



Questions and answers

Nordic Aquafarms Inc
March 8th, 2019

We realize that any new developments should result in questions and sometimes concerns in a community. We have truthfully answered questions and put information out there over the past year as it has become available, while we have completed required engineering and data collection for our applications. And yet, there are people in Belfast who choose to put aside our answers, credible scientific assessments from leading environmental institutions, and a unique opportunity for sustainable economic development in Belfast. Significant misinformation is being put out there. We also understand that there may be many people who have not been able to attend our information meetings or read our newsletters. Therefore, we are distributing this Q&A to address some of the key issues where speculation continues on the local level.

Our message to the citizens of Belfast and Northport is that facts matter, and we ask that those be at the forefront of considerations regarding this project. When you look at the facts, this project has gone far in limiting environmental impact, while offering significant economic development benefits. Clean land-based aquaculture is not bad for the environment.

As we have stated before, we also have an open-door policy in our office on 159 High Street and welcome those who have questions and who are seeking more information.

Why should Nordic Aquafarms care about the environment?

Consumers, businesses and responsible policy makers increasingly care about the environment. The businesses of the future must incorporate both social responsibility and financial objectives to be truly successful in the long-term.

Our brand and future certifications are highly sensitive to our environmental stewardship practices. Businesses that do not stick to their permits, will be punished in the market and may lose their sustainability certifications – as they should. Businesses who take leadership on environmental stewardship are increasingly rewarded. That is why we are investing heavily in

environmental technologies and taking clear steps to prove that we are dedicated to protecting the environment. That is why serious environmental organizations support us.

Belfast was chosen for its clean water resources (this was not the case in many locations we considered in Maine). Our production requires clean water to produce high quality fish. We have every incentive to be an environmentalist in Belfast to ensure clean water in the future.

The premises for this project are entirely different than the old chicken days in Belfast.

Are you discharging over 7 million gallons a day?

When the facility is fully developed after a phased build-out it will discharge over 7 million gallons a day, but the implications of this are misrepresented by some in Belfast. Most of the water discharged comes from the bay, is re-circulated in the tank systems, and is rigorously treated before it is returned back to the ocean. Fresh water makes up only approx. 15 percent of this and is a small volume compared to the many other untreated sources of fresh water flowing into the bay today. Most of the discharged water is thus water we have borrowed from the bay and are returning to the bay with less particles than it had coming in. Stories that we are pumping fish waste into the bay are false.

Most importantly, the vast majority of nutrients are removed and recycled before the water is returned to the bay, as we went through in detail in our last public information meeting. We asked the Atlantic Salmon Federation, The Conservation Law Foundation and the Gulf of Maine Research Institute to do an independent peer review of our discharge application. They have all written letters of support that are available to the public stating that they do not see any material impact on the bay from our residual discharge. These are among the most credible environmental institutions in Maine with strong scientific and ecological know-how.

We have a self-interest in monitoring all discharge, in addition to any monitoring requirements put forth by the DEP. We have also stated in public that we will support monitoring programs in the bay to promote the overall health of this ecosystem. We want and need clean water and will support overall protection efforts in the bay. Our brand is built on an environmental platform, and it would be detrimental to ourselves and all if we caused harm to the bay.

The start-up RAS company in Bucksport will be discharging over double the amount of nutrients and water in the bay as Nordic Aquafarms in our first phase. In fact, Nordic Aquafarms will eventually have a lower discharge with six times the production. Their discharge would be considered a more common level in the industry. They have already received their permit. For some reason, no one seemed to have a problem with their discharge application while calling our discharge a massive and bad discharge. We can restate that Nordic Aquafarms has the highest standard in the industry with regards to waste water treatment, and the experience to execute this project. We have nothing against other projects, but the contrasts in reactions from local self-proclaimed environmentalists are striking.

How far does the discharge pipe go out?

Environmental scientists have worked to find an optimal placement based on extensive studies of the bay, currents and modelling. The final recommendation provided to us is placement of the discharge point 1 kilometer from the shoreline. This is consistent with what we communicated in our discharge application and public information meeting in October 2018.

