

**Nordic Public Comments**  
**Opposed**

**From:** [Ann Dorsey](#)  
**To:** [Planning Clerk](#)  
**Subject:** Pertaining to the Planning Commission hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC, Record Number PLN-2020-16698  
**Date:** Sunday, July 24, 2022 8:36:33 PM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Planning Commission,

I urge you to deny the permit for Nordic Aquafarms for the following reasons:

The Aquafarm will generate at least 100,000 metric tons of greenhouse gases each year from the fish feed.

Humboldt Bay already has to local sustainable aquaculture in its oyster farms.

There are significant risks from this project including tsunamis, earthquakes and escaped fish.

Thank you,

Ann Dorsey

**From:** [Christopher Hamilton](#)  
**To:** [Planning Clerk](#)  
**Subject:** Planning Commission hearing for July 28, 2022 - Nordic Aquafarms California, Record Number PLN-2020-16698.  
**Date:** Sunday, July 24, 2022 5:21:02 PM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Dear Planning Commission Members:

Because factory-style fish farms employ toxic pesticides and pharmaceutical drugs, even GMO soy, in order to yield larger fish populations for food, I've grown increasingly wary of their impacts on our waters.

It's of particular concern that the toxins can significantly affect worker health in several ways through:

Drugs they use for pest and disease control; in crowded pens that multiply levels of harmful bacteria, those bacteria can develop resistance to antibiotics crucial for treating human diseases.

Factory farmed salmon turn pink because of dyes; some of those dyes may contribute to retinal damage and hyperactivity in children.

Chemicals factory farms use are likely to increase risks of cancer, reproductive and endocrine system problems.

However, in fish farms it's not only harmful to humans, but such toxics discharged from this facility will adversely affect wildlife in the sea, too; that effluent will go directly into habitat where juvenile salmon are swimming.

So I want to express my opposition to the proposed Nordic Aquafarms facility in Humboldt. Its plans to operate such a huge factory fish farm on the Samoa Peninsula require much deeper review. The County's Mitigated Negative Declaration concludes, amazingly, that no significant adverse environmental effects would be yielded by this facility. It appears from

documents that it may produce up to 60 million pounds of fish per year and discharge six million gallons of wastewater into our coastal waters daily.

Thus, I pray that the Commission will review this proposed facility more rigorously. I think there are so many environmental and social--even economic--impacts it will have. Please do all you can to prevent a land-based factory fish farm from harming Humboldt Bay's precious coastline.

I really don't believe that the mitigated negative declaration meets strict requirements of the California Environmental Quality Act. The act aims to assure state residents that better long-term environmental protection goals will guide decisions coming from public agencies like yours. Please consider how large wastewater discharge from this facility may affect water quality, wildlife habitats, and infrastructure in the area.

Fish feed practices at these operations also rely on wild fish and land-based crops like soy, which, as I said, contain GMOs. But more importantly, factory fish farms must respond to bottom-line concerns, so increasing profits may diminish sustainability of the work there and the quality of products. Factory fish farms also risk the demise of wild fishing communities and any economic activities that are connected to them. They tend to depress fish prices and they also compete for limited space for marine life and fishing folk. We really must think more about these risks from a foreign-owned corporation that may well be less accountable to U.S. and Humboldt County interests.

I know that Humboldt County understands the value of California's coastline, which belongs to the people of California. I care deeply about the well-being of our ocean ecosystem, and I want our precious resources protected so our children and their children can enjoy them. Please do not take steps toward allowing this industrial fish farm. Thank you for your consideration.

Chris Hamilton

**From:** [Jerry Tobe](#)  
**To:** [Planning Clerk](#)  
**Subject:** Nordic Aquafarms Project  
**Date:** Monday, July 25, 2022 4:56:41 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Dear Planning Commission,

350 Humboldt Grassroots Climate Action has submitted a comprehensive analysis of Nordic Aquafarms California, LLC's FEIR. One takeaway is Nordic Aquafarms California, LLC has been less than forthright, at least in their EIRs. We know it's unwise to do business with less than honest brokers, but that hasn't deterred government entities and elected individuals before, usually to the detriment of their constituencies.

The comprehensive analysis that 350 Humboldt Grassroots Climate Action has submitted mentions antibiotic resistant bacteria from fish feed associated with aquafarming. We know livestock feed containing antibiotics results in antibiotic resistant pathogens called superbugs. Humboldt County and Humboldt Bay shouldn't have to deal with or be the source of superbugs.

The impact that Nordic Aquafarms' Norwegian facility had on the surrounding environment is still unknown as is the reason that they stopped farming Atlantic salmon and as are other recent business decisions - potentially relevant information in the decision making process.

I strongly recommend you get Nordic Aquafarms California, LLC to

- provide a one million dollar bond that you invest in a portfolio of dividend paying, medium risk stocks and roll those dividends back into that portfolio until you need the money for things that go wrong with/at Nordic Aquafarms or when they close/abandon the farm, and

- install solar microgrids in Humboldt to equal their unmitigated energy. install solar microgrids in Humboldt to equal their unmitigated energy. These could be installed at hospitals, fire houses, community centers, schools, assisted living and nursing homes, waste treatment plants, and water districts. Solar microgrids cut emissions from our current fossil fuel dependent electricity and provide safeguards for power outages

if you decide to permit Nordic Aquafarms California, LLC to proceed.

May you do ONLY that which is truly best for the environment and the vast majority of people living in Humboldt County, and cause those people as little harm as humanly possible.

Thank you for reading my email.

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Best Regards,  
Jerry Tobe

**From:** [Karen Berger](#)  
**To:** [Planning Clerk](#)  
**Subject:** Regarding the Planning Commission Hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC,  
Record Number PLN-2020-16698  
**Date:** Sunday, July 24, 2022 4:47:42 PM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

**Please do not certify the final Environmental Impact Report and deny the permit for the following reasons:**

- 1. The massive electricity use (equal to Eureka and Fortuna together). We are going to need it to electrify all of our transportation and buildings;**
- 2. The role of salmon farming for the US in a world where 350 million people don't have enough to eat;**
- 3. The 100,000 or more metric tons of greenhouse gases that will be emitted annually by the fish feed;**
- 4. The fact that Humboldt Bay already has local sustainable aquaculture in the form of our oyster farms; and**
- 5. The risks: Tsunami, earthquake and fish escape.**

**Thank you in advance for your consideration in this matter.**

**Karen Berger**

**Lifelong Resident of California for 68 years and Environmental Activist**

**From:** [Rebecca Jean Emigh](#)  
**To:** [Planning Clerk](#)  
**Subject:** Pertaining to the Planning Commission hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC, Record Number PLN-2020-16698.  
**Date:** Monday, July 25, 2022 9:51:50 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Please deny the final EIR-it should not be certified and the permit should be denied. This project will emit too much greenhouse gas and use too much electricity. Humboldt Bay already had sustainable aquaculture.

Rebecca Jean Emigh  
Professor Sociology, UCLA  
18135 Karen Drive  
Tarzana CA 91356

**From:** [Sue Y Lee](#)  
**To:** [Planning Clerk](#)  
**Subject:** Pertaining to the Planning Commission hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC, Record Number PLN-2020-16698  
**Date:** Monday, July 25, 2022 4:32:46 PM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Dear Planning Commissioners,

Nordic Aquafarm plans to construct facilities that can withstand a 9.5 Richter scale earthquake. That is good. However, the real question is, can the plant remain unaffected by a major tsunami event? Tsunamis occur here often enough that we have road signs near the coast that alert drivers that they are leaving or entering such an area. Should a major tsunami inundate the proposed Nordic Aquafarm installation, can they guarantee that none of the Atlantic salmon at any life stage are swept into the ocean? I doubt they can.

If my doubt is correct, they probably should be denied a permit to build their proposed location or possibly should be required to use a local species of salmon.

Nordic Aquafarm can possibly do some good for this area, but their plans as proposed require my opposition.

