

Stagnant US land-based salmon farming sector is ripe for a 'reset', says RAS pioneer

A shake-up of the US land-based salmon farming sector is desperately needed, suggests Erik Heim

By [Liza Mayer](#) | Feb. 6, 2023 18:56 GMT

Despite all of its promise, when it comes to land-based finifish aquaculture in the United States isn't quite there yet at scale.

That's the view at least of Erik Heim, co-founder of Maine-based private development and investment company Xcelerate Aqua.

"We haven't really seen a lot of capacity added or great progress but a lot of proposals and ambition," he told *Undercurrent News*.

The buzz around the nascent land-based salmon farming sector in the United States has begun to fade. Many projects have either failed to materialize or are facing operational difficulties. While a few existing recirculating aquaculture systems (RAS) facilities have shown that they can produce quality products, they have yet to deliver biomass targets on schedule and, by extension, profitability to investors.

Additionally, news of the operational issues that have been hindering Homestead, Florida-based salmon grower Atlantic Sapphire over the past two years has raised questions about RAS' viability. The overall stock market decline since the beginning of 2022 has also impacted investor interest.

"If you look at the major proposals or activities today, they are largely stuck in various ways. There's no one answer as to why. And quite frankly, that goes for any major proposals in ocean aquaculture or on land in the US," said Heim, who founded Norway's first large-scale land-based salmon farm, Fredrikstad Seafoods, and Nordic Aquafarms.

Heim highlighted the importance of salmon farming in the US, emphasizing that both small and large operations are needed to fulfill future domestic demand.

"There are good operations – Superior Fresh is one, Hudson Valley Steelhead is another – but they're small volumes. They are doing a decent job, in my opinion. And we need more of those. But we also need to find a balance of this portfolio in the US to develop this industry."

He believes that a facility does not have to be the largest in the world to be competitive; instead, finding the right size and avoiding catastrophic fish losses are crucial to success.

"You don't have to go super large scale to be successful. Other things influence your profitability. Very large scale is complicated and involves risk regarding organization design, logistics, financial exposure, etc. When you get things wrong, you pay a high price. We've seen examples of this. You're punished big time," he said.

Treading water

From early 2018 until mid 2022, Heim was based in Maine and responsible for setting up land-based salmon farms there and in California as the CEO of the US subsidiary of Nordic Aquafarms.

He observed that major projects in the US are currently stalled, but he believes that the problem in the US is not with the RAS technology itself, but with how it has been designed, implemented, and operated.

"It is not a question of whether RAS works or not. In reality, what you see in the US has nothing to do with the technical aspects of RAS; rather, they are project-development-related issues such as the site chosen, where there are conflicts, for instance. Additionally, there is a chance that mistakes have been made due to the haste of creating a large-scale operation."

These are essential factors that need to be considered and managed to avoid risks in the future, he said. The bottom line is that RAS is a maturing technology that requires respect and careful planning to succeed, he noted.

Salmon Evolution and Andfjord Salmon, both in Norway, use a hybrid flow-through system instead of RAS, and both companies have reported excellent results from day one. As *Undercurrent News* reported, [Salmon Evolution is looking at Washington State](#) as a possible site for its North American operation.

But Heim said flow-through operations in the US would have their own set of challenges.

"It is important for the industry to continue innovation and exploration of different approaches, but it is also crucial to consider regulation and assess the challenges that come with each approach," he said.



📷 Erik Heim founded Norway's first large-scale land-based salmon farm, Fredrikstad Seafoods, and Nordic Aquafarms

Managing risk in America

One of the biggest lessons learned in the past five years in the US land-based salmon sector is the realization that the socio-economic landscape in the US is complex, said Heim, who is now dedicated to aquaculture development in the US through Xcelerate Aqua and its subsidiaries.

"It's important to understand the socio-economic landscape in the US and how complex it is. It's easy to underestimate that. For example, importing something into the US that's worked elsewhere may not work here."

Heim also said that the idea that the US is an untouched frontier for aquaculture development, "where everything is possible and big is easy", is no longer accurate.

He observed that the US coastline is now a complex network of competing interests, and navigating this landscape with many vested interests to balance is difficult.

When asked whether Americans are particularly enthusiastic about green and sustainable operations, thus causing social licensing to be a significant obstacle for these types of projects compared to other countries, Heim said social license is undoubtedly a vital part of the process in the US for an industry going into the community.

"But really, what is a social license?" he asked. "I think any aquaculture anywhere in the US will find somebody who is anti-animal production. So does that mean you don't have a social license if you're in a community where 90% support your efforts and a small group is against it? Does that mean you do not have a social license?"

That said, social license is an integral part of the process in the US, and community engagement and stakeholder work are critical for any business, especially in the case of new industries like aquaculture, he said.

Attracting US money

Another lesson is the need to create investment stories with a manageable level of risk that's attractive to investors.

He said that the big proposals in the US usually come from Europe and that the US investment market has yet to be heavily involved in this. He points out that the industry is still tiny in the US, making it understandable why US investors are focusing on other, bigger things. He also emphasized that it would take a lot of hard work to get US capital involved and grow the industry.

He said that the ability to attract capital depends on the specific proposal and how investors perceive the risk. For example, if the proposal is perceived as lower risk and has a compelling risk-mitigation plan, it may still be able to secure funding. But ultimately, it comes down to the perceived risk of the proposal and how well the risk story is packaged and communicated to potential investors.

Are RAS ventures high-risk?

It depends, said Heim.

"If I were proposing to build a 100,000-metric-ton farm, that would certainly be considered high risk. However, if I proposed something much smaller, the risk would be lower. There are already many farms of that size in operation. Overall, I wouldn't

label it as high risk, as the entire ocean aquaculture industry already uses RAS to produce smolts and post-smolts. It's important to look at the specific proposal and assess the risk, rather than generalizing."

He regrets that Atlantic Sapphire is always in the spotlight because one company's performance, he said, is not necessarily representative of the industry. Investors should look at the broader sector rather than just one company, he added.

He observed that current investment interests lie in ancillary services or technology enabling fish production rather than in fish production itself because investors feel that they can scale on technology investments.

"But the problem with that is that in the US, the backbone of the industry is fish production. So what's going to be key for developing a US industry is that investors gain comfort in terms of stepping into both enabling technology investments but also production. That's still maturing process," he said.

Managing expectations

Heim believes it is crucial to be conservative and not over-promise or exaggerate when it comes to investment proposals. He also emphasized that it is essential to do due diligence and de-risk before announcing anything and to make sure that the risks are managed and that the team has enough experience to succeed in operations.

"Because there's a high price to pay if you fail," he said. "And it is even worth setting lower targets in the beginning to make sure that you can deliver on what you're proposing, and then you can

start scaling it. Then you have a learning curve to work on. You've built experience. But it would help if you had a team with the experience to succeed in operations. And there's not that many people in the US who have a lot of experience with this, and that's part of the challenge here."

What now?

The fact that the US lags behind other countries in this sector and the current projects are not generating the expected outcomes highlight the need for a reset, suggests Heim.

Leveraging the learning that has happened over the last five years is essential to ensure that future projects are successful and that the land-based sector and the industry at large can continue to mature and expand. But he said it might take another four to five years to apply this learning.

"We must remember that these facilities' development cycle could easily be four to five years. In other words, these facilities that have been delivering in the last couple years were designed about five years ago. So leveraging that learning could take another cycle of 4-5 years."

He added: "We must understand that results will not be instantaneous and that it is a process of learning and development that takes time. So, how will you navigate these things or reposition things so you can learn from the risks, the mistakes made, and the successes made? That's what we need to embrace now as we look forward."