We're farming for the future

Farming the ocean dates back as far as the Ancient Egyptians and the Aztecs, but we're farming for the future.

Now more than ever, with the world's growing population, fresh water conservation issues and arable land constraints, aquaculture is making a vital contribution to global food needs.

Atlantic Canadian salmon farmers are your friends and neighbours. And they are bringing economic prosperity and year-round jobs to our coastal communities while producing one of the healthiest foods in the world.

ATLANTIC CANADA FARMED SALMON: GOOD FOR YOU. GOOD FOR YOUR COMMUNITY.

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PROUD HISTORY. BRIGHT FUTURE.

Atlantic Canadians are proud of their centuries-old traditions of working on the water and farming the land.

Aquaculture is a 'not-so-new' twist on these traditions that takes farming to a familiar setting we know and love - the ocean.

While aquaculture dates back to ancient times, modern salmon farming didn't get its start in Canada until about 40 years ago.

We are proud to say that Atlantic Canada helped pioneer the global salmon farming industry, and we continue to be recognized as an innovative international leader today.

From highly-skilled engineers, veterinarians and researchers to marine biologists, scientists and farmers, the men and women who work in the salmon farming industry are world-class experts in their fields.

Like all farmers, they are incredibly enthusiastic about what they do. They work hard. They take pride in their work. They are innovators and problem solvers who love to learn and collaborate. They are passionate stewards of the environment who have shared working waterfronts with traditional fishers, tourism operators and others since the industry began.

Such world-class expertise and industry collaboration are critical assets in a diversified economy such as ours and in a sector that has a proud history and an even brighter future.

OVER **300** MILLION MEALS of farmed salmon are locally grown every year in Atlantic Canada.

THAT CREATES OVER **3,000** DIRECT JOBS right here at home.

AND CONTRIBUTES **$350** MILLION directly to our economy.

Bringing prosperity to Atlantic Canada.

Farmed salmon is the biggest agriculture-based export in Atlantic Canada and our industry is one of this region's biggest economic drivers.

Our industry can create even more jobs at home, generate investment and renew the tax base in rural communities. We are continuing to build an industry that will keep our young people at home by offering them challenging, full-time work in their own communities.

Individuals under the age of 40 hold over 50 per cent of the salmon farming jobs. This employment stability means that fewer young people must leave our region in search of work.

Atlantic Canadian fish farms – locally owned and operated – produce 40 per cent of Canada's farmed salmon. More than 75 per cent of our region's farmed salmon is exported to the United States.

Our industry has revitalized many of our coastal communities by creating direct and indirect jobs, supporting small businesses and stimulating ongoing research and innovation. The success of salmon farming has created jobs throughout the region in feed manufacturing, packaging, transportation, supply and service sectors as well as spin-off jobs in other sectors including retail and tourism.

Aquaculture is one solution to meeting the growing global demand for seafood.

World population is outstripping food production. By 2030, the world's population is predicted to increase by another two billion.

The amount of food that will be consumed in the world in the next 50 years will exceed ALL the food eaten in human history to date. The United Nations Food and Agriculture Organization forecasts a global seafood shortage of 50-80 million tonnes by 2030.

One answer is aquaculture.

More than half of all seafood consumed already originates from aquaculture. In fact, even some of the 'wild' salmon we eat are raised in hatcheries before being released into the wild for re-capture.

Farmed Atlantic salmon can help meet the growing global seafood demand, taking the pressure off wild stocks. Atlantic Canada's natural abundant ocean environment makes it the perfect place to farm fish, especially Atlantic salmon. We've already built a tremendous sector, but the potential exists for salmon farming to ignite our region's economy even more.

Dr. Duane Barker
New Brunswick Innovation Research Chair in Aquatic Biosciences

"The growth of the aquaculture industry in Atlantic Canada is truly inspirational. It has given hope and confidence to rural coastal communities in the face of an uncertain economic future.

We should be proud of what we do and the high quality products we produce."

Get the facts!

FARMERS KEEP STOCKING DENSITIES LOW.