For further information about tsunamis, see articles published in [Science](#), 1 July 2022, 377(6601):30-31, 91-99.

Sincerely,  
Archie S. Mossman  
PO Box 223  
Arcata, CA 95518  
707.677.3669



**Pertaining to the Planning Commission hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC, Record Number PLN-2020-16698**

To the Planning Commissioners and staff:

The original promise of the Nordic Aquafarm project has significantly dimmed after the EIR process failed to resolve several problems. The GHG emissions from energy use, refrigerant use, and transport remain well above the sustainable threshold. Factor in the GHG emissions of the fish food, and the increase is truly daunting. Perhaps it would be tempting to shout, "Damn the torpedoes. Full speed ahead!" if this were a different time. It may be difficult for many of us to grasp that we must alter our priorities and our approach to business if the current climate emergency isn't to become catastrophic.

The basic concept of RAS aquaculture could be a good fit for the Samoan peninsula if the project were scaled much differently. Growing Atlantic Salmon, in particular, apparently poses such huge challenges that only one company, Atlantic Sapphire, has actually produced salmon, using the RAS technique, and it has lost millions of dollars and hundreds of thousands of fish. Its CEO, Johann Amdreassen, warns that growing Atlantic Salmon on the scale they are attempting is very difficult. Their biggest operation aims for 10,000 tons of salmon--less than half of Nordic's target. The die-offs demonstrate that technology for these gigantic aquaculture factories is not yet well developed. Is a project that hasn't succeeded on a pilot scale yet a good investment for Humboldt county?

The energy efficiency of this proposed operation is also in question, making the climate impacts of its GHG emissions unacceptably high. Nordic's promise to use only renewable energy is somewhat abstract at this time. At best RCEA would procure clean energy contracts from sources somewhere in California that theoretically displace fossil fuel use--at least until the rest of the state completes the transformation of its grid. We hope that happens as soon as possible, and we hope that PG&E will shut down its natural gas operation by 2045. Meanwhile, that's where our energy comes from, not to mention biomass electricity, which is more carbon-intensive than natural gas.

So the reality of our energy supply here in Humboldt county has a very long way to go before we can truly claim that it's a hundred percent clean and renewable. Increasing our energy usage by 25% while complying with SB 32 to decrease our carbon emissions by 40% below 1990 levels by 2030 seems all but impossible. Do we think everyone else should do it but not us? Nordic's proposed 4.8 MW rooftop solar array is a good start, but supplies only a small fraction of its need. What Nordic really needs is access to a giant wind farm, so they might be in luck a few years down the road. Unfortunately, in light of all the uncertainties right now, we cannot count our megawatts before they hatch.

A large, essential operational feature for any fish farm is the use of refrigerants. Commercial refrigeration typically loses 25% of its chemical charge every year. Unfortunately, Nordic has refused to identify which refrigerants they will use or to commit to using the refrigerants with the lowest global warming potential. They say only that they will follow the law--a promise that strikes fear into the heart of anyone who has studied refrigerants. The law currently permits refrigerants that retain two thousand times more heat than carbon dioxide to be used in commercial systems. Without this vital information, how are we to assess a major sector of emissions for this project?

A quite similar lack of concrete detail applies also to the estimates of vehicle miles traveled cited in the EIR. These miles would be incurred by transport of their product and of the fish effluent to Marysville. We have to wonder where they got the number of 2,268, 907 miles when they state in the EIR that "Specific trip lengths (such as minimum, maximum, average, or distribution) for short-hauling and

long-hauling were not known." Such opacity fails to inspire anyone's confidence in the accuracy of their estimate of 2371 metric tons of carbon for their transport--not that that isn't a sufficiently impressive amount.

Perhaps the issue of food for the fish presents the thorniest problem. Guaranteeing a sound food supply is, of course, number one priority for the future. It makes intuitive sense to farm fish to supply high-quality protein and to take pressure off wild stocks which are dealing with worsening ocean conditions. However, Atlantic Salmon need as much food as they supply. Even if we justify converting bottom fish--food for the world's poor--to a high-end product for the middle and upper classes, we need to further justify the expense of so much energy devoted to the process of catching the fish, processing them and shipping them.

Nordic has promised to procure certification from the Aquaculture Stewardship Council, which tracks all aspects of fish farming, including procuring the feed and the subsequent GHG. For the amount of fish food Nordic would require, those emissions would amount to around 150,000 metric tons per year, according to sustainability reports from Skretting and Cargill, two producers of fish feed. That Nordic's EIR leaves out entirely this impact while promising to meet ASC standards throws their credibility, or at least their sincerity, into doubt. Apparently, a CEQA technicality permits Nordic to leave those emissions out of the EIR because they would originate outside of California. Everybody knows this is an unnatural way to define emissions, which have no geographical loyalties.

Humboldt Bay's suitability for sustainable aquaculture is already proven. Twenty-one acres of bay have been pre-permitted for shellfish and seaweed farms, and four farms are active now. Much more is possible. Shellfish and seaweed aquaculture uses very little energy, sequesters carbon, and cleans the water besides. This standard of sustainability is hard to match, but fish farms should aspire to follow as closely as possible.

If Nordic would agree to a much smaller project, raise a less voracious species, and wait until offshore wind energy is a reality, they could truly claim to care about sustainability. No doubt their business is to flourish financially today, but our business is to make sure the future is included. We need new responsible models for how we do business in our imperiled world. Sustainability is not a pc catch word. It's a stark necessity, and the costs of ignoring that are becoming more and more evident, pointing to a disastrous outcome if we fail to re-tool our approach to business.

Thank you for considering these remarks.

Martha Walden  
editor of 350 Humboldt LookOut

**From:** [Sue Y Lee](#)  
**To:** [Planning Clerk](#)  
**Subject:** Pertaining to the Planning Commission hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC, Record Number PLN-2020-16698  
**Date:** Monday, July 25, 2022 4:35:55 PM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Dear Planning Commissioners,

I am requesting that you do not certify the final EIR and deny permitting for the Nordic Aquafarm (NAF) Project as currently presented.

In the big picture of climate warming, the cost of energy from fossil fuel sources for farming a nonnative species of fish on the Samoa Peninsula to provide food is too high, and does not justify the exacerbation of global warming that this project will make on earth's climate.

I am concerned about the business plan of the corporation.

It does not make financial sense for our County to invest in a firm that has yet to show success with three continuous cohorts, the basic standard for a sound business plan.

Also as of earlier this month, the current CEO of NAF admitted that it still has not secured the \$650 million bank loan they need for this project, and that the banks are waiting to see how well NAF's smaller scaled Florida Atlantic Sapphire plant does.

To me, it does not make financial sense for our County to invest in a firm that has split off from the parent Nordic corporation as recently as April, 2022. Additionally, the parent Norwegian and Danish operations are shifting to farming yellowtail kingfish. Such a recently formed venture is a risky investment for Humboldt County. There are too many organizational and financial issues here for me to feel comfortable with this investment.

We, the taxpayers of Humboldt County, will be left holding the bag if this NAF should fold due to the many other issues such as energy, transportation, ecological, seismic, and others that have not been adequately addressed by their EIR.

Sincerely,  
Sue Y. Lee Mossman  
PO Box 223  
Arcata, CA 95518  
707.677.3669

# REDWOOD REGION AUDUBON SOCIETY

P.O. BOX 1054, EUREKA, CALIFORNIA 95502



July 26, 2022

Planning Commission  
Humboldt County Courthouse  
825 5th Street  
Eureka CA, 95501

Subject: Comments on Nordic Aquafarms Samoa Peninsula Land-based Aquaculture Project  
Final Environmental Impact Report

Dear Commissioners:

Our comments on February 15, 2022, May 21, 2021, and July 3, 2021, on the Draft Environmental Impact Report, Impact Statement, and Notice of Preparation, respectively, expressed our concerns regarding the seawater intake mitigation for marine life entrainment and impingement, fish food sourcing, and water quality.

