

# New Brunswick Finfish Aquaculture Growth Strategy








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## **New Brunswick Finfish Aquaculture Growth Strategy**

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# Introduction

Aquaculture is an industry that underpins success and prosperity in many rural, coastal and Indigenous communities in New Brunswick. The sector, which consists of both shellfish (e.g., oysters) and finfish (e.g., salmon) farming, are very distinct and different from one another in terms of farming techniques and operations; however they follow many of the same farming practices employed by their terrestrial counterparts related to animal (aquatic) health management, environmental monitoring, biosecurity and area (bay) management.

The finfish sector, which is predominantly Atlantic salmon and the supply chain, has contributed to the New Brunswick economy for over 40 years and peaked in 2012 producing just over 30,000 metric tonnes representing a farm gate value of \$185 million and an export value of \$213 million. As of 2020, production dropped to 18,900 metric tonnes representing a farm gate value of \$125 million and an export value of \$242 million. Strong prices and favourable exchange rates in the United States have created more stable export values for the salmon sector; however, production volumes have dropped by 40% between 2012 and 2020. This decrease has led to discussions on improving productivity, through improved yields and more effective use of leased areas, not simply through increasing the production area. Opportunities for growth of salmon aquaculture in New Brunswick remain substantial given the potential for innovation with respect to culture techniques (e.g., land-based), technological advances, and product diversification. Opportunities associated with other finfish species, value-added food and non-food products will also be explored.

The New Brunswick Department of Agriculture, Aquaculture and Fisheries (DAAF) and the Department of Fisheries and Oceans Canada (DFO) are the lead provincial and federal regulatory agencies responsible for sustainable aquaculture production and protection of fish and fish habitat respectively. The Canadian Food Inspection Agency (CFIA) is the federal lead for aquatic animal health. Several provincial and federal government departments and agencies are involved in the support, development, and regulation of the aquaculture industry. The finfish aquaculture sector has a presence in all regions of the province but is mainly concentrated in Southwest New Brunswick. The Atlantic Canada Fish Farmers Association (ACFFA) represents industry interests on finfish aquaculture.

Through targeted consultations in numerous forums, the views and opinions of many stakeholders, Indigenous communities and the finfish aquaculture industry, have been collected. The Government of New Brunswick (GNB) has taken this dialogue seriously and is confident the finfish aquaculture sector is on a pathway for responsible growth that will continue to focus on utilizing new science and innovations to further improve their operations as it relates to aquatic animal health and protection of the environment.

## What Can New Brunswickers Expect?

This strategy will focus on those opportunities that promote sustainable and responsible finfish aquaculture growth. The strategy provides priority areas of focus, developed through ongoing discussions with industry, Indigenous communities, and other stakeholders. It also seeks to address industry needs while recognizing the importance of environmental and socio-economic sustainability and coexistence with other aquatic resource user groups and interests.

The ultimate long-term goal of GNB is to provide an environment that enables the finfish sector to return to peak historical production volumes. The intent would be to realize this growth through improved technological advancements and more effective use of the leased areas. This strategy is proposing a modest increase in production over the 8-year period that will validate and promote land-based systems and technologies and allow time for implementation of said systems. The evolution

of land-based facilities, through post-smolt production, will assist those advancements and has the potential to revolutionize the industry, once again making New Brunswick a leader in aquaculture innovations.

DAAF will lead this strategy as the prime agency responsible for the development of the aquaculture sector. This is done through promotion of innovative practices and technologies, providing advice, and delivering fish health programs and initiatives supported by policies and legal frameworks. DAAF collaborates with the Department of Environment and Climate Change (DECC) as it relates to their regulatory mandate for aquaculture (e.g., approvals under the *Clean Water Act*, *Pesticide Control Act*) and the Department of Aboriginal Affairs (DAA) as the lead for all engagement and consultation activities with Indigenous communities related to aquaculture development and regulation.