Salmon occupy less than four per cent of the space in their net pens. This helps protect the health and welfare of the fish, leading to a healthier environment and a higher quality product.

NO ARTIFICIAL DYES OR GROWTH HORMONES ARE USED. EVER.

ATLANTIC SALMON ARE NOT GENETICALLY MODIFIED IN ANY WAY.

SALMON FARMERS USE LESS ANTIBIOTICS THAN ANY OTHER LIVESTOCK FARMERS.

Strictly regulated withdrawal periods – far longer than any other agriculture sector – follow the use of any medication. All antibiotics are prescribed by veterinarians.

IT TAKES ABOUT 1KG OF FEED TO PRODUCE 1KG OF FARMED SALMON – COMPARED TO BEEF AT 10:1 OR CHICKEN AT 2:1.

ATLANTIC SALMON PRODUCTS CAN BE TRACED BACK TO THE ORIGINAL FARM AND HATCHERY WHERE THE FISH WERE RAISED.

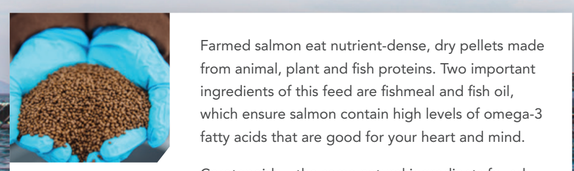
Farmers keep records of what the fish ate and all aspects of their care.

We take care of our ocean.

Farmers know that pristine seawater is essential for the production of healthy, high-quality salmon. Everything we do on a salmon farm is intended to help grow stress-free, healthy fish. Caring for our fish means caring for the ocean and the environment and for our future.

Each farm's location is carefully chosen in areas with the right temperature, water depth and currents. Farmers follow strict codes of practice to ensure their fish are healthy, properly contained in their pens and waste is managed responsibly.

- Just like farms on land, salmon farms are fallowed regularly and the environment under and around their farms is regularly monitored.
- Salmon farmers use underwater cameras and sensors to monitor feed delivery to avoid overfeeding.
- Farmers have tailored feed to suit the dietary needs of salmon at each life stage and improve feed digestibility and significantly reduce waste.
- Divers inspect the fish, the cage systems and the ocean floor on a weekly basis.



WHAT DO FARMED SALMON EAT?

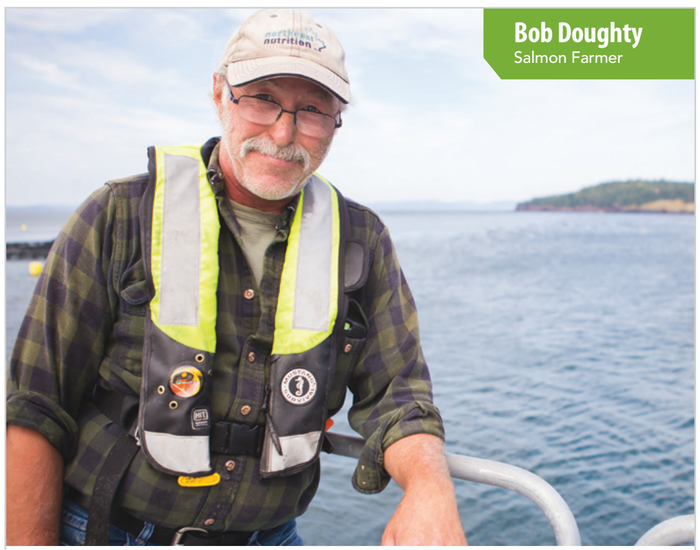
Farmed salmon eat nutrient-dense, dry pellets made from animal, plant and fish proteins. Two important ingredients of this feed are fishmeal and fish oil, which ensure salmon contain high levels of omega-3 fatty acids that are good for your heart and mind.

Carotenoids – the same natural ingredients found in carrots and egg yolks – are added to their diet to provide salmon with antioxidants, vitamin A and to give them their pink colour.

All fish feed ingredients are approved by the Canada Food Inspection Agency.