## **Seawater Intake**

We agree with the California Department of Fish and Wildlife in that the proposed mitigation for longfin smelt (LFS) continues to be mostly hypothetical and based on incorrect assumptions regarding the vulnerability of LFS to impingement. We also continue to be concerned about the potential for impingement and entrainment of other planktonic size biota that have not been fully evaluated in the DEIR or FEIR. **We therefore request that a full study on these issues be completed as a requirement of a permit to operate.**

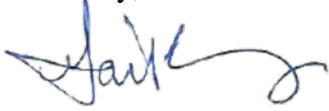
## **Fish Food**

The response to comment 516-12 on third party certification the FEIR states “These certification standards also develop over time to adapt to current situations and challenges, it would therefore be premature to lock in the standards today; instead, NAFC will use the best available certification once in operation.” **We request that language required for the operating permit stipulate that third party certification of marine sources for fish food be the most protective of the marine environment.**

## **Hydrology and Water Quality**

As indicated in comment letter 503, neither Trinidad Harbor nor the entrance to Humboldt Bay are indicative of conditions at the proposed point of wastewater discharge. The FEIR attempts to justify potential environmental impacts based on data from these two locations but fails to incorporate existing data that includes the point of discharge. **We believe this omission makes the FEIR deficient and request that all existing data be included in a supplement as a condition of FEIR approval.**

Sincerely,

A handwritten signature in blue ink, appearing to read "Gail Kenny", with a stylized flourish at the end.

Gail Kenny, President  
Redwood Region Audubon Society

Copies:

Humboldt County Board of Supervisors

Humboldt County Supervisor-elect, Natalie Arroyo

**From:** [Greg Camphire](#)  
**To:** [Planning Clerk](#)  
**Subject:** RE: Planning Commission on July 28 for Nordic Aquafarms California  
**Date:** Tuesday, July 26, 2022 3:57:36 PM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Hello,

Pertaining to the Planning Commission hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC, Record Number PLN-2020-16698, I am writing to ask that the final EIR not be certified and the permit denied for Nordic Aquafarms California.

Humboldt Bay already has local sustainable aquaculture in the form of oyster farms, and the massive electricity use (equal to Eureka and Fortuna together) would be better suited for transportation and buildings. At least 100,000 metric tons of greenhouse gases will be emitted annually by the fish feed. There are also additional risks due to potential earthquakes, tsunamis, and escape of fish.

Please do not certify the final EIR. Please deny the permit for Nordic Aquafarms.

Thank you,  
Greg C.

Scroll down to view attachments if  
attachment links below are broken.  
(They should work)  
This will be our system moving forward  
- Trip

**From:** [David Sopjes](#)  
**To:** [Planning Clerk](#)  
**Subject:** Nordic Fish Factory PLN-2020-16698.  
**Date:** Wednesday, July 27, 2022 10:49:01 AM  
**Attachments:** [HumCo Planning Commission Statement on Nordic Fish Factory.pdf](#)  
[HumCo Planning Commission Statement.pdf](#)

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Good Day

I am commenting on the proposed permit for Nordic's fish factory PLN-2020-16698..

### Planning Commission Statement

28Jul22

My name is David Sopjes and I have lived in Humboldt County for 45 Years. I am a retired science teacher and I have a quiz for you. "Do you think that 5million salmon will produce more sewage waste or less sewage waste as the 45,000 citizens of Eureka?" The correct answer is that 5 million salmon will produce much more waste than 45,000 Eurekaans. They will produce 3.9X as much or the waste equivalent of 175,000 people based on Biological Oxygen Demand. High BOD creates anoxic dead zones in receiving waters. Our coastal waters already are at risk from upwelled anoxic waters during spring and summer, but this cumulative effect is not even addressed in the DEIR. This factory uses bacteria to convert its Ammonia to Nitrate potentially resulting in algal blooms in the receiving water. NOAA Fisheries pointed this out as a potentially significant impact, but were told by the paid industry spokesscientists that dilution is the solution.

When I first heard about this project, 3 years ago, I researched the peer reviewed literature about Recirculated Aquaculture Systems and became concerned about the massive potential for waste production from these factories. The ocean disposal pipe that Nordic is using is not regulated by safe concentration limits on pollutants. They are only required to remove a percentage of the pollutant based on what enters their waste treatment facilities. According to their NPDES permit for BOD, Nordic is required to remove 90% of the BOD that enters the facilities, they are allowed to dump 10% of their BOD. Also 10% of their Phosphorus and suspended solids and 15 % of their total nitrogen. This type of regulation favors the large polluter at the cost of the environment. Nordic has promised the public, in their Project Design Document, that they will only dump 1% of their BOD, Phosphorous, and suspended solids and 10% of their Nitrogen. However, when a monitoring program was put in place, as per DIER, Nordic said that regulators would have to prove that the factory was responsible for an observed environmental impact and that its effluent exceeded their Federal NPDES permitted amounts. It is incorrect for the planning commission staff to recommend this permit using Nordic's promised waste reduction numbers as justification. They should have used the NPDES required numbers, since 10% of their BOD is 10 X the pollutant compared 1% of BOD.

There has been much discussion of the Greenhouse Gas Emissions from this factory and how to mitigate them. That is important because they will use about a quarter of our available energy if we don't get wind turbines. The GHG from this factory would be about 80 million kilograms of GHG equivalent to 200 million passenger miles. There is no mention in their EIR of the GHG emissions from the settled sludge, made up of uneaten food and manure, produced by their waste treatment plant. They plan to truck it to Maryville and have Recology of California compost it and spread it on fields. This amounts to around 10 million kg of GHG, equivalent to 25 million passenger miles. This material will have a salinity 80% of salt water. I would never put salty compost on my fields. This would certainly represent a significant environmental impact in Maryville, but that is not considered in this project.

The EPA calls the business model for this factory a Confined Animal Feeding Operation. It is an organic carbon intensive process. Trucking in large amounts of organic carbon as carbohydrates, proteins and fats in the feed, trucking out product and sludge, and dumping an organic soup into the ocean. Based

on the production expected from this factory, this is equivalent to a CAFO with 9000 steers. The EPA says a large CAFO is 1000 steers.

Most of you remember the deal where we were told you didn't need healthy rivers for salmon. As long as you have dams and hatcheries, the ocean will raise the fish. Nordic would tell you that you don't need healthy rivers (just a little water) OR healthy oceans (just a place to dump the waste) and you can have all the "salmon" you can stand. I guess they really are the future of fisheries.

I am also attaching a report I produced citing the peer reviewed literature that applies to this factory.

David Sopjes  
3703 Grizzly Bluff Rd  
Ferndale, CA 95536



## Planning Commission Statement

28Jul22

My name is David Sopjes and I have lived in Humboldt County for 45 Years. I am a retired science teacher and I have a quiz for you. “ Do you think that 5million salmon will produce more sewage waste or less sewage waste as the 45,000 citizens of Eureka?” The correct answer is that 5 million salmon will produce much more waste than 45,000 Eurekaans. They will produce 3.9X as much or the waste equivalent of 175,000 people based on Biological Oxygen Demand. High BOD creates anoxic dead zones in receiving waters. Our coastal waters already are at risk from upwelled anoxic waters during spring and summer, but this cumulative effect is not even addressed in the DEIR. This factory uses bacteria to convert its Ammonia to Nitrate potentially resulting in algal blooms in the receiving water. NOAA Fisheries pointed this out as a potentially significant impact, but were told by the paid industry spokesscientists that dilution is the solution.

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Most of you remember the deal where we were told you didn't need healthy rivers for salmon. As long as you have dams and hatcheries, the ocean will raise the fish. Nordic would tell you that you don't need healthy rivers (just a little water) OR healthy oceans (just a place to dump the waste) and you can have all the "salmon" you can stand. I guess they really are the future of fisheries.