Seven (7) broad themes will guide efforts and strategic actions identified to address priorities. The implementation of the strategy will be coordinated by DAAF through a Steering Committee including industry, Indigenous representatives, and other pertinent provincial and federal government departments. The Steering Committee, established by DAAF, will produce an annual work plan, and conduct an annual review of the strategy to ensure elements remain strategic and relevant.

## Indigenous Perspectives

Indigenous People in New Brunswick, and across Canada, have a deep knowledge and spiritual connectedness to the land and water – a connectedness developed over thousands of years. Seeking Indigenous perspectives on marine and terrestrial stewardship is important in developing a new Finfish Aquaculture Growth Strategy for New Brunswick.

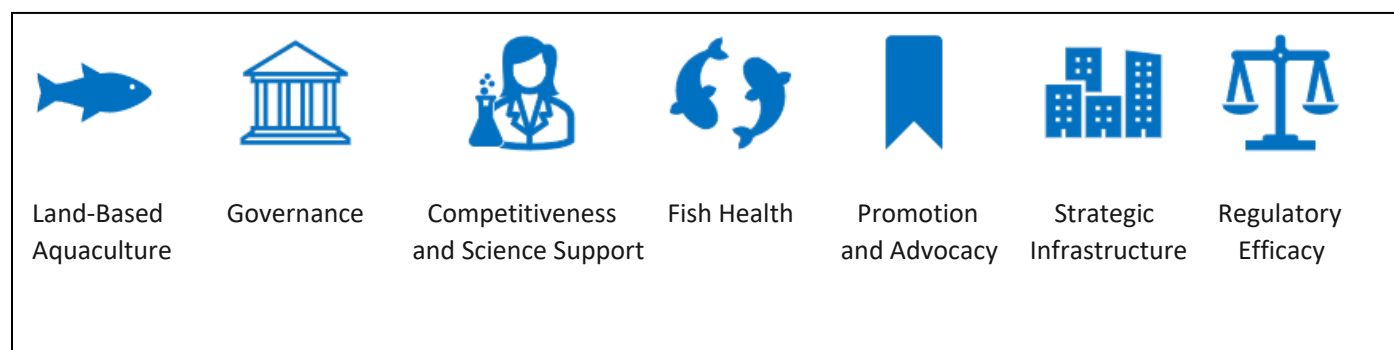
GNB is committed to upholding the Duty to Consult with Indigenous people to ensure Aboriginal and treaty rights are respected, and where necessary, that any potential adverse impacts to Aboriginal and treaty rights are appropriately mitigated or accommodated.

Engagement with Indigenous organizations, as part of developing the New Brunswick *Aquaculture Act*, has identified unique and valued perspectives regarding the practice of aquaculture in New Brunswick. These engagement processes have had a positive influence in developing a new proposed regulatory framework for the sector.

In implementing a new Finfish Aquaculture Growth Strategy, engagement with Indigenous organizations, businesses and communities will continue with the objective of seeking input, feedback, concerns, or new ideas. Early indications of Indigenous interests include environmental concerns, fish health, monitoring regimes, access to data, protection of Aboriginal and treaty rights and exploring economic development opportunities. Continued collaboration with Indigenous communities currently in the sector and those looking to participate will also be a strategy focus. This strategy aims to reflect Indigenous interests, as appropriate.

## Strategy Themes

This outlines seven (7) themes that will guide the actions and key priorities of the strategy.





# Land-Based Aquaculture

The New Brunswick marine salmon aquaculture industry is among the longest tenured in Canada. Worldwide, planned expansion of land-based production facilities is fast-growing. New Brunswick recognizes that new aquaculture approaches are needed to grow the industry while effectively utilizing our resources. The land-based focus will bring a new opportunity for greater production in ocean waters by shortening time Atlantic salmon spend in marine cages.