Dr. Amber Garber
Scientific Director at the Huntsman Marine Science Centre

"The Atlantic Canadian aquaculture industry is a seamless integration of expertise and continuous innovation that produces a premium product for our dinner tables."



Bob Doughty
Salmon Farmer

"I take pride in what I do and in the knowledge that I am helping to grow healthy fish that will be part of a family's dinner."

Clarence Blanchard
Net Manufacturer

"Without aquaculture, I don't know what I would be doing. It opened up a door and an opportunity for me. It's allowed me to build a business in my community, an area that needed employment."

We just keep getting better.

Our farmers are innovative global pioneers who work with the best researchers in the federal and provincial governments, at universities and in the private sector on a wide variety of projects aimed at improving farming technology.

Atlantic salmon farmers continue to invest millions of dollars into the research and development of alternative 'green' sea lice technologies that include warm water baths, lice-eating cleaner fish and broodstock development. Quantifying salmon feed waste, feed trials to test alternate feed ingredients and sediment profile imagery are just a few of the many research projects occurring.

Dr. Amy Canam
Veterinarian

"As a veterinarian, I know that salmon farming is all about raising healthy fish, and it's great to be part of an industry here in Atlantic Canada where the site managers and the crews caring for the fish every day feel the same way. We all take great pride in the work we do and the fish we grow."

Land based salmon farming continues to evolve.

Our salmon farmers are experts in closed containment because our fish spend half their lives in land-based hatcheries where these recirculation systems are used.

We know that closed systems may work on some species for their entire life cycle. But right now it's not economically viable, environmentally friendly or in the best interests of fish welfare to grow Atlantic salmon to market size in these systems at a commercial scale. Some small scale land based farms are producing fully-grown salmon for niche markets, but the largest of these produces only 300MT per year. By comparison, Canada produces approximately 110,000MT of farmed salmon per year in ocean farms.

A number of challenges must be overcome, including water and land usage, real costs of energy and considerations around animal welfare, not to mention the quality and acceptance of the product (and its inevitably high retail price) by the consumer.

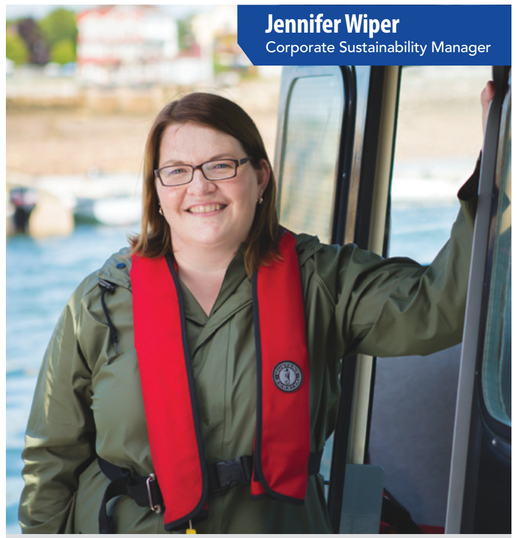
Our industry continues to invest in technological improvements to land based salmon farming systems, recognizing that it is a proven technology and that it has a valuable role to play in the freshwater part of the life cycle of the salmon. However, the evidence provided to date strongly recommends that, at this time, land-based fish farming systems are best suited to the early grow-out phase of Atlantic salmon and are not the best alternative for the commercial production of entire grow-out of the species to meet the global food demands.

World-class salmon. Local commitment.

Atlantic Canada's salmon farmers care about the communities where they work and raise their families.

Whether supporting local food banks, playing an integral part in community fundraisers, sponsoring sports teams or collaborating on conservation projects, our farmers are proud to contribute to the growth and well-being of their communities. Salmon farming started as a result of wild salmon rehabilitation, enhancement and salmon ranching activities. Today, our farmers work with conservation organizations applying new technologies to rehabilitation efforts throughout the Atlantic region. One of our projects includes the world's first marine conservation farm for wild salmon.

Kurt Samways from the University of New Brunswick/Canadian Rivers Institute shows off one of the wild salmon from the world's first wild salmon conservation marine farm located off Grand Manan.