To whom it may concern

I am opposed to the permitting of the Nordic Fish Factory facility proposed for the Samoa Spit. My main concern is the size of the factory and the amount of waste that will be produced. Nordic and the County of Humboldt have not been transparent or completely honest with the citizens of Humboldt. This facility will produce the same amount of waste as a medium sized city (175,000 people based on BOD). Nordic and the County have never mentioned this to the public. They continue to state that the waste treatment standard is the highest in the industry, removing 90% of the total nitrogen and 99% of everything else. Nordic's effluent content table in their Project Description Rev2 contains a list of their production per day for each pollutant. It is possible to work backwards to determine the 100% amounts that are produced by the fish and presented for waste treatment. These 100% values indicate that the factory will be producing the waste equivalence of a medium sized city. I have completed the following analysis of Nordic's waste production numbers. I can't see how you can say that the waste equivalent of 175,000 people dumped in the ocean for the next 50 years will have "no significant adverse environmental effect"? Why don't you tell the citizens of Humboldt the whole truth?

### **Response to Nordic Project Design Rev2 (11/2020)**

#### **Calculation of Waste production ratios for the facility based on data supplied in Project Design Rev2**

The Project Design Document Rev 2 claims: "The total RAS and wastewater design delivers the following performance:

1. 99 percent reduction of total suspended solids, BOD, and phosphorous
2. 90 percent reduction of nitrogen discharge (page 30)"

Figure 2-3 Wastewater Treatment Infrastructure diagram on page 31 indicates 99% removal of phosphorous.

They present the following table on page 32

"Table 2-5 Project Daily Maximum Effluent Summary

#### **Effluent Discharge**

Total Water volume 12.5 MGD

Total Suspended Solids (TSS) 18 KGD

Biochemical Oxygen Demand (BOD) 162 KGD

Total Nitrogen (TN) 673 KGD

Ammonium Nitrogen (NH<sub>4</sub>) 0.07 KGD

Phosphorus (P) 5.8 KGD

Notes:

1. MGD = Millions of Gallons per Day
2. KGD = Kilograms per day"

If these values for effluent kg/d are based on the percentage waste reduction values stated previously in the Project Design document, then we should be able to use those reduction percentages to calculate the original (100%) amount of waste produced by the facility and presented to the waste treatment plant. By comparing the waste(kg) produced to the fish(ton) produced, we get the waste production ratio.

1) **Total Suspended Solids**- If 1% of the TSS=18kg/d, then 100% = 1800kg/d or( $\times 365$ ) =  $6.57 \times 10^5$ kg/yr. If they produce 25,000 tons of fish/yr, then that yields a **waste production ratio** of  $6.57 \times 10^5$ kg/yr: 25,000 ton/yr = **26.28kg TSS /ton of fish produced**

- SHN report for RMTII(SHN,2016) = 306.5 kg/ton so Nordic's system produces 8.57% of what SHN expected from a fin fish aqua culture system

- Eureka waste water treatment plant(inflow)(page 5-City of Eureka,2017) = 442lbs/d or 200.9kg/d July 2017 so Nordic is claiming they produce 8.9% of the TSS that the City of Eureka (45,000 people) produces

2) **BOD** – If 1% of BOD=162kg/d, then 100% = 16,200 kg/d .

-Eureka waste water treatment plant report for July 2017 shows a mean BOD(inflow) = 9185 lbs/d or 4,175kg/d (page 5). So Nordic's BOD waste production is 3.88X the City of Eureka (45,000 people) or **174,610 human waste equivalence**

3) **Total Nitrogen** – If 10% of TN = 673kg/d, then 100% = 6730kg/d or  $X(365) = 2.45645 \times 10^6$  kg/yr. If they produce 25,000 ton of fish/yr, the that yields a **waste production ratio** of  $2.45645 \times 10^6$  kg/yr: 25,000 tons/yr = **98.258 kg Nitrogen/ton of fish produced.**

- SHN report for RMTII(SHN,2016) = 55.8kg/ton

-Atlantic Salmon in China (Song et al, 2019) section9 Table S13 = 49.5 - 65.1 kg/ ton

-So Nordic's system produces 1.76X the Total Nitrogen waste as SHN expected

4) **Ammonium Nitrogen (NH4)** - .07kg/d. Based on the 12.5MGD volume, that is a concentration of 1.5ppb that is 100X less than the safe concentration of ammonium in the seawater they are raising the fish in, so this number is sketchy.

- Eureka waste water treatment plant reported a mean NH4 max discharge in the effluent in 2017 (annual report page 8) = 253.7 lbs/d = 115.3kg/d.

-Nordic is claiming that they are producing .07/115.3 or .06% mean Max NH4 effluent of the city of Eureka

5) **Phosphorous** –If 1% of the Phosphorous = 5.8 kg/d, then 100% = 580kg/d or  $X(365) = 211,700$ kg/yr. If they produce 25,000 ton/yr, then that yields a **waste production ratio** = 211,700kg/yr: 25,000ton/yr = **8.468kg/ton.**

- SHN report for RMTII(SHN,2016) total Phosphorous = 8.9kg/ton

- Atlantic Salmon in China (Song et al, 2019) section9 Table S13 =10.2kg/ton

- So Nordic's system produces 95% of the phosphorous expected by SHN at RMTII

## SUMMARY

Nordic claims its Total Suspended Solids waste production ratio is 12X better than what SHN expected and the China Atlantic Salmon study reported. Nordic claims its NH4 production per day is .06 % of the City of Eureka. I have little confidence in either of these numbers. The Phosphorous waste production ratio is about 95% of the SHN estimate so it is possible that they will achieve this ratio.

Nordic's system produces 1.76X the Total Nitrogen waste as SHN had expected. This number seems a little high since SHN's numbers are "more than 10 years old and do not apply here", as Harbor Commissioner Mr. Pat Higgins told me, and I expected Nordic to be more efficient than that. Nordic's BOD waste production is 3.88X the City of Eureka (45,000 people) or 174,610 human waste equivalence. This high BOD is due to the high organic carbon content of the factory's waste stream. That estimate is consistent with the estimates I have made using other waste production ratios.

This Factory will produce settled solid waste as part of their waste treatment operation. This sludge is to be dried on site and then transported, by at least 4 tanker trucks per week, to a disposal facility in the central valley operated by Recology of California. The Nordic DEIR estimates this will be 4,000 tons per year at full

operation. The Life Cycle Analysis of a similar RAS Facility in China found that the sludge produced was approximately 50% of the Feed mass(Song,2019; Mongirdasa 2019). This would be 12,000 tons for the Nordic Factory. This material is composed of fish manure and uneaten food and will be composted and spread on fields. This practice is common for sludge generated by urban waste treatment facilities. There are two significant issues with this part of Nordic's waste treatment plan. First, this facility is raising salmon in salt water and the settled solids will have a salinity that is 80% of sea water. Where will all the salt end up and will salty compost be marketable? Second, this composting produces large amounts of greenhouse gases in the process. A typical ton of municipal sludge produces 750kg of greenhouse gas equivalent when composted and spread over fields(Hong-tao,2016). Nordic's sludge would produce at least 9 million kg of greenhouse gases each year. The sludge from this process contains much more organic carbon than typical municipal sludge and will produce much more GHG. The EPA says a typical passenger vehicle produces .404kg GHG per mile driven( US EPA). Nordic's GHG production from their sludge is the equivalent of up to 22 million passenger miles each year. This would be occurring for the next 50 years, at least. Does this project help California meet its zero carbon goals?

This is not surprising for a business model that is based on trucking in massive inputs of organic carbon(feed) that will be turned into 25,000 tons of organic living tissue (fish 90% water) while producing massive amounts of organic carbon waste to be dumped in the ocean or "composted" on land. This business model is commonly known as a "Confined Animal Feeding Operation" or CAFO. This factory's production would be the equivalent of a 9,000 steer CAFO ( fish have 5X the feed conversion ratio compared to 1000lb steers). The EPA considers a large CAFO to be 1000 steers (US EPA). Would this be approved if they were actually planning for a 9000 steer CAFO on the Samoa Peninsula?