As this technology advances to address the challenges of energy consumption, fish welfare and economics, New Brunswick’s goal is to support land based “post-smolt” facilities producing hatchery fish grown from the normal 150-gram fish to >500 gram fish prior to release in marine cages. The benefits of this form of on-land production are multiple:

- ❖ Longer lifespan on land means reduced exposure to disease and sea-lice in the marine environment.
- ❖ Greater control on production and growth.
- ❖ Ability to mimic growth and production techniques exhibited in Canada and worldwide.
- ❖ Better marine site utilization allowing for potential to revisit current Bay Management Plans.

## Key Milestones and Actions:

April 2022	Hire a hydrologist to provide expertise in identification of suitable areas for land-based aquaculture production.
September 2022	Form Inter-Governmental working group specific to land-based Aquaculture.
October 2022	Assess and identify at least two (2) additional suitable areas for land-based aquaculture production (i.e., required water supply, suitable locations).
November 2022	Assign a specialist within DAAF to focus on land-based production, the developing technology, and assist with inter-departmental collaboration.
December 2022	Develop a “One Team; One GNB” approach with relevant provincial departments as it relates to review of land-based production applications and pre-identification of areas with required attributes, energy sources and water access.
December 2024	Support (licensing and leasing, project review and funding requests through the Atlantic Fisheries Fund) at least one (1) large scale, land-based facility.
Ongoing to December 2030	Facilitate an increase in finfish production of 20% (3500 tons) through technology advancements, better use of current lease footprints and alternative finfish species production (e.g., Arctic Charr).

\*Highlighted Actions in red are the Key Performance Indicators (KPIs) of the 2022-2030 Finfish Aquaculture Growth Strategy



## Governance

A productive, ongoing dialogue with users of the marine space is key to responsible growth; and a healthy aquatic environment is crucial for all users. The relationship between the aquaculture and fisheries industries is strong and continues to grow as they collaborate in several areas. Strategic cooperation amongst the provinces, and harmonization of processes and regulatory frameworks, where possible, will be important in facilitating the growth of the finfish aquaculture sector in the Atlantic Region.

The Bay of Fundy Marine Aquaculture Site Allocation Policy, created in 1999, helped government and industry navigate site allocations at the time. A revision of this policy is required, incorporating Indigenous involvement, updated relevancy to the new *Aquaculture Act* and its Regulations, and current day to day practices.

### Key Milestones and Actions:

May 2022	Establish Strategy Implementation Steering Committee and commence work on annual work plan.
July 2022	Increase communications with the public, improve transparency of practices and work to minimize potential conflict with other aquatic resource users (e.g., development and launch of the Aquaculture Registry to the general public).
September 2022	Work with DECC to develop a Memorandum of Understanding (MOU) that will clearly articulate roles and responsibilities and facilitate an “all of government approach” to support the responsible growth of the finfish aquaculture sector.
March 2023	Review and update the Bay of Fundy Marine Aquaculture Site Allocation Policy to ensure alignment with the new <i>Aquaculture Act</i> and associated Regulations.
September 2023	Commence work with DFO to revise the New Brunswick-Canada MOU on Aquaculture Management that clearly defines DFO’s role as it relates to aquaculture management in New Brunswick.
Ongoing with regular reporting to Deputy Ministers	Work through the Atlantic Provinces Aquaculture Coordinating Table (APACT) under the auspices of the Atlantic MOU for the Development and Management of the Aquaculture Industry (signed January 2021) to advance harmonization of government processes in the Atlantic region, where feasible, as relates to facilitating aquaculture development and production. Share priorities with industry on the work of APACT.



## Competitiveness and Science Support

Assistance for industry related to research, development, and expansion are available through provincial and federal governments. Government also supports industry initiatives seeking to improve competitiveness. New Brunswick is experiencing a shortage of skilled and semi-skilled workers, which is recognized as a particular challenge for the salmon farming industry.

