

THE COLD HARVESTER

NEWFOUNDLAND AQUACULTURE

COLD HARVEST 2023 HIGHLIGHTS

Grieg & Quinlan
Celebrate Milestone

Farmed Salmon Tops
Protein Sustainability Index

*New Multi Species
R&D Funding*



WINTER 2023/2024

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WINTER 2023

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Front cover: Honourable Elvis Loveless, Minister of Fisheries, Forestry and Agriculture provided greetings on behalf of the province of Newfoundland and Labrador at Cold Harvest 2023 in St. John's NL in September.

NAIA Board of Directors 2022-2023

President - Salmonid Representative: **Sheldon George**, Regional Manager - Cold Ocean Salmon

Vice President - At-Large Representative: **Jonathan Gagné**, Sales Representative, Enterprises Shippagan Ltd.

Secretary - Shellfish Representative: **Laura Halfyard**, General Manager - Connaigre Fish Farms Inc.

Treasurer - At-Large Representative: **Danny Boyce**, Facility & Business Manager - Dr. Joe Brown Aquatic Research Building, (JBARB) Memorial University of NL

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Shellfish Representative: **Terry Mills**, President, Norlantic Processors Inc.

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Salmonid Representative: **Knut Skeidsvoll**, Managing Director - Grieg Seafood Newfoundland

Alternate Species Representative: **Cathy Follett**, Business Manager - Amar Canada

At-Large Representative: **Lesley Clark**, Key Account Manager, Skretting Canada East

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Message from President and Chair of the Board

Sheldon George

Hello Cold Harvester readers, and welcome to our Winter 2023/2024 edition.

As I sit here thinking about highlights to write about in the President's message, I have some mixed emotions. One may ask, how can you have mixed emotions when we are in an exciting industry that helps put healthy food on people's plates worldwide?

It's true, the Newfoundland and Labrador Aquaculture Industry has experienced positive moments in 2023, however it has had some setbacks as well.

On the positive side of things, what a year it has been for Grieg Seafood NL. This year their persistence and hard work has paid off, as they are harvesting their first crop of fish. Congratulations to the staff, certainly a job well done.

As a farmer, I know well the great feeling you get when you see the fish you cared for over the last 18 to 20 months come across the harvest vessel. For non-farmers, it is like seeing your children walk across the floor to receive their graduation diploma, except for farmers the diploma is a nice shiny market size salmon or large bright fillet. All the work everyone did during the growth period has finally paid off, all the early morning boat departures, phone calls and late nights checking the forecast and looking out at the wind feels very worthwhile.

So, great job Grieg folks, and thank you to our provincial government for all the support to help expand our industry.

While all that is going on and creating buzz in the Marystown area, we see challenges arising in the on the west coast however. It's disappointing to hear that Mowi Canada East's work on their hatchery in Stephenville has to go through an Environmental Assessment. The facility is already established and farms have been operating. Expansions in hatcheries do not necessarily mean one needs more farms or are producing more fish. The global trend in the industry is to grow your smolt larger before you transfer them to sea cages. A facility can only produce a certain biomass so you can either have a lot of small fish, or fewer larger fish. It has been proven that

larger fish transferred to sea gives better production than smaller fish. In my view, delaying this expansion for already existing facilities is just delaying one from becoming more efficient and successful.

In Marystown the province is reaping the rewards of appropriate support for the industry, while in Stephenville the province is not clear. This lack of consistency is very unfortunate.

One thing that is certain in this province though, is the support of the industry suppliers. What a great time to thank all of our service/supply people as we move to the end of 2023 and start off 2024. As Chair of the association, I look forward to devoting more of 2024 to highlighting our suppliers and showing how this great industry has economic impacts island wide. We may farm in small, localized locations, but we use suppliers from all over the province. What a great story, how can one not support this and want this in their area? Our industry is gaining in popularity and public support every year. How are we doing this? Through a network of suppliers and also due to our NAIA staff.

I want to end off by highlighting the community outreach our staff have been doing province-wide. Our industry has been showcased in many schools this year island wide, highlighting the great products we grow and the many job opportunities we have available. Aquaculture, like all other industries, will only last as long as it has a workforce. What a great way for our beautiful province to keep our communities alive, hiring young workers to carry on our farming skills, and improve on them. Thank you to all the schools and guidance counselors throughout the province who allowed our industry to be featured. Please keep highlighting the many different careers we have available, we have something to offer people with any skill set. We will need more and more youth to keep the farms and facilities operating.