The placement is based on optimal dispersion point at a preferable depth. We have been challenged to not put unnecessary piping in the bay unless this gives significant benefit. As there was no clear scientific benefit of extending the pipe further than 1 kilometer, this became the recommended solution. The path of the pipe has been adjusted along the way due to complicated intertidal property issues with history back to colonial times. The pipe will not be visible to anyone as it will be buried below the intertidal.

Do you have harmful pesticides or additives in the discharge?

We have stated numerous times that we do not use growth hormones, antibiotics, GMO, or pesticides in our daily production. We apply many of the same standards as with humans: we vaccinate our fish to prevent disease (by injection in each fish), protect our fish against exposure to disease, and would only consider medication in exceptional cases in consultation with Maine veterinarians. We produce a natural product and thus do not add any harmful chemicals to the production water. FDA approved cleaners and disinfectants are used to clean other parts of the facility and are not directly discharged in any material quantities. We do add a carbon source to our nitrogen reduction system that is consumed by natural nitrogen consuming bacteria. This is thus not discharged and has no impact on the environment.

Claims from certain local people that our farming is a toxic stew was discredited as misleading pseudo-science by leading scientists in Maine and elsewhere in 2018. Local claims that we have disease in our facilities were also discredited through a veterinary report available on Belfast City's homepage. We have also uncovered false references and misuse of sources in those stories. Leading academics in Maine will confirm that fish feeds available in the US market today have very low levels of any contaminants, while we unfortunately see rising levels in some wild caught fish. Fish meal would be the potential source of any contaminants, and we have repeatedly stated that the amount of fish meal used is dramatically reduced in recent years. Feed producers are now also actively removing potential contaminants from their fish meal. New sustainable ingredients such as insect meal and algae products that are rich in omega 3 and 6 are rapidly emerging in the market. We are monitoring these developments before choosing our feed in Belfast. We will produce a clean and natural product. Our products in Belfast will have full traceability for the consumer - this is the future of seafood.

It should also be noted that we do not use any medications for sea lice treatment as these cannot enter our systems.

Is RAS and your farm an experimental facility?

Waste water treatment is hardly new; the question is what any given company is willing to invest to be clean. Nordic Aquafarms has recognized the importance of clean food systems, and we have invested accordingly. Water treatment technologies throughout the facility are tried and proven technologies from global water treatment leaders such as Mitsubishi.

Land-based facilities are hardly new either. There are dozens of large facilities internationally, with the highest concentrations in Norway. Currently, new facilities are announced almost weekly internationally. As confidence in these systems have continued to grow, investor confidence and size of facilities have also grown. The new development in the past 5 years is that an increasing number of companies are taking fish to harvest size in these systems as an alternative to net pens. The technology is not experimental, but rapidly developing.

Experience is important. Nordic Aquafarms is the only land-based grow-out producer internationally with three large facilities in operation. We are the only land-based producer with 14 specialized engineers employed. Our senior staff has raised salmon for decades. All our designs are modular with independent tank systems. When we increase the size of our facilities, we are simply just adding more modules. Thus, this method is hardly new to us and the Belfast facility will be developed in phases over time by adding modules.

Here are some examples of other facilities – we are hardly alone in this industry:



Comparing us to start-ups in this segment is a strong misrepresentation. Among the companies announcing new land-based facilities we have a unique experience base and the benefit of over 50 employees. Our design team has designed facilities for Grieg Seafood, Marine Harvest and other large seafood players over the past 20 years. No other RAS player has this inhouse experience. We also draw on an extensive research base in Norway, Denmark and the US, while

channeling this into our land-based agenda. For these reasons, Nordic Aquafarms is in a unique position to finance our projects compared to other start-ups in this segment.

Can fish escape from your facility?

Our facilities are escape-proof. The Belfast facility will be a minimum 300 feet from any open water source. Multiple mechanical barriers are in place to prevent escape in pipes. To give an example, our final micro-filtration step on the discharge treatment is 0.5 micron – that is fine-masked enough to remove bacteria! Each facility must be evaluated on its own merits.

There are at most a couple of known escape episodes from smolt facilities internationally over many years. These facilities have been located right at the shoreline to allow pumping of smolt to well-boats. There are also older facilities around that may not have the same level of escape prevention



Typical example of a smolt facility where well-boats can dock to pick up smolt

measures as modern facilities. In such instances and with pumping of fish into well-boats, accidents can potentially happen, although this has been very rare in the industry. This is an entirely different situation than the proposed farm in Belfast. Generalizing that fish will escape from a land-based facility displays a lack of understanding of how this is prevented, and clearly a lack of understanding or interest in how we have addressed such risk.

