

# BC Salmon Farming Innovation Today

## OVERVIEW

On February 6, 2024, a selection of salmon farming technology suppliers joined the Canadian Aquaculture Industry Alliance in Ottawa to speak about current and emerging technologies for the modern farm-raised salmon sector in British Columbia.

## MEET THE SUPPLIERS

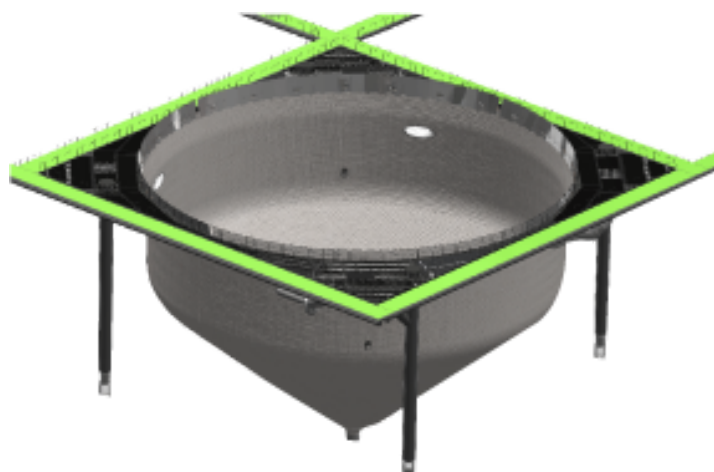
### Monitoring Ocean System Health



The sampling of environmental DNA (eDNA) is proving a game changer for ocean industries, including aquaculture. It allows affordable and accurate monitoring of the interactions between farmed and wild salmon and ecosystem health to inform decision-makers. All organisms shed into the environment traces of their DNA, which serve as reliable identifiers of species. The eDNA in one water sample can reveal a large quantity of data about the variety and number of organisms present, including even the smallest microbes. eDNATEC is a Newfoundland-based company on the forefront of the rapidly growing eDNA technology field.



### BC-Based Innovation Leadership



Poseidon Ocean Systems is an award-winning cleantech product development company based in BC. Poseidon delivers innovative, industry-leading solutions for modern salmon farming operations, that include bubble systems, energy-efficient technology solutions and are developing a semi-closed marine farm system to reduce interactions between wild and farmed populations. They are focused on improving fish welfare while reducing the environmental impact of producing nutritious, sustainable protein .

### Precision Data Management



Innovasea's precision aquaculture sensors enable aquaculture operators to closely monitor, manage and control their operations - pen-by-pen and across sites based on reliable real-time data. Acoustic sensors inside the salmon farming cages monitor oxygen, salinity, turbidity, chlorophyll other critical parameters to monitoring the environment and health of the fish inside of a salmon enclosure- and access is wireless without any electrical cables needed. Operators are able to monitor the sites on hand-held devices and respond quickly to any challenges.



With a **stable** and **supportive** regulatory framework, the sector will increase investment in innovation and continuously improve environmental performance

## Feed Efficiency & Waste Reduction



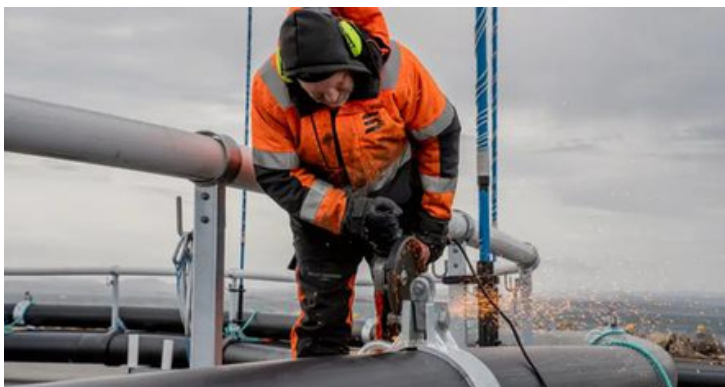
AKVA Observe is an intelligent fish feeding assistant. A complete Artificial Intelligence (AI) software solution analyzes the fish's activity pattern, detects feed pellets and feeding efficiency through real-time video streams from cages and combines this with other data. This creates precision insight into the feeding situation and helps maximize efficiency and reduce feed loss and waste.



## Net Pen Technology



Scale AQ offers multiple solutions that enhance fish welfare and health, optimize biological performance, promote sustainability and ensure safety, including predator-proof pens, semi-closed and closed marine pens, and submersible net pens. Submersible net pens avoid the top layer of water where sea lice (pests) live and can result in significant improved health for farmed salmon and reduced interactions with wild salmon.



## Laser Treatment of Pests



The Stingray laser system safely kills sea lice, a naturally occurring salmon pest, with lasers while also monitoring health of farmed fish 24/7. 2.2 Billion lasers beams have been recorded with no harm to fish. 60-80% of sea lice are reduced in net pens, with the goal to reduce the number of sea lice in the net pen to lower than outside the net pen. A laser pulse strikes parasites that dwell on the skin of fish while the fish swim undisturbed in the pen. The fish skin reflects the laser beam, thereby providing a very gentle lice treatment for the fish.



## What We Learned

- Canada has the potential to lead the development of new technologies if the regulatory framework supports investment.
- BC producers have always been early adopters of innovation and new technology.
- Canada's major economic opportunity is sustainable ocean-based farming.
- With clear goals and a stable regulatory framework, BC salmon producers can adopt new technologies that will continuously improve environmental performance while growing jobs and healthy communities.



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