Thank you for your time, and hats off to Grieg, keep pressing on MOWI and I cannot forget our shellfish folks, keep those mussels and oysters coming!



Message from Executive Director

Jamie Baker

It's a tough question that enters my mind many times a day: How does the farm sector successfully push back against the endless fabrications and scare tactics being deployed by anti-farming people and their friends in the media?

It's a tough question when you consider the rules of play. They don't have to fight fair. We do. They can throw around whatever innuendos and falsehoods they wish, despite mostly never having even seen a farm never mind know much about it, and they'll get lots of airtime and click-bait headlines from here to forever. All we can do is respond with facts about our sector, the advancements that have been made and the success we can bring environmentally, economically, and practically.

But by the time we clear up the misleading attacks, the horse has left the barn. You'll never live to see a headline that states "Farm sector clearly shows its right, and that anti-farming groups are wrong," because that's not going to get clicks!

So again, I ask, how do you succeed in the face of such an unfair fight?

These past few weeks I think the answer has become clear. We succeed by doing exactly what we have been doing, and letting the world know about it. By doing that we make it increasingly hard for activists to BS people, and equally hard for their select media supporters to ignore the truth.

In NL we only need take a look at some of the things that have happened this fall to find clear indications that we are on the right track.

As of this writing, Grieg Seafood NL is harvesting 5,000 tonnes of it's first generation fish – fish that were raised with zero treatment, zero escapes, extremely low mortality, and fish that, as they are triploids, unable to reproduce even if they did escape. Good luck poking holes in that. Even the worst antimedia out there (most did anyway, with a few hilarious exceptions) were forced to cover it, much I am sure to their chagrin.

This is not the first time NL has boasted fish going to harvest with no treatment, and zero escape either, so it's important to note that all our companies are showing the way. All our companies including Grieg, Cooke, Mowi and Ocean Trout Canada continue to invest in new tech to ensure that we can reduce/eliminate escapes, reduce/eliminate treatments, and tackle sea lice naturally.

As this was happening, the Collier FAIRR Index report was released showing, that for the 5th year in a row, salmon farming is by a lot the most sustainable way to raise protein on planet Earth. Mowi was number one on the list for the 5th year in a row. Grieg showed up in third spot. The only thing keeping Cooke from being there also is that the Collier FAIRR index measures only publicly traded companies.

Oh, and maybe this is a good time to note that in 2022, not one single solitary Atlantic salmon successfully escaped from farms in Newfoundland and Labrador. One salmon was reported as having escaped but was immediately recaptured (the fact that one fish was reported publicly further cements the industry's attention to the regulatory framework). Also, at the same time we learned this, we also learned that the salmon sector in NL had 100 percent compliance with inspections and upgrades in 2022. Try ignoring that.

As well as finfish have been doing in NL, they are not alone. No sir. Shellfish too are showing their good work, even in the face of huge regulatory challenges and issues.

In October we found out that Newfoundland's first ever commercially produced line of oysters – Merasheen, Puffin Rock and Salty Rock – had signed a deal to supply Earl's, a massive restaurant chain in Canada and the US, with fresh NL oysters. The most northern oysters on the continent came into fruition because a producer invested years of work and millions of dollars investment, and the fruits of those labours are now abundantly clear.

Our mussels, what else can you say, are among the only organic blue mussels money can buy in North America, year after year after year. Tough stuff to turn a blind eye to I'd say.

So, while we are forced to listen to the ill-informed, ill-intent activists and their cheerleaders taking up all the air and screen time, try not to forget, they're in the absolute minority (depending on the poll, between 70 and 80 per cent of people in this province believe this sector is a good one, and an important one).

The more we continue along the track we are on, the harder it will be for them to carry out their well-funded mandates. Stay the course, keep growing, keep innovating, and keep showing the people of the world why NL is an exciting place to grow food.

All the very best wishes for happy holidays and a healthy and prosperous new year to all NAIA members!