Fish escape is bad PR and contrary to our environmental commitment. Thus, we have a strong incentive to design escape-proof facilities. We have no problem guaranteeing that our Belfast facility is escape-proof because it is. US authorities will verify this in permitting.

Are you clearcutting 50 acres of protected forest?

No. Our buildings will displace approx. 30 acres of forest that has been logged on a regular basis, as recently as last year by its owners. We are also replanting areas and maintaining green visual buffers. In return for this, Belfast will be producing approx. 7 percent of US consumption of salmon. In addition, we are working with the city to protect 80 acres at the upper reservoir for the community to enjoy through a donation.

Are you a concentrated feeding operation (CAFO)?

This terminology has been used by some local opponents. It is generally used to refer to large-scale livestock production where animals are raised in strict confinement. The term is not relevant for farming of salmon, as salmon is a schooling fish. Salmon thrive in greater numbers and densities and we provide them with a clean and healthy environment where they are protected from sea lice and disease. In addition, they swim in the current 24/7 to gain good

exercise. CAFO’s have also been accused of pollution and resistance to investment in environmental technologies. In our case, we capture and recycle virtually all nutrients and waste resources. We have documented that we are implementing cutting edge waste water treatment technologies beyond what exists along this coastline today. The use of CAFO in relation to our project is therefore misleading. It is impossible to feed the US population on small-scale food production alone – we are demonstrating how larger scale production can be done in a responsible manner.

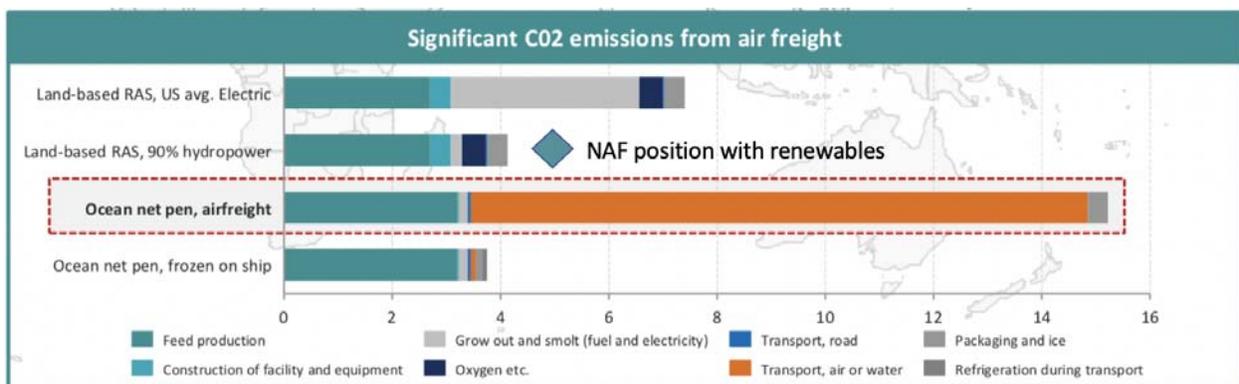
Is your facility too big for Belfast?

We are applying for permits that allow for long-term growth of this business in Belfast. The first phase of development will be less than 50% of the planned facility. The nutrient discharge in phase 1 will also be under 50% of the permit application level. There will be ample opportunity for the community to follow our development over time, while we will continue to share information regarding the development of the business.

By securing permits that allow for long-term development, we are also securing the opportunity to add jobs and development in the community for many years to come.

What about the Co2 footprint?

Currently, over 90% of fresh salmon is airfreighted into the US with a Co2 footprint three times our local Co2 footprint. We reduce our footprint further by employing renewable energy solutions. A fresh local product with much less Co2 is environmentally sensible and important in terms of creating sustainable domestic food systems in the US. The Belfast facility will displace a portion of imports with a local craft seafood product. It is therefore also taking pressure off Co2 growth that contributes to climate change.



Source: SINTEF and the Freshwater Institute, 2016

The lowest Co2 footprint would come from wild salmon fishing or local net pen production. No one sees potential for significant growth of either of these in the US in the coming decades. That leaves land-based production as the cleanest Co2 alternative to grow domestic supply.