Initially, Nordic wanted to avoid any monitoring of their waste dumping into the ocean. They claim to be removing 99% of the total suspended solids, BOD, and phosphorous and 90% of the total Nitrogen. They claim this is the best in the industry. When they were required to monitor their waste effluent in their DEIR, they said that regulators would have to prove that any problems with algal blooms are due to Nordic's operation and that their waste effluent is more than what their Federal NPDES permit allows. Their NPDES permit only requires 90% and 85% removal of these contaminants, respectively. They are allowed to dump 10X they amount they are claiming to dump They won't stop dumping, but they have changes to their feed and feeding schedules that they are willing to implement. They cannot stop dumping in the ocean without losing their entire operation. You can bet they will claim they are too big to fail compared to the damage they are doing to our tiny local fisheries and ecosystem. This will certainly involve a long, expensive court battle.

The Project Description Rev2 indicates that the Nordic Fish factory now requires 12.5 MGD. I expected this request for increased water usage because I did not think they would be able to clean their recirculated water without more effluent flow. I am certain it won't be the last request for more effluent water. In my analysis, I have focused both on the mass of waste produced by the factory as well as waste concentrations, which can change with changing effluent volumes. The actual volume of effluent will affect the concentrations of waste that oceanic organisms are initially exposed to, but it does not affect the total amount of waste produced by the Nordic Fish Factory, which depends on the total fish production level (25,000 ton/yr). The observed waste production ratios are not affected by any change in effluent volume. It is my prediction that they will be asking to be allowed more effluent when they begin operations and find they have trouble cleaning the recycled water well enough to keep their fish alive. The City of Eureka is considering connecting to the ocean outfall pipe in the future. Eureka's effluent combined with Nordic's effluent and winter rain water that enters the system, the ocean outfall pipe could easily reach 80% of it supposed capacity(40MGD), leaving little room for Samoa's and Manila's waste treatment systems to also use the ocean outfall pipe. As a citizen of the Humboldt County Ecosystem, I consider our dumping of our citizens' waste into our rivers and ocean as a manageable, necessary evil and I applaud our waste treatment professionals for taking good care of our rivers and oceans/bays as our county has grown (Arcata and Fortuna, not so much Eureka). Nordic's Fish Factory dumping their wastes into our ocean for their own profit is an unnecessary evil. Their promised benefits to our county pale in comparison.

Most of you remember the deal where we were told you didn't need healthy rivers for salmon. As long as you have dams and hatcheries, the ocean will raise the fish. Nordic would tell you that you don't need healthy

rivers (just a little water) OR healthy oceans (just a place to dump the waste) and you can have all the “salmon” you can stand. I guess they really are the future of fisheries.

David Sopjes

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According to globenewswire.com, global aquaculture generated 2018 revenues of \$271.66 billion, and is expected to grow to \$376.48 billion by 2025.

Well, unless it doesn't.

As marine fish stocks experience widespread decline, Big Aqua is rushing to fill the void with all manner of manufactured frankenfish. Nary a week passes without a new industry scheme for "growing" fish on land or in marine waters. Environmentalists have rightfully laid siege to Big Aqua for years, causing each new fish "farm" design to promise the world new, intoxicating environmental heights never before imagined.

Norway leads the industry pack. But after laying waste to large swaths of Norway's marine waters, Norwegian investors, venture capitalists, self-professed farmers and at least one convicted fraudster have set their sights on distant shores. And my home of Maine is right in their crosshairs.

The industry is salivating over the Pine Tree State. Cold, relatively clean water. Relatively cheap real estate. Cheap, mostly union-free labor with a reputation for tough, hard work. An unsurpassed eco-brand standing all alone in iconic L.L. Bean winter boots with glorious snow-covered Mt. Katahdin rising in the background. Ready access to vast East Coast markets - Maine is within a day's drive of 100 million hungry people. Water laws dating back to bucket baths. And a very pliant state government.

Ground zero for aquaculture's Maine invasion is my midcoast town of Belfast, where Nordic Aquafarms of Fredrikstad, Norway, wants to build a \$500 million land-based industrial fish farm. Since announcing in February 2018, Nordic has met with tenacious citizen opposition and has been mired in a swamp of its own arrogance and incompetence. Two and a half years after its expected construction start, Nordic still lacks an Army Corps of Engineers permit and its Maine Department of Environmental Protection (DEP) and Belfast Planning Board permits are both facing lengthy and well-financed appeals.

But the real kicker is a lawsuit over ownership of intertidal land Nordic needs for its saltwater intake and effluent discharge pipes in Belfast. The trial began June 22, and June 23 saw startling testimony from Nordic Chief Financial Officer Brenda Chandler. In sworn testimony, Chandler said Nordic's position is that ownership of the disputed intertidal land is "unclear."

In order to even apply for its DEP permit, Nordic had to establish "right, title and interest" (RTI) to all lands it needs for its Belfast project, but with Chandler's testimony now throwing that RTI into doubt, DEP may require Nordic to redo its entire application, the original of which ran to more than 1,000 pages - most or all of which was written by lawyers at \$300 an hour - and which took the better part of a year to process. With Nordic already a woefully behind in Belfast, this would be a huge blow.

That whole legal mess could have been avoided. While negotiating to run its pipes through the land of out-of-state summer residents Janet and Richard Eckrote, Nordic discovered that intertidal flats presumed to belong to the Eckrotes might actually belong to Eckrote neighbors and longtime Belfast residents Judith Grace and Jeffrey Mabee - who happened to be selling their waterfront home. But rather than buy the property, Nordic tried to save a few bucks by withholding its inconvenient discovery from licensing agencies.

But firebrand Nordic opponent and deed-and-title research whiz Paul Bernacki discovered Nordic's subterfuge. Nordic went to the PR mattresses, posting to its Facebook page a bizarroland statement saying it wasn't their place to say who owned what. Realizing the statement amounted to a land-grab confession, Nordic promptly took it down.

If Nordic loses the land ownership case, it is likely finished in Belfast, dealing a major blow to Nordic, which has hemorrhaged money in Belfast, and dealing a major setback to efforts by Maine Governor Janet Mills (D) to paint Maine as a place eager to disrobe for Big Aqua.

Mills' campaign to bend over for aquaculture was laid bare by emails I obtained under Maine's Freedom of Access Act. The emails reveal an inappropriate and perhaps illegal campaign to pressure the DEP to approve Nordic's permit application. The questionable effort was championed by Governor Mills' brother Peter Mills, executive director of the Maine Turnpike and wingman for various big-boy polluters, foreign and domestic.

The emails have found perch in the Nordic legal and permit frays and have been shared with enviro groups around the state who may use them as ammunition in current legal wars and or as grounds to reopen yesterday's lost battles.

Meanwhile Nordic's and Big Aqua's woes have spread well beyond Belfast Bay. Inspired by Nordic's Belfast foes, opponents of a similar Nordic operation in coastal Eureka, California have tapped Belfast activists for tips and information. And Maine activists in and around Bar Harbor and RV-infested Acadia National Park are rising up to challenge a sea-based Frenchman Bay project that - like every Big Aqua project - promises brand new cutting-edge technology cleaner than the snow atop Mount Katahdin.

And in Miami, Atlantic Sapphire, another Norwegian player, recently killed off fully 800,000 fish in the world's biggest land-based frankenfish factory because it failed to gauge how noise and vibration emanating from ongoing plant construction would devastate its fish, resulting in dead fish clogging up discharge pipes. It's hard to say who is more imbecilic here: Atlantic Sapphire, for building a keenly water-intensive operation in a state with more sinkholes than fresh water, or the State of Florida for allowing it.

Adding to Big Aqua's Maine woes was the recent defeat of LD1473, a bill that would have exempted land-based aquaculture projects from all state building and energy codes. Rather than take a scalpel to the codes, Big Aqua went after all of them - and failed in grand theatrical fashion. In an official legislative hearing, broadcast worldwide via Zoom, State Senator Kim Rosen of coastal Bucksport, 18 miles east of Belfast, read her bill while carefully sipping a joyfully announced late-afternoon cocktail. Within a few short words it was clear the properly lubricated Rosen had neither written the bill nor knew its content.