New Funding Program to Support Research and Development in the Provincial Aquaculture Industry Fisheries, Forestry and Agriculture

September 6, 2023

The Provincial Government is launching a new Multi-Species Research and Development Fund to diversify and expand Newfoundland and Labrador’s aquaculture industry. The fund will support investment in the research and development of aquaculture species that are not currently commercialized in the province.

The Honourable Elvis Loveless, Minister of Fisheries, Forestry and Agriculture launched the fund at Cold Harvest 2023, the Newfoundland Aquaculture Industry Association’s annual conference in St. John’s.

Successful program applicants will access non-repayable funding to assist in research and development for specific aquaculture projects, and to incentivize the farming of cultured plants and new species.

The program will support the transfer of knowledge and technology to encourage the introduction and establishment of diverse species in the provincial aquaculture sector. Businesses, organizations or individuals can find more information on the Multi-Species Research and Development Fund at the Fisheries, Forestry and Agriculture website.

Through Budget 2023, the Provincial Government has allocated \$500,000 annually for three years for multi-species aquaculture development and the collection of oceanographic data.

Quotes

“Our government has been working hard to grow Newfoundland and Labrador’s sustainable aquaculture sector.

This new program to research and develop production of new species has the potential to support new jobs and economic stability, particularly in rural areas where it is most needed.”

Honourable Elvis Loveless, Minister of Fisheries, Forestry and Agriculture

“The successful development of farmed alternative species represents an incredible opportunity to support continued growth of Newfoundland and Labrador’s sustainable aquaculture sector. With several alternative species projects currently in early development stages, and others coming on stream, we anticipate this timely and targeted investment by the province will be a catalyst for positive advancement for producers in our sector and the people of the province in the years ahead.”
Jamie Baker, Executive Director, Newfoundland Aquaculture Industry Association

Source: <https://www.gov.nl.ca/releases/2023/ffa/0906n01/>



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NAIA Board of Directors 2023-2024

The NAIA Board of Directors for 2023 - 2024 was voted in during our Annual General Meeting which took place on September 6th at the Delta Hotel in St. John's NL. We would like to congratulate the newest Board members and send a special thanks to the outgoing board members for your continued support and dedication. The new Board for 2023-2024 is as follows:



NAIA Board of Directors 2023 – 2024: Back row L to R: Aaron Bennett – Mowi, Lesley Clark – Skretting, Jonathan Gagne – Enterprise Shippagan Ltd., Danny Boyce – Ocean Sciences Centre JBARB, Sheldon George – Cold Ocean Salmon, and Juan Roberts – Badger Bay Mussel Farms. Front row L to R: Laura Halfyard – Connaigre Fish Farms, Candice Way - Grieg Seafood NL (standing for Knut Skeidsvoll), and Cathy Follett – AMAR/Marbase. Missing from photo Terry Mills – Norlantic Processors.

- **President - Salmonid Representative:** Sheldon George, Regional Manager - Cold Ocean Salmon
- **Vice President - At-Large Representative:** Jonathan Gagne, Sales Representative, Enterprises Shippagan Ltd.
- **Secretary - Shellfish Representative:** Laura Halfyard, General Manager - Connaigre Fish Farms Inc.
- **Treasurer - At-Large Representative:** Danny Boyce, Facility & Business Manager - Dr. Joe Brown Aquatic Research Building, (JBARB) Memorial University of NL

- **Shellfish Representative:** Juan Roberts, President, Badger Bay Mussel Farms
- **Shellfish Representative:** Terry Mills, President, Norlantic Processors Inc.
- **Salmonid Representative:** Aaron Bennett, Development and Environmental Compliance Director, Mowi Canada East
- **Salmonid Representative:** Knut Skeidsvoll, Managing Director - Grieg Seafood Newfoundland
- **Alternate Species Representative:** Cathy Follett, Business Manager - Amar Canada
- **At-Large Representative:** Lesley Clark, Key Account Manager, Skretting Canada East

Modernized Aquaculture Act, 2023 to Support Continued Growth in Aquaculture Sector

Fisheries, Forestry and Agriculture

October 17, 2023

Proposed changes to the Aquaculture Act, 2023, will modernize policy and regulations and will provide guidance and direction for growing Newfoundland and Labrador's aquaculture sector.

