



Coastal Alliance for Aquaculture Reform

Briefing Notes

New Aquaculture Technology: Closing in on Solutions

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Issue:

The Coastal Alliance for Aquaculture Reform (CAAR), a coalition of environmental organizations, First Nations, scientists and fishermen working to promote safe and sustainable salmon farming, is calling on the provincial and federal governments to support the development of two commercial-scale closed containment demonstration projects. These demonstration projects are necessary in order to conduct a thorough cost/benefit analysis of closed containment technology and demonstrate its commercial and environmental viability.

Background:

There is a growing body of scientific evidence showing that sea lice from net cage salmon farms kill young wild salmon as they migrate to sea, resulting in significant declines of wild salmon in some streams (for example, in 2002, we discovered that a shocking 99% of pink salmon failed to return to eight spawning streams in the Broughton Archipelago - a loss of nearly 3 million fish). Indeed, sea lice are a problem wherever open net cage salmon farms exist in the world.

Other impacts from salmon farms include risk of disease transfer to wild fish; escapes of farmed salmon into the wild with attendant competition for wild salmon habitat; the spread of waste to the seabed and marine environment; and the depletion of global fish stocks for feed.

There are approximately 82 active farms in British Columbia at present. The government and salmon farming industry would like to add 100 – 150 more farms over the next 10 years, dramatically increasing the pressure on wild salmon and the marine environment.

In addition to the environmental impacts from net cage salmon farming, problems such as fish diseases (including Infectious Hematopoetic Necrosis) and plankton

blooms are causing periodic massive losses in the production of farmed salmon, resulting in unstable employment and financial hardships for many salmon aquaculture companies operating in BC.

Benefits:

Closed contained tank systems with non-permeable barriers can be used to prevent the transmission of disease, parasites, waste and fish escapes from the farm to the marine environment. This protects the marine environment from the salmon farming operation and provides economic benefits because the farmed fish are protected from external diseases and parasites.

There are three companies in BC and Washington State offering closed containment technologies that allow salmon to be farmed in tanks or bag systems:

Agrimarine Industries Inc.

This BC company is based in Campbell River. Agrimarine has been growing fish commercially in land-based concrete tanks since 2001 at a research farm near Cedar just south of Nanaimo. The company is working to secure funding for a commercial operation within the District of Campbell River that will include floating cement tanks, waste removal and waste treatment.

Mariculture Systems

This company is based in Washington State. Mariculture Systems has developed an in-water floating container system called SARGO, which consists of a hard shell made of polypropylene and fiberglass. This company has successfully tested one pilot system in Washington State that showed many promising environmental and economic improvements over an adjacent open net cage fish farm. Mariculture Systems is attempting to secure funding with Yellow Island Aquaculture to develop a system off Quadra Island.

Future SEA Technologies Inc.

This company is based in Nanaimo, BC. Future SEA Technologies produces heavy gage plastic bags that hold fish and are impermeable to water. A study conducted by DFO in 1997 at the Pacific Biological Station in Nanaimo found that the Future SEA bags had up to 10 times less sea lice as compared to an adjacent open net farm.

Solution:

BC has the potential to become a world leader in closed containment salmon farming technology, which will provide a truly sustainable industry. Fortunately, state of the art technologies for enclosed fish farms have been developed in BC and Washington State that provide a barrier between farmed fish and the marine environment.

The previous BC government introduced a limited pilot project program in 2000 for encouraging new technology. However, the program has had very limited success because it has several serious flaws. For example, the government didn't

provide funding to companies testing new technologies; it didn't allow closed containment systems to be tested in a variety of habitat types; and the government made the mistake of awarding "paired" net-pens as an incentive for companies to participate in the program.

Getting to closed containment will require a concerted effort that includes:

- Freezing of provincial and federal funds currently supporting the net cage salmon farming industry;
- Funding for at least two commercial-scale closed containment salmon farms to demonstrate the viability of this technology;
- Facilitating access to data so independent economists can conduct meaningful financial and economic analyses;
- Freezing open net cage tenures and production at their current levels;
- Partnerships with industry, First Nations and the conservation community to ensure an economically viable and ecologically sound transition of all salmon farms to safe, closed containment systems;
- 5-year time line for transition to closed contained fish farms (regulations must be passed to make this transition mandatory by 2010).
- Investing in research that develops alternative feed sources.