Indeed, in an email given to me by Rosen friend and LD1473 opponent Dr. Sid Block, Rosen wrote to Block: "this bill could have been written by the aquafarms!!!"

Armed with the email, I fired off a letter to The Bucksport Enterprise, whose editor, Don Houghton, told me Rosen was decidedly unaccustomed to such public thrashing. According to Houghton, Rosen protested post-publication that she thought her email to Block "was some sort of private correspondence." Apparently she was wrong.

No doubt smarting from the published letter, and facing a veritable storm of anti-LD1473 letters and emails, Rosen ran for cover. She pillow-killed her own baby, urging her previously giddy colleagues to snuff the bill - which they promptly did.

With LD 1473 now inhabiting a rotting Himalayan pile of abandoned and defeated bills, and with Big Aqua opposition stiffening in Frenchman Bay, a failed Nordic land grab in Belfast might cause global Big Aqua to think twice about Maine's vaunted but perhaps withering hospitality. And that would be a victory for Big Aqua opponents from Oslo to Eureka.

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## The Incredible Vanishing Mr.Heim

By Lawrence Reichard

In Counterpunch June 24, 2021, I wrote about Big Aqua aquaculture sinking its fangs into my home state of Maine and into my midcoast home of Belfast, where Nordic Aquafarms of Fredrikstad, Norway, wants to build a colossal \$500 million land-based frankenfish farm. In dollar terms it would be the biggest industrial infrastructure in Maine - and physically bigger than Fenway and Gillette Stadium combined.

Ever since Nordic began to seduce Belfast's shot-callers five years ago, its Belfast schemes have been run by one Erik Heim, a sports-shirt middle age Norwegian who always looks like he can't decide whether to zip his fly now or wait till no one's looking. And Heim's wife, Marianne Naess, ran Nordic's delightfully incompetent PR department, which once sent a letter to every postal patron in Belfast, population 6,700. Four pages. Single-spaced. Misspellings. Tortured syntax. Bizarro layout. According to a recent Gallup poll, four people read it.

Before going public with its Belfast plans four years ago, Nordic and the City of Belfast wooed each other in a very effective echo chamber. Nordic said it was green and sustainable, and the city said there would be only a few crank opponents - everyone else will love you. It was love at first sight.

Five years and millions later, not one shovel in the ground. Oops.

And now Heim and Naess are suddenly gone. They announced their departure in a Facebook post that gushes about how they look forward to petting their pet chihuahua Harry, but it says squat about why they are actually leaving Nordic. And after four-plus years of pitting neighbor against neighbor here in Belfast, there will apparently be no farewell tour. Just post to Facebook and go back to, well, whatever.

It's hard to avoid thinking Heim got the guillotine for failing to deliver on Belfast. Five years in and they're still facing various lawsuits and permit appeals. Like black flies in a Maine spring, the shit just won't go away.

I was there when Nordic went public in February 2018. I entered the public information meeting in favor of the project, and I sat next to a wall sporting a big Power Point projection of the proposed plant area, around the southernmost mile of my beloved five-mile Little River Trail. The map showed the trail ending a half-mile before its current southern terminus. I asked Heim about that, and from across the room, with an arrogant chuckle and smirk, he said the map - right next to me - didn't show that.

That was the first of many Heim mistakes I would see over the next four years.

Like the time in his office in Fredrikstad when, without thinking, he gave up the name of Bent Urup, who designed, built, owned and sold to Nordic the company's plant in Hanstholm, Denmark. Heim's eyes immediately betrayed his regret at surrendering Urup's name. Heim stumbled and stuttered. "I don't know whether you'll find him. Last I heard he was bouncing around Southeast Asia." Google gave me Urup's phone and email in less than a minute, and a week later in his Fredericia, Denmark office, Urup said he had been following Nordic's Belfast hires and they simply weren't up to snuff.

When I published, a Nordic-Urup food fight erupted in the ubiquitous aquaculture trade journals. It was johnny-come-lately Nordic against the best land-based aquaculture designer, engineer and entrepreneur in the business.

But Nordic and Urup finally figured out they were both getting covered in flying food, so they kissed, made up and trained their guns on me. In another public information meeting Heim said I had misquoted Urup. I stood up, held my iPhone high and said, "It's all right here, on tape." Heim stood there wordless. Game. Set. Match.

But Nordic wasn't completely inept at PR. On that same 2018 trip to Denmark I interviewed a 14-year-old kid who had worked for Nordic, cleaning out empty fish tanks with Virkon S, a highly toxic industrial cleaner made by our good friends at DuPont. I asked the kid whether he used protective eyewear. No. So I called the Danish equivalent of OSHA. Under Danish law it's illegal to handle Virkon S without protective eyewear, and it's illegal for minors to handle it at all.

When I published that, Nordic said it had never hired underage workers - which I never alleged. Intro to PR 101: if you have no defense to the charge made, defend yourself from a charge that wasn't made.

Then there was the time Erik Heim filed an official court affidavit saying firebrand Nordic opponent Paul Bernacki had so intimidated the Maine Department of Environmental Protection that it, the DEP, canceled an official visit to the site where Nordic wants to spew 7.7 million gallons of effluent a day and disrupt and disperse God knows how much relatively settled and inert industrial mercury.

The only problem is DEP didn't cancel the visit. It was delayed one day by rain. And Heim was at the visit, as was I. I saw Heim there and his name is to this day on the official list of attendees, landing Heim's later affidavit somewhere between wildly incompetent and quite bizarre.

But blaming all of Nordic's chronic ineptitude on Heim and Naess would be a disservice to surviving Nordic officer Bernt Olav Rottingsnes, who was recently quoted as saying Nordic needs bank loans but banks are reluctant to lend to Nordic. Interesting approach: try to get a loan from Bank D after telling reporters banks A, B and C won't lend to you.

Not to mention the failure of Nordic and the City of Belfast to square their story when the city tried to soothe an ever-louder Nordic opposition by wasting \$8,000 on a puff-piece report on Nordic by global consulting firm Deloitte - which had repeatedly done work for Nordic. Then City Manager Joe Slocum said publicly he had never before hired a consulting firm. Indeed, Slocum didn't even know how to call Norway. Slocum nonetheless insisted he found Deloitte all by himself, but then Heim later told me in his Fredrikstad office he had given Slocum a list of consulting firms and Deloitte was on the list. Oops.

But don't worry, Nordic's endlessly amusing incompetence will likely survive if Heim is, as rumored, replaced by Nordic Chief Financial Officer Brenda Chandler. In sworn testimony in Waldo County Superior Court in Belfast, Chandler wandered way off company script and said ownership of intertidal land Nordic needs for its project was unclear. If the Maine Department of Environmental Protection played by the rules, Chandler's sworn testimony would have been enough to throw out Nordic's 2,000-page DEP permit application, for which one must - theoretically - demonstrate clear title to all needed lands. Fortunately for Nordic, DEP rules are strictly for suckers and losers, not alleged fat cats with burgeoning wallets no one has ever seen.

So we'll miss you, Erik and Marianne. Just about as much as we miss Joe Slocum. And just about as much as we'll miss Brenda Chandler when she's gone.

*Lawrence Reichard is a freelance writer and editor in Belfast, Maine. He can be reached at [thedeftpen@gmail.com](mailto:thedeftpen@gmail.com).*

## Humboldt County Rolls the Dice with Brand-new Nordic Chief

At a July 12 Humboldt County Board of Supervisors meeting, incoming Nordic Aquafarms CEO Brenda Chandler sought to reassure the board after the sudden and unexplained departure of previous Nordic CEO Erik Heim. "I'm still getting up to speed on all the aspects for California but I still have a great team behind me," Chandler said.