Will the facility have any impact on wild salmon populations?

The reason the Atlantic Salmon Federation (ASF) has written a letter of support for this project is that their scientific review of our application concludes that there will be little impact from our farm and that it will contribute to taking pressure off wild salmon populations. Our biosecurity and fish escape measures are foremost in the industry. We also take the hosts for sea lice out of the ocean to prevent growth in potentially harmful parasite populations.

Some people prefer wild salmon. Wild salmon is a great product. The fact of the matter is that wild salmon populations have been under huge pressure for many years with strictly regulated fishing quotas on the West Coast. Wild Atlantic Salmon is not commercially available. With the worsening state of oceans and human activity that have impacted salmon rivers, the prospects of significant increases in wild salmon runs in the next decades is nowhere in sight. Wild salmon will never come close to fulfilling US demand and the product is not used in sushi/sashimi due to parasite risk. Wild salmon is in many ways a different product than ours with a higher price point. We support efforts to restore salmon runs, meanwhile there is a need to address a large and growing demand gap for seafood.

Could the facility lead to algae blooms?

As we demonstrated in our discharge information meeting, our waste water system removes the bulk of nutrients for recycling. And the residual discharge is going into a bay with trillions of gallons of water. It is like a drop of water in a bucket. Even though we go far beyond current industry standards by removing 85% nitrogen, we do have elevated levels of nitrogen compared to background levels. The residual discharge is, however, less than 1 percent of the nitrogen already going into the bay. And the ammonia component which would be the most harmful one, is lower than background levels in the bay. If other dischargers raised their treatment level to only 50 % of our level, we would see material reductions in nutrient discharge along the entire coastline.

The Gulf of Maine Research Institute and the Conservation Law Foundation have reviewed our application and not found cause for concern. As far as risk of algae blooms go, there are other contributing factors that pose a far greater risk than our facility. But we will remain diligent in contributing to the health of the bay as a part of our environmental stewardship strategy.

Is our groundwater at risk with Nordic Aquafarms withdrawing water?

In salmon production, smolt must be produced in freshwater (in nature they hatch and grow in rivers). In the following grow-out phase, salmon can grow in the range from freshwater to pure seawater. Our experience and other research show that there is significant benefit of including a certain freshwater component also in the grow-out phase.

We understand that the people of Belfast want to ensure healthy aquafarms for the future. As we have stated from day one – we will only withdraw sustainable levels of fresh water on our

property, also in long-term draught scenarios. Depleting aquifers would be like shooting ourselves in the foot, so we also have a strong self-interest in healthy aquifers. To quality ensure sustainable levels, we have spent several hundred thousand dollars on groundwater testing and monitoring in Belfast to fully understand the aquifers in the area. We now have extensive data and documentation from experts in Maine.

To ensure that we have no negative impact, we have concluded that we will limit any ground water withdrawal to 450 gallons/minute. Our systems have now been configured for fairly high salinity levels as ocean water will be the primary source of water in this facility. A smaller freshwater component is required for smolt production and to promote an optimal fish welfare environment for the fish.

In conclusion, the extensive data collection and also secondary assessments done by an additional environmental consultancy, conclude that our proposed withdrawal will not have negative effects on the overall health of the watershed area in Belfast. It also concludes that other local wells are safe. We will have fully transparent monitoring practices in place to give assurances to the community in the future.

Conclusion

We have approached the project in Belfast in good faith and put information out there as it becomes available. We have proceeded in Belfast based on broad support, while we understand that some are against. It is not possible to please everyone, but we have done our best to take in input. The Belfast project is our flagship project and we are strongly committed to making it a good story for Belfast and Maine. We already have eight staff in Maine, five of whom are Mainers, and are committed to investing in our people. As this project moves through permitting, we will be looking to hire and train more people in Belfast.

If you have further questions, please drop by our office on High Street in Belfast and have a talk with our staff. We have an open-door policy and welcome visitors who have questions. We also welcome constructive local input as local knowledge is a key ingredient in developing a project like this.

Our final applications are now complete, and a public information meeting will take place on March 26th. This will be announced shortly.

Kind regards,

Erik Heim
President
Nordic Aquafarms Inc