Proposed improvements to the legislation would support the orderly development of an environmentally sustainable aquaculture industry, increased public trust, and the establishment of this province as a leader in aquaculture health and production.

The Aquaculture Act, 2023 includes a number of measures to enhance public transparency, biosecurity and aquatic animal health. Regulations under the new Act, if approved, would require aquaculture operators to undertake or implement:

- Increased licensing and operating requirements;

- Formalized aquatic animal health practices;
- Prescribed mitigation and monitoring requirements; and
- Stringent public reporting requirements.

Quote

"Changes to the Aquaculture Act provide a set of strong, modernized policies and regulations that position Newfoundland and Labrador as a respected global leader in aquaculture. I look forward to working with all stakeholders as we continue to grow an environmentally sustainable aquaculture industry throughout the province." - Honourable Elvis Loveless, Minister of Fisheries, Forestry and Agriculture

Learn more: <https://www.assembly.nl.ca/HouseBusiness/Bills/ga50session2/bill2317.htm>



Community Profile

Town of St. Alban's

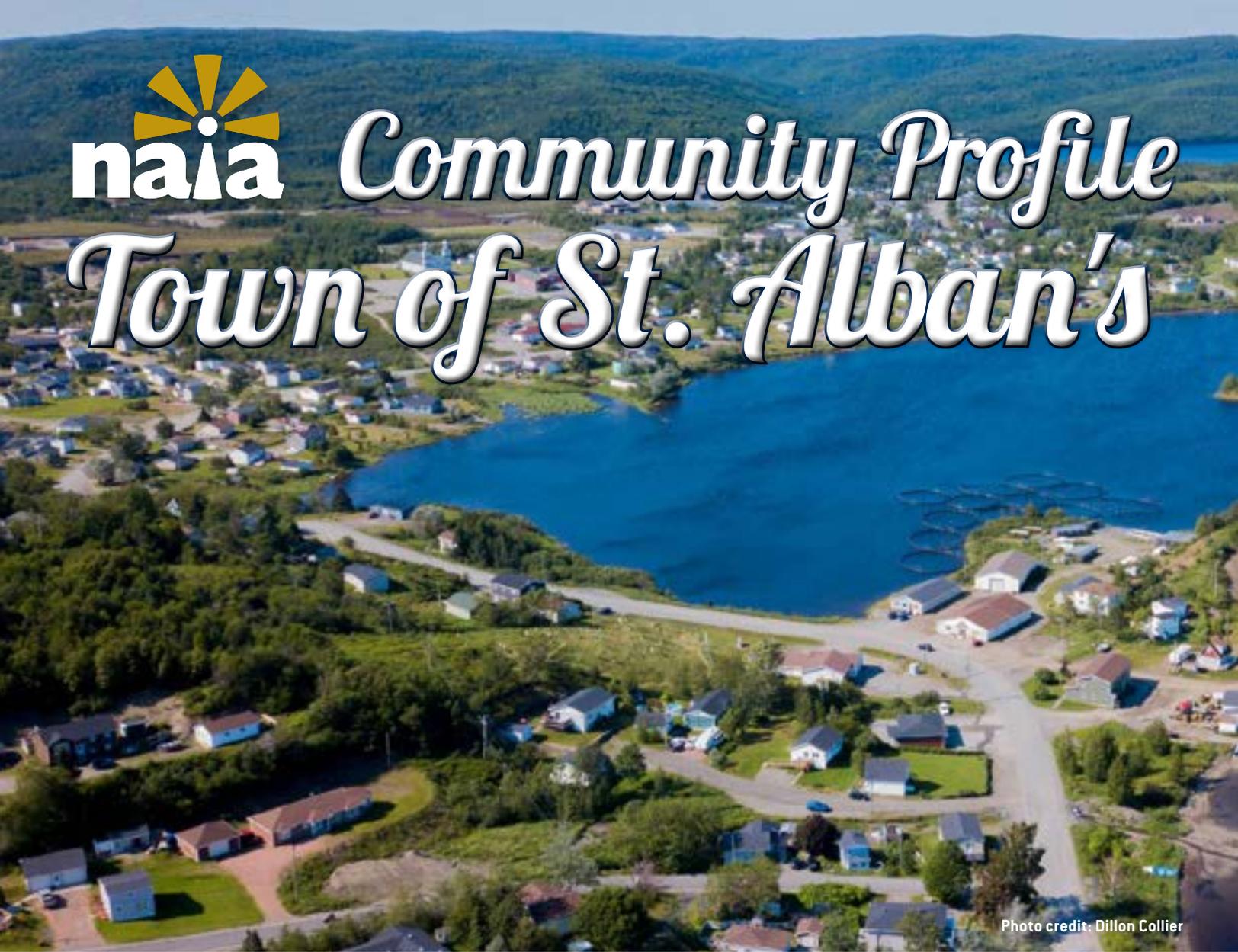


Photo credit: Dillon Collier

All across Newfoundland and Labrador the aquaculture industry contributes to local rural economies by providing employment for residents and supporting infrastructure investments and service sector companies. Our towns support our sustainable industry by providing a positive and supportive environment for aquaculture development. With this in mind, the Community Profile Column, in each edition of the Cold Harvester magazine, will celebrate a community where the aquaculture industry is active and is boosting rural economic activity.

W: www.stalbans.ca | E: st.albans@nf.aibn.com

The Town of St. Alban's, originally named Ship Cove, is located in Bay d'Espoir, an inland area of the scenic Coast of Bays Region on the south coast of Newfoundland and Labrador. With almost 1,200 residents, it is the largest community in the Bay d'Espoir region.

The economy in both the town and the local area was based on trading and logging when first settled in the mid-1800's. Today the major industries include hydro-electric generation and aquaculture.

The Town of St. Alban's has always been a key player in the development of the Newfoundland and Labrador aquaculture

