

Aquaculture: it's not just fish any more

INNOVATION: IMTA now being employed at eight aquaculture sites

Barb Rayner

BACK BAY

It's got a long name, a short acronym, and it's becoming a key part of the aquaculture industry in the Bay of Fundy.

Integrated Multi-Trophic Aquaculture (IMTA) - the practice of growing several species on a single aquaculture site - is now being carried out at eight different sites in the area.

Dr. Thierry Chopin, UNBSJ biology professor and scientific director of the Natural Sciences and Engineering Research Council of Canada's Multi-Trophic Aquaculture Network, explained more about the practice during a media tour Wednesday organized by the Atlantic Canada Fish Farmers' Association.



Dr. Thierry Chopin.

The tour took media members to an IMTA site in Charlie Cove, Back Bay.

Currently in New Brunswick, IMTA incorporates the growing of mussels and seaweed (kelp) near salmon sites, which recreates a food chain and mimics natural ecosystems.

This is a natural recycling system where the mussels filter organic waste particles from the salmon and the seaweed absorb dissolved inorganic nutrients. The mussels are grown about 50 metres from the salmon cages with the seaweed about 100 metres away.

"What is waste from the salmon is nutrients for the mussels and the seaweed. As a matter of fact, the mussels and seaweed grow faster next to salmon cages," said Chopin.

He said the system is being built gradu-



File photo courtesy of Cooke Aquaculture

A Cooke Aquaculture employee displays a string of mussels grown near an existing salmon farm: the mussels thrive on the waste products created by the salmon farm, and in so doing, improve the water quality of the immediate area.

ally, but noted it is working well so far. The market for the mussels is good, said Chopin, but it is a little more complicated to find markets for the kelp - although three local restaurants are using it.

"The meat yield is very good in the mussels. We are still only producing a small volume, but Cooke Aquaculture has sold them in Maine, Quebec and California."

Industry professionals are also working with a cosmetic company in Monaco to develop a market for the use of the kelp in

cosmetics, he said, and are using it in salmon feed to replace some of the fishmeal as it is full of protein and vitamins.

"We started with Cooke Aquaculture last year putting seaweed in salmon feed. Since last October, we have been putting some seaweed in the feed and taking out some fish meal."

Chopin said they would also like to employ IMTA to grow other species which could feed on the nutrients from the salmon such as sea urchins, sea scallops, sea cu-

cumbers and blood worms. Sea cucumbers fetch a high price in Asia where they are a delicacy, he said, and blood worms are used for bait.

"That will be quite a challenge as we need to know how to grow them together. We want to do that but we have to develop the infrastructure and the engineering.

That, he said is going to be "quite a challenge."

"It is question of biology, economics and developing markets."

New Brunswick salmon farmers have been involved for 15 years in studies that have shown that mussels and seaweed grow better near salmon farms than other environments.

Similar research is being carried out in other jurisdictions including the West Coast and involves a variety of species such as oysters and scallops.

With eight sites currently employing the practice, which started in 2001 in the Bay of Fundy, Chopin said it is building up and they hope to be at 16 within the next couple of years.

"You have to convince the industry that it is the right way to go. It is gradually progressing and we are working with Cooke Aquaculture but other companies are interested so it is going to come."

IMTA is not only responsible, innovative and green but it also has economic benefits for farmers by giving them multiple products to markets.

Fourteen of the 96 aquaculture sites in the Bay of Fundy are now licensed for IMTA. Experts anticipate that if multi-species aquaculture is adopted on 40 per cent of New Brunswick's salmon sites, the economic benefit could be \$40 million in annual revenues and 200 new jobs.

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Innovative new salmon cages now being used

Barb Rayner

BACK BAY

A new type of marine aquaculture net pen - known as the iCage - is now being used by Admiral Fish Farms.

During a media tour Wednesday organized by the Atlantic Canada Fish Farmers' Association, Evan Kearney, the company's director of sustainable development talked about the iCage during a visit to the T and J Farm in Back Bay.

The unusual looking cages, which are designed by Saint John-based Open Ocean Systems, are barrel shaped with a fixed volume containment system which has the ability to rotate and submerge.

The system reduces the amount of anti-foulant used because the cages can be rotated and sit only partially above the water allowing the nets to dry frequently. Nets removed from the water



Barb Rayner/Courier

Admiral Fish Farms of Grand Manan is using an innovative marine aquaculture net pen known as an iCage at one of its sites in Back Bay.

occasionally remain cleaner than those constantly submerged, and that in turn significantly reduces labour and operating costs as the nets don't have to be changed.

Kearney said the iCage can be completely submerged if needed, noting this was done for 96 hours in preparation for Hurricane Earl. The iCage is suitable for use in both near shore traditional net

farm sites and, eventually, could be used in more unsheltered, open ocean waters.

At salt water farms in the winter, much less ice builds up on the nets for the crews to remove and in freshwater lakes, the nets can be submerged below ice sheets that form.

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Research aims to find cause of declining populations

Continued from front

The retained fish will be used to learn more about fish behaviour and physiology, while the tagged fish will be tracked to see how many return into the river system.

The project allows researchers to compare the performance of fish reared in a freshwater hatchery as part of Fundy National Park's live gene bank with those raised in the sea cages during the same life stages - smolt to adult.

The outdoor sea cage rearing environment better resembles the salmon's natural environment during this life stage than an indoor freshwater hatchery.

"They release some from the hatchery and some from the sea cages.

"Will this sea exposure help them to be ready in the salt water environment? Since those that

have been in the hatchery have been in an artificial environment so long, is that part of the reason why they don't return?"

The project will provide valuable insight into the marine life stage of wild salmon and is poised to yield unprecedented numbers of mature adult inner Bay of Fundy salmon for release to their host rivers to spawn.

Many salmon farming industry collaborators have been involved in this project and have contributed their expertise, equipment, feed and labour.

The Atlantic salmon farming industry has actively supported projects aimed at restoring the diminishing wild salmon stocks for many years by providing hatchery and fish health expertise, funding assistance and research support. This project is only one example of a conservation/rehabilitation project currently underway.