Well, if that's the case, then the team behind Nordic's CEO du jour must have changed substantially since late 2018 when Bent Urup, the world's foremost aquaculture designer, engineer, operator and entrepreneur told me in his Fredericia, Denmark office that the team Nordic had assembled for its then \$500 million Belfast, Maine project simply wasn't up to snuff.

Chandler further told the Board of Supervisors Nordic has "worked on some very large projects on the East Coast," but this is simply false. Nordic has "worked" only one east-coast project - that of my hometown of Belfast, Maine - and 'in five years of pursuing that project, that "work" has included not one day of actual construction. Putting it kindly, that miserable track record is enough to discourage any would-be investor, especially in an industry that is suffering low prices for its salmon product and considerable pandemic-era salmon price fluctuation.

Chandler also said Nordic has an east-coast "employee on the ground." Are we to be reassured by Nordic having one employee on the ground for a project of a pre-pandemic \$500 million? This is the managerial equivalent of hiring a security to watch the place - day shift only.

Meanwhile, the Humboldt County Planning Commission will hold a July 28 meeting on Nordic's permit application. According to the Mad River Union, Planning Director John Ford said the main issues to be addressed will include carbon emissions, truck traffic, and preventing fish escape.

Having covered Nordic in Maine for more than four years, I hope your planning commission isn't relying on Nordic information in its deliberations, as Nordic has, here in Maine, misled and outright lied about these issues and others.

Nordic's stated carbon emissions for Maine don't include having to dig up and truck off thousands of truckloads of earth to stabilize its construction site. This after declaring the site "perfect." And shockingly, this mirrors the same exact problem Nordic has had in its hometown of Fredrikstad, Norway, where its failure to properly assess its construction site caused its building to sink into the ground, likely causing structural damage to the buildings, likely causing Nordic to significantly reduce production levels, and even causing the company to at one point announce it would convert the operation into a research facility...only to later abandon that short-lived idea.

Needless to say, this incompetence, identically repeated in Belfast, would dramatically affect Nordic's rosy declarations of just a few nice little electric trucks a day in Belfast.

Nor do Nordic's rosy carbon protestations include transporting large amounts of fishmeal ingredients from far-flung corners of the world, or the killing of topsoil - a major carbon mitigator - by the use of pesticides to grow soy and possibly other grains for aquaculture's grossly inefficient food-production model.

Then there are fish escapes, for which one look no further than the false February 2019 testimony given by Nordic's Marianne Naess to the Maine legislature's Joint Standing Committee on Agriculture, Conservation and Forestry, in which Naess said fish can't escape from land-based industrial fish farms. Naess's testimony completely contradicted various press accounts of just such escapes from land-based industrial fish farms in Norway and New Brunswick - to name the ones we know of. Even more shocking, Naess's testimony contradicts previous statements made by Nordic itself, in public meetings and on its website.

And on and on. As if evidence of Nordic's unreliability - and fundamental incompetence - were somehow sorely lacking.

I wish the Humboldt County Board of Supervisors and Planning Commissions all the best with their Nordic deliberations, but if they're looking to Nordic Aquafarms for reliable data, the historical record very much suggests they are looking in the wrong place.



**From:** [Lee Dedini](#)  
**To:** [Planning Clerk](#)  
**Subject:** Pertaining to the Planning Commission hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC, Record Number PLN-2020-16698.  
**Date:** Wednesday, July 27, 2022 7:21:21 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Pertaining to the Planning Commission hearing to be held July 28, 2022 for Nordic Aquafarms California, LLC, Record Number PLN-2020-16698.

The Final Environmental Impact Report for the Nordic Aquafarm proposal has enough negative climate impact information that the Planning Commission should not approve this project.

Just by energy use alone, it will use 20% of the county's electrical use. This electrical use would necessitate using the unknown completion of offshore wind power, which is required for the county to have 100% clean energy. The projects 4.8 MW rooftop solar array is only a small percentage of the facilities energy needs.

The one big item not mentioned enough is the 100,000 or more metric tons of greenhouse gases that will be emitted annually by the fish feed required. The ratio of one pound of fish food for one pound of raised salmon is necessary for the 25,000 tons of Atlantic salmon raised per year.

The fact that this proposed plant is 17 times larger than any fish plant by Nordic, says that they are not prepared for what can be expected. If approved, this facility would be the largest of its type in the country. Please keep in mind the longer term effects on climate change in Humboldt and the world. Sea level rise is the perfect example of climate change right here on Humboldt Bay. The projections of sea level rise by 2100 will have the Nordic Aquafarm as an island on the Samoa Peninsula. We do not want this as our legacy in history.

About 12.5 million gallons of treated wastewater would be discharged every day into the ocean with currents bringing suspected bacterial water into the entrance of the bay. Humboldt Bay is the nursery for our oyster industry.

There are many critical reasons not to approve this project.

Respectfully, Lee Dedini, Humboldt 350 member

**From:** [Lina C Carro](#)  
**To:** [Planning Clerk](#)  
**Cc:** [Lina Carro](#)  
**Subject:** Nordic Aquafarms California, LLC; Coastal Development Permit and Special Permit Record Number PLN-2020-16698 (filed 10-05-20) Assessor's Parcel Number (APN): 401-112-021  
**Date:** Wednesday, July 27, 2022 11:30:48 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

To the Planning Department and Humboldt County Board of Supervisors,

Please do not approve this project! The proposed project's FEIR is inadequate and deficient. I am not a science professional but I am a longtime community member and Humboldt County resident who is deeply concerned about the approval of this project so my comments will summarize and refer to what I learned from listening to a review of the FEIR.

After listening to last night's [Public Affairs program \(Tuesday, July 26 at 5:30 pm\)](#) concerning the approval of the Nordic Aquafarms' mega-project to be permitted to operate in Humboldt County, I oppose the approval of this project as it is proposed in the FEIR. I urge you to spend 20 minutes listening to the data presented by the speakers on the program at Public Affairs before moving ahead to approve this project.

The first guest on the program was Alison Wily of Riparian Solutions and a board member of the Salmonid Restoration program who explored the science, rhetoric, and risk of this project. You may refer to her earlier comment letter on the DEIR for written details at [:https://humboldt.gov/DocumentCenter/View/104347/Willy-Alison-Riparian-Solutions-21822](https://humboldt.gov/DocumentCenter/View/104347/Willy-Alison-Riparian-Solutions-21822)

The second guest on the program was Dan Chandler of 350Humboldt who pointed out what a vast carbon footprint this project would have on a global scale, outside of its more local impacts on our small community.

Here is a summary of the existing concerns I share with these speakers about the project's final EIR document:

### **1) Rhetorical Response to DEIR comments**

The document does not delve into research to respond to the public's questions and comments on the DEIR. This includes my own comment letter on the DEIR.

### **2) Risks and Biosecurity**

As the project is written, Humboldt Bay ecology would be at high risk for native salmon as well as for countless other species who make Humboldt Bay their habitat due to new and emerging viruses the research in the FEIR does not cover. Moreover, there is no offer in the project FEIR to address testing for them. These emerging viruses came largely from Norway and more recently Iceland which could be introduced to Humboldt Bay fish.

There is also a risk from the emissions of glycophytes on fish feed and that effluent flow which would be carried on the current and the incoming tide would bring them back into Humboldt Bay. The company is taking measurements only at the outflow of the pipe.)

There is no provision for biosecurity for staff working at the farm.

### **Salt Water Removal from Humboldt Bay**

The overall impacts on the health of all species from removing **ten million gallons of water every day from Humboldt Bay** are not addressed

### **Fresh Water Removal from the Mad River**

The farm's need to remove **two and a half million gallons of freshwater every day from the Mad River** troubles me deeply. On a personal level, as a resident who works hard to conserve fresh water I receive from the Mad River, this one hits home. How can we, in times of such unprecedented drought, allow precious fresh water to be used by this private, for-profit corporation?

### **3) Energy Impact and Aquafarm Carbon Footprint**

This project proposes to use the same amount of energy that our largest two cities, Eureka and Arcata, combined. The capacity needed to run the entire operation has grown to 39.5 mega watts energy infrastructure and there are no facilities to support this. When these power sources are simply not available, this means that they will have to rely on using our existing energy sources. The project will demand this level of energy 24/7 which precludes much of it actually running on renewable energy.

Ultimately, this drain on Humboldt County's energy grid will make it very difficult for our county to convert our transportation and our buildings to electricity in the future. This is a huge concern to me.

Also, the Atlantic Salmon that will be grown by the farm will be fed other small fish (via fishmeal, etc.) that could have been eaten in their original form near their country of origin. According to Dan Chandler, this tallies to about 70,000-90,000 metric tons of greenhouse gas emissions from this fish feed that are not mentioned in the FEIR. Nordic Aquafarms is sidestepping this issue by not addressing it or offering mitigation. They should be more transparent about the carbon footprint that their entire aquafarm process will have on the planet.

### **4) Integrity and stability of the company**

There was a recent and sudden parting of the ways with the company's founders. We need to hear more about what happened to cause this. How can our community place our trust in such an unstable company to protect our community's best interests? We need to hear about these details before approving the project.

Thank you for considering my comments about this project.

Sincerely,  
Lina Carro



**From:** [Mary Hurley](#)  
**To:** [Planning Clerk](#)  
**Subject:** Nordic Aquafarms Public Comment for 7-28-22 Planning Commission Permit Application  
**Date:** Wednesday, July 27, 2022 11:31:38 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

I am submitting a public comment for the above referenced matter.

I request that the final EIR not be certified and the permit denied for the following reasons:

- The project is environmentally unsustainable in that it will use huge amounts of electricity needed for transportation and buildings. Humboldt County must decrease emissions by at least 40% by 2030 to do our part in the greatest threat to us and the entire planet, continued climate change that could bring us past the tipping point and bring unlivable conditions of drought, wildfires, and sea level rise. Nordic plans to use 25% of their power from refrigerants which creates much higher levels of CO2 and warming.
- Humboldt Bay already has a local sustainable aquaculture with our oyster farms. We must prioritize our local fishing resources over fish farming. There is much scientific evidence showing what can go wrong with fish farming including antibiotic resistant bacteria from fish feed and algae growth from effluent discharge. The risks of fish escape affecting local species could be devastating.
- The ethics and politics of fish farming allow more global inequality. This product will be consumed by wealthier people/nations while we face increasing starvation on our planet now close to one billion people.

Humboldt County must prioritize protecting our natural resources including Humboldt Bay.

Thank you.

Mary Hurley  
5098 Mitchell Road, Eureka, CA 95503

**From:** [Nancy Ihara](#)  
**To:** [Planning Clerk](#)  
**Subject:** Planning Commission meeting regarding Nordic Aquafarms FEIR 7/28/22  
**Date:** Wednesday, July 27, 2022 10:02:41 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

Humboldt County Planning Commission

Re: Nordic Aquafarms FEIR, Board consideration of 7/28/22

Dear Board Members,

Initially I was in support of the Nordic Aquafarm project. It would provide jobs and the company was committed to cleaning up the former mill site. As I have learned more, however, I have become alarmed about it..

The project is enormous in size and any failures will have potentially devastating impacts on our environment.

Our coast is predicted to have a large subduction zone event in the future which will cause a wall of water to wash over the peninsula. Non-native Atlantic salmon will surely escape and enter our coastal waters and potentially wreck havoc on our native salmon and other marine life.

The amount of electricity required by the Aquafarms is massive - equivalent to that used by the cities of Eureka and Fortuna?! If the offshore wind farms are not built, where will this energy come from? It is my understanding that Nordic Aquafarms in the FEIR is committed to renewable energy.

I am always dismayed when, as with the former mill site, companies can and do abandon their property when it is no longer profitable. If that became the case with the Nordic Aquafarms have they committed to cleaning up the site?

I am not knowledgeable about the threat of viruses from farmed fish escaping into the wild but it's my understanding that it is a possibility. This would threaten our native marine life and the livelihood of our local fishermen and women.

I urge you not to support this project.

Nancy R. Ihara  
Manila, California

**From:** [Patti Stuart](#)  
**To:** [Planning Clerk](#)  
**Subject:** Hearing 7/28/2022 regarding Nordic Aquafarms  
**Date:** Wednesday, July 27, 2022 10:03:03 AM

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Caution: This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

I am writing to express my serious concerns with regard to the Nordic Aquafarms plan that comes before the planning commission today. While Humboldt County does need more employment opportunities that provide good jobs, I don't believe this project is the right one for our community.

The massive electrical usage will greatly increase our carbon footprint while also causing concerns when we need to be "islanded" due to wildfire. Also, it seems foolish to build such a massive structure on a thin slip of peninsula very much in danger of tsunami and/or earthquake. Of course Nordic Aquafarms has a plan for keeping their fish out of the waters of the bay and the ocean. But they cannot plan for the size of the next earthquake or tsunami. Because we can't afford to clean up the toxic mess left by the pulp mill, we plan to exchange it for a different type of toxic mess? The waste water that will be generated will increase the water temperature in the area where it is to be released. Aren't we attempting to prevent increased ocean temperature?

My husband and I choose to live in Humboldt County because of its educated and environmentally responsible choices in the past. This plan, if it proceeds, seems to be a step in the wrong direction.

Sincerely,  
Patti Stuart  
2298 Timothy Court  
McKinleyville 95519

Sent from my iPad

**From:** [Juliet O'Barr](#)  
**To:** [Planning Clerk](#)  
**Subject:** Nordic Aquafarms record# PLN-2020-16698  
**Date:** Thursday, July 28, 2022 9:20:51 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

To Whom It May Concern,

I would like to express my concern for the Nordic Aquafarms project's potential environmental impact. I am very concerned about the very large water use requirement that this fish farm will require, especially as we are in the midst of a historic drought. The discharge from the farm, and the associated nutrients, that will flow into the ocean will undoubtedly be harmful to our local coastal environment. Lastly, and not at all least, are the carbon emissions that this project will produce if not done properly. It is absolutely essential that any permitting requires 100% renewable energy to be used at every stage and in every facet of this venture. It is way past time that we prioritize the health of our climate over monetary gains and expedience. Please, for the sake of our collective future, take all possible measures to ensure that this project scales up slowly and appropriately so that it may be done in a way that is not negatively impactful to our environment. Thank you for your time and consideration,

Juliet O'Barr



**From:** [Mira O'Barr](#)  
**To:** [Planning Clerk](#)  
**Subject:** Nordic Aquafarms record# PLN-2020-16698  
**Date:** Thursday, July 28, 2022 10:52:58 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

To Whom It May Concern,

I would like to express my concern for the Nordic Aquafarms project's potential environmental impact. I am very concerned about the very large water use requirement that this fish farm will require, especially as we are in the midst of a historic drought. The discharge from the farm, and the associated nutrients, that will flow into the ocean will undoubtedly be harmful to our local coastal environment. Lastly, and not at all least, are the carbon emissions that this project will produce if not done properly. It is absolutely essential that any permitting requires 100% renewable energy to be used at every stage and in every facet of this venture. It is way past time that we prioritize the health of our climate over monetary gains and expedience. Please, for the sake of our collective future, take all possible measures to ensure that this project scales up slowly and appropriately so that it may be done in a way that is not negatively impactful to our environment.

Thank you for your time and consideration,  
Mira O'Barr

**From:** [Taj O'Barr](#)  
**To:** [Planning Clerk](#)  
**Subject:** PLN-2020-16698  
**Date:** Thursday, July 28, 2022 11:19:54 AM

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**Caution:** This email was sent from an EXTERNAL source. Please take care when clicking links or opening attachments.

To whom it may concern,

I wanted to express concern regarding the farm being opened in Samoa. It is critical that this facility does not negatively impact the environment here meaning it should run on renewable energy as well as greatly minimize any pollution in the environment.

Sincerely,

Taj