industry, after hosting early efforts with salmon and trout culture in the 1980's and 1990's. For years the town was one of the main processing locations for NL cultured salmon and trout products. Today St. Alban's is still one of the main hubs of aquaculture on the south coast. The town is home to the Centre for Aquaculture Health and Development, run by the Department of Fisheries, Forestry and Agriculture. Cooke Aquaculture, Mowi Canada East, and Ocean Trout Canada have offices in the community and the Swanger Cove Hatchery is located just outside the community.

Our people, past and present, home and afar, are strong and resilient. St. Alban's, NL has Strong Roots and a Stronger Future!



Merck Animal Health Introduces Two Training Modules in the AQUA CARE365™ Aquatic Animal Welfare Series

THE AQUA CARE365 EDUCATIONAL PROGRAM EMPOWERS THE AQUACULTURE AND CONSERVATION FISH COMMUNITIES WITH TRAINING AND KEY BEST PRACTICES FOR IMPROVED FISH WELFARE

Merck Animal Health, known as MSD Animal Health outside of the United States and Canada, a division of Merck & Co., Inc., Rahway, N.J., USA (NYSE:MRK), today announced the availability of two new training modules in its AQUA CARE365™ fish welfare series addressing important operational and welfare aspects of Harvest and PIT Tagging.

AQUA CARE365 is a unique, internet-based educational program and training resource with video-based content dedicated to assisting aqua communities develop and deliver a culture of care and improved welfare for aquatic species while promoting a safe, affordable and sustainable food supply. The program also was designed to complement and help fulfill the animal care requirements of certification and stewardship programs for aquaculture.

“Merck Animal Health is committed to providing the aquaculture and conservation industries with important welfare

training and best care practices to advance the care and welfare of all aquatic species of fish, which contributes to the ongoing success of our customers’ operations,” said Tim Kniffen, D.V.M., M.S., technical services veterinarian in the North America Aqua Business Unit of Merck Animal Health. “The AQUA CARE365 program addresses topics that provide valuable insights and information to help educate anyone with an interest in aquatic animal welfare, but especially caretakers working with fish. This training will ultimately create and improve a culture of care for the animals, whether in aquaculture or conservation operations.”

The two new modules on Harvest and Pit Tagging are part of a series of six modules in the AQUA CARE365 program, which also includes Farm Fish Behavior, Sea Pen Handling, Anatomy and Vaccination, along with a prerequisite lesson on Fish Welfare. The new Harvest training module empowers learners with

practical competencies in the sequential steps of harvest and how to properly observe and contribute to the harvesting process while paying close attention to the welfare of the animals. The new PIT Tagging module provides learners practