobs due to declines in fisheries, recreation, tourism, and hospitality. Further, history shows that many local fish-processing jobs are unattractive to local workers and hard to fill. The US Dept. of Labor ranks aquaculture jobs as among the most dangerous jobs in the US. Once again, the benefits to the region don't seem to outweigh the many downsides.