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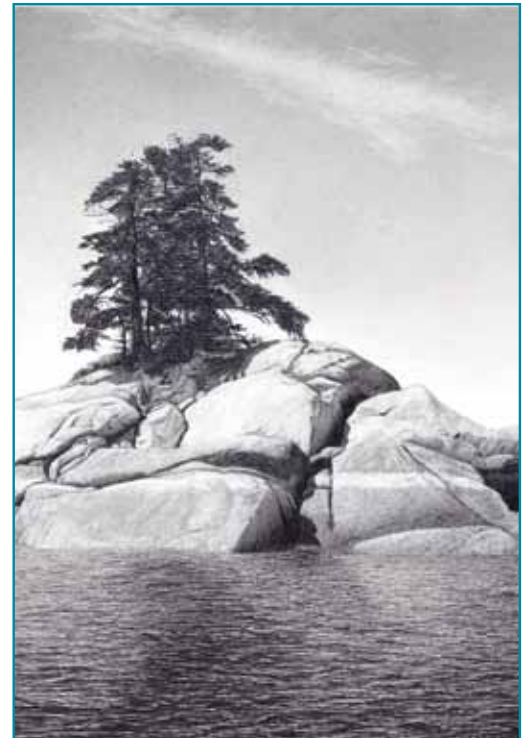
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Aquaculture Club

Countries eye Maine as the prime location for ocean farming.

BY COLIN S. SARGENT • ILLUSTRATIONS BY ED KING

FROM ARTISANAL small-batch farmers to the largest indoor aquaculture facilities in the world, Maine is emerging as a hotspot for locally-and-globally conceived fish-farming projects. **Nordic Aquafarms**, headquartered in Fredrikstad, Norway, already has two projects in Denmark beyond their flagship local plant. In Maine, Nordic plans to build a \$450M, 33,000-ton solar-powered indoor salmon farm that will be one of the largest in the world. The salmon will be raised in massive indoor tanks in the planned 40-acre facility carefully filtered by cutting-edge equipment. Why go to all this trouble? It's all about trying to stay one step ahead of parasites—in fact, a Norwegian marine science lab has even created a laser-armed drone that zaps sea lice at short range, chemical free. We caught up with **Erik Heim**, CEO of Nordic Aquafarms, at his rocky-coast site just across the border from Sweden to

get an answer for why these big, new indoor fish-farming concepts are attracting big investments to Maine coastal sites from Belfast to Bucksport.

PROOF IS IN THE WATER

"We started with a scientific approach, working hand in hand with an engineering firm from Norfolk [Virginia]," Heim says. "We looked at elevation, water quality, and other environmental factors. Maine's

established brand in quality seafood was also a great fit for us. It's difficult to find both clean, fresh water and access to seawater, in a place where it's nice for people working there to live, where you have services and so on. Belfast clearly stood out as the best place to pursue. It turns out, there was a property located ideally that had both freshwater and seawater access.

"In regard to challenges that we've faced, we know aquaculture has been controversial in the U.S. We're not involved in sea-pen farming, which has been the major source of objections. The land-based systems can neither be invaded by nor contribute to the host populations for sea lice. We have full control of everything that comes in and out of the facility." Sophisticated recirculation systems conserve water and allow for careful monitoring of the inflow to the fish. "We invest in environmental technologies that preserve as many of



DISCOVERY

the nutrients as possible.

"I think there's a lot of innovation going on in many areas. In Norway, there's a major investment push to go further out of sea. You're seeing new projects showcasing both offshore and land-based innovations. It's an exciting period. [There are] new types of feed ingredients. Land-based is not the only answer, but it's part of the answer, and it makes it possible to

do farming in places where it hadn't been considered before. In Norway, you see, we're subject to very strict regulations to what we can discharge, so that is how we are used to doing business.

"Aquaculture is a major growth industry. The academic institutions in Maine are very interested in expanding the scope of their programs. We're going to be doing our part to contribute to that, and

so we're very excited to see how it develops. That's going to create great opportunities for Mainers both here and abroad. I'm moving to Maine in three months, so I see this investment as a partnership between Maine and Norway. I can say already that we've been working with the resource institution down by the harbor, and opened up connections between them and various educational programs in Norway. We hope to pro-

vide support and exchange programs as a part of our strategy."

A NEW VISION

Robert Piasio, CEO of Whole Oceans, concurs when announcing the purchase of the former Verso paper mill in Bucksport, and also placed Whole Oceans' \$250M project within the context of Maine's economic history. "This story is also about the resiliency and determination of towns throughout Maine that make projects like this possible," he says. "Whole Oceans is entering a long-term partnership with the community of Bucksport, a responsibility we accept with the greatest care, and together we will strive to make Whole Oceans a source of pride every single day."

A MAINE VOICE

Leslie Harrow at Sullivan Harbor Farm offers an artisanal perspective on these new products. "The science of land-based aquaculture has become a significant way to grow large quantities of fish. I went to one



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of the meetings down in Bucksport for the Whole Oceans proposal. My view of it, after it all was said and done, was that they could have gone anywhere else in the world in the United States, but because of the proximity to the fresh water and tidal water, they chose Bucksport, and also because a lot of discharge permits were already given to the paper companies there. For my business, one of the advantages of land-based salmon is that because it's a science-based methodology, there is a reduced risk of microbiological contaminants, [whereas in] aquaculture that's raised out in the sea, like in Norway, Scotland, or wherever, depending on the stocking density of the pens, the fish run a much higher risk for sea lice, for listeria, or other microbiological challenges.

"I've tasted land-based fish, and it's just not the same taste as a salmon that's raised actually in the sea," says Harrow. "There is a difference. When we're shopping around for fish, one of the things that we inquire about is the feed, [along with] what the stocking density is, and what the mortality rate is.



"On another level, the reality of these land-based fish is that they're not going to process it here in Maine. If they're going to make it here in Maine, they should fillet it here and sell some of it here in Maine as a land-based product. We have enough advantages in Maine to attract these businesses, so we should make sure the state is aggressive to make sure these jobs are beneficial to Mainers and the New England market. Especially if we're going to give them tax breaks, we should make sure the person who has to pull the guts out of the fish gets a share with a chance

to help process here in Maine. Their fish is sent to an out-of-state processing facility where it's then filleted and then packed. Why can't we do more of the processing here, if we're going to make a national product? At least for us, though, for a quality, Maine value-added product, land-based is not there yet for us at Sullivan Harbor Farm."

Given the ever-increasing market in the U.S. for salmon (over 500,000 tons annually and growing), it looks like there's room for all of the possible production that can happen. ■

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