Jennifer Wiper
Corporate Sustainability Manager

"I love to be able to take my kids to the local grocery store and see our product on the shelf with our logo and certification mark on it and point out 'that's what Mommy does' all the while knowing that I helped get that egg at the hatchery through to harvest/ processing in a sustainable way for them to enjoy."

Local fish. Grown by local farmers.

FROM EGG TO FARM TO YOUR PLATE

Salmon grown in Atlantic Canada originate from the native fish that have been swimming in waters off the eastern coast of Canada for hundreds of thousands of years. Atlantic Canadian salmon farmers mimic the natural life cycle of salmon as closely as possible. The farmed fish start their lives in fresh water and then move to salt water just as they do in nature.

Farmed Atlantic salmon begin their life cycle as eggs, which are collected from adult salmon broodstock. The young fish are reared from eggs in land-based freshwater hatcheries for 12 to 18 months. When the fish are biologically ready to move to salt water, farmers move them to ocean farms where they remain for the next 18-24 months in large floating pens that are moored to the ocean floor and engineered to withstand the challenging Atlantic tides, currents and weather.

Atlantic salmon thrive in their natural habitat inside their ocean pens where they have plenty of room to swim and follow their natural schooling behaviour. Nets, specifically designed for salmon farms, fully enclose the pens to contain the fish and to protect them from predators.

What are sea lice?

Sea lice naturally occur in the ocean, living on many species of wild fish including salmon. They do not pose a human health risk.

Not all salmon farms have sea lice.

Avoiding the use of sea lice treatments is a top priority for Atlantic salmon farmers, but when our fish become stressed by sea lice, farmers respond. Our farmers follow an Integrated Pest Management Plan (IPMP) that outlines a multi-level approach to controlling sea lice, combining preventative farming practices such as fish husbandry, fallowing and low stocking densities, with regulatory approved treatments when necessary. Extensive field research and monitoring have shown that approved sea lice treatments have no negative impact on the marine system, lobster or other species when used according to treatment protocols.

Local salmon. World-class taste.

Atlantic Canadian salmon farmers produce a delicious, healthy and affordable food that comes second to none in taste and quality.

One of the healthiest foods in the world.

Atlantic salmon is one of the healthiest foods you can eat, and it's available year-round from local farmers. Atlantic salmon is one of the highest sources of heart-healthy omega-3 (DHA, EPA). Including salmon in your weekly diet can help prevent heart disease, lower cholesterol and blood pressure, boost your brain function and reduce the risk of cancer, stroke, depression, Alzheimer's disease, arthritis, Crohn's disease and asthma.

- **OMEGA 3** — Helps prevent heart disease and boosts brain function
- **VITAMIN D** — Strong bones and teeth
- **P** — Phosphorus – Strong bones and teeth
- **PROTEIN** — Needed to build and maintain every cell in the body
- **VITAMIN A** — Healthy skin, strong bones and teeth
- **VITAMIN B12 + ZINC** — Helps energy metabolism and tissue formation

RECIPE

Salmon with a Homemade Grain Mustard Crust

4 servings

INGREDIENTS

Four 5-6 oz (150 -180 g) salmon portions

4 tbsp (60 ml) ground brown mustard seed

1/2 tbsp (7 ml) sea salt

3/4 cup (190 ml) ice wine or sweet white wine

2 tsp (10 ml) finely chopped shallots

2 sprigs tarragon

2 cups (500 ml) boiled, sliced potatoes

4 cups (1 litre) spinach with a dash of pepper

4 tbsp (60 ml) mustard vinaigrette

DIRECTIONS

Combine mustard seed, chopped shallots and tarragon. Then add the ice wine.

Spread over the top side of the salmon. Place salmon portions, skin side down, in a large fry pan on medium heat until the bottom is cooked a third of the way through. Then place salmon on a cookie sheet and broil for 3-7 minutes or until salmon flakes easily with a fork.

Mix the potatoes, spinach with the dash of pepper, mustard vinaigrette and sea salt.

Place the potato salad in the centre of the plate, then place the cooked salmon on top and serve.

acffa Atlantic Canada Fish Farmers Association

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