### Key Milestones and Actions:

March 2023	Work with the New Brunswick Community College, Post Secondary Education, Training and Labour and Early Education and Childhood Development in addition to the Atlantic Canada Fish Farmers Association to continue development of an online module-based competency approach for learning required skills to work in the sector. Learning required for all levels: certificate, diploma, undergraduate degree, masters' degree.
March 2023 to December 2030	Implementation, assessment and improvements to above noted programs to address industry labour needs.
Ongoing to December 2030	Provide technical expertise to support scientific research that will lead to the <b>development and adoption of "green" technologies for sea lice control</b> . *This is an ongoing initiative that will be a priority each year of the strategy.
Ongoing to December 2030	Where COVID-19 restrictions allow, encourage technical missions and technology knowledge transfer for industry to better understand recent developments in land and marine based systems, and "green" technologies and how these technologies may apply or be established in New Brunswick.





The Canadian Food Inspection Agency (CFIA) is the federal lead for aquatic animal health and Health Canada is responsible for approving the use of therapeutants in the aquaculture sector. Fish health management in New Brunswick, aimed primarily at managing Infectious Salmon Anemia (ISA) and sea lice, is a priority for the industry. A dedicated provincial fish health team focuses on options to minimize ISA incidence. Continued research and development of new diagnostics and management techniques and access to effective therapeutants are critical to the sustainability of both the marine and freshwater finfish sectors. The aquaculture industry has limited approved options for use in treating parasites or disease, therefore ongoing research is key to managing these hazards.

**Key Milestones and Actions:**

March 2025	Work with partners in Health Canada through the Pest Management Regulatory Agency (PMRA) and the Veterinary Drug Directorate (VDD) to develop a pilot project for a Minor Use and Minor Species Program for Aquaculture in Canada. This will provide an avenue for the aquaculture industry to access additional tools for the management of fish health and pest control in the sector.
Ongoing to December 2030	Engage and provide technical expertise to industry for increased research on sea lice reduction, with a focus on non-therapeutant options.
Ongoing to December 2030	Advocate to the federal government for the review and approval, in a timely manner, of new therapeutants for use in aquaculture.
Ongoing to December 2030	Collaborate with CFIA on exploratory fish health work for emerging disease issues.
Ongoing to December 2030	Continue collaboration with Department of Health and CFIA as it relates to items within the New Brunswick-Canada MOU for Safeguarding Canada’s Food, Animals and Plants and Concerning the Management of Aquatic Animal Disease Response.
Ongoing to December 2030	Continued focus on the Integrated Pest Management Program for the control of sea lice and incorporating improvements to the program as new tools and science becomes available.
Ongoing to December 2030	Deliver and manage appropriate regulatory surveillance programs, including targeted diagnostic analysis with respect to fish health management and disease control.



## Promotion and Advocacy

Many factors indicate there will be a significant increase in demand globally for sustainably sourced healthy protein, and New Brunswick is poised to benefit from this. This will be realized in partnership with industry through promotion and advocacy, stimulating demand and educating people on the variety of healthy products aquaculture can provide.

### Key Milestones and Actions:

March 2023	Develop and implement informational/promotional initiatives based on product safety, nutritional value, and environmentally sustainable and responsible production methods in partnership with industry.
Ongoing to December 2030	Gather market intelligence to further define new opportunities.
Ongoing to December 2030	Utilizing in-market consultants in China, Korea, Europe, India and the United States; <b>increase exports of finfish products by 1.25% per year (target of 10% over the life of the strategy).</b>
Ongoing to December 2030	Work with industry on the development and implementation of initiatives related to improving product quality, demonstrating sustainable production methods, and enhanced food safety and traceability.
Ongoing to December 2030	Assist industry to capitalize on initiatives related to the development of value-added product in response to market demand.
Ongoing to December 2030	Increase public education on the benefits of aquaculture production within the province.



## Strategic Infrastructure

There is increased demand on existing infrastructure (e.g., wharves) and a substantial need for new infrastructure in strategic locations, which are the responsibility of Fisheries and Oceans Canada (DFO) through the Small Craft and Harbours (SCH) program. The current demand for aquaculture-specific wharves and landing infrastructure to service marine-based finfish operations exceeds existing capacity in the Bay of Fundy. Infrastructure needs extend to service sectors supporting the marine finfish industry, including purchase of specialized equipment, machinery upgrades, and research to support specialized testing equipment.

### Key Milestones and Actions:

March 2025	Review infrastructure requirements that complement increased utilization of land-based facilities for post-smolt production.
Ongoing to December 2030	Work with the federal government, through SCH, to recognize aquaculture as a legitimate user of wharf infrastructure and support the needs of both the aquaculture and fisheries sectors (e.g., Woodward's Cove wharf construction project, which has a 6-8 year timeframe for completion).
Ongoing to December 2030	Through DAAF Aquaculture Science and Business Growth teams, provide technical and business support for initiatives that are led by industry or support sectors through applicable funding programs (e.g., Atlantic Fisheries Fund (AFF), Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP)).



## Regulatory Efficacy

A new *Aquaculture Act* and supporting Regulations are intended to be in place by July 2022. The original *Aquaculture Act*, written in 1989, required updating and modernizing to reflect advancements in the industry. Better alignment with Aquaculture Bay Management Areas (ABMA's), transparency and streamlined regional requirements to provide regulatory certainty, are key to continued responsible growth.

### Key Milestones and Actions:

April 2022	<b>Proclamation of new <i>Aquaculture Act</i> and making of supporting Regulations (General, Fees and Rents, Aquaculture Products Health and Welfare) and consequential amendments to the <i>Seafood Processing Act</i> and the <i>Provincial Offences Procedure Act</i>.</b>
July 2022	Implement new regulations (General, Fees and Rents, Aquaculture Products Health and Welfare) and consequential amendments to the General Regulations under the <i>Seafood Processing Act</i> and the <i>Provincial Offences Procedure Act</i> .
July 2022	Provide regulatory technical expertise to industry as they navigate new requirements within the Act and the Regulations.
December 2022	<b>Develop and implement service standards on all lease application reviews.</b>
March 2023	Work with the Department of Environment and Climate Change (DECC) to finalize the Environmental Management Program Update for marine and freshwater facilities.
March 2023	Commence ABMA review in the Bay of Fundy to assess required changes to current areas and adjustments to production cycles that will support further growth, while supporting the principles of fish health and hydrographic separation.
December 2025	<b>Finalize and implement new ABMA structure in the Bay of Fundy.</b>



## Key Performance Indicators (KPIs)

2022	Assess and identify at least two (2) suitable areas for land-based aquaculture production (i.e., required water supply, suitable locations).
	Development and launch of the Aquaculture Registry to the general public.
	Work with DECC to develop a MOU that will clearly articulate roles and responsibilities and facilitate an “all of government approach” to support the responsible growth of the sector.
	Proclamation of new <i>Aquaculture Act</i> and making of supporting Regulations.
	Develop and implement service standards on all lease application reviews.
2023	Review and update the Bay of Fundy Marine Aquaculture Site Allocation Policy to ensure alignment with the new <i>Aquaculture Act</i> and associated Regulations.
2024	Support (licensing and leasing, project review and funding requests through the Atlantic Fisheries Fund) at least one (1) large scale, land-based facility.
2025	Work with partners in Health Canada through the Pest Management Regulatory Agency (PMRA) and the Veterinary Drug Directorate (VDD) to develop a pilot project for a Minor Use and Minor Species Program for Aquaculture in Canada.
	Finalize and implement new ABMA structure in the Bay of Fundy.
2030	Increase exports of finfish products by 1.25% per year (target of 10% over the life of the strategy).
	Development and adoption of at least two (2) “green” technologies for sea lice control.
	Work with the federal government, through SCH , to recognize aquaculture as a legitimate user of wharf infrastructure and support the needs of both the aquaculture and fisheries sectors (e.g., Woodward’s Cove wharf construction project, which has a 6-8 year timeframe for completion).
	Facilitate an increase in finfish production of 20% (3500 tons) through improved yields, better use of current lease footprints and alternative finfish species production (e.g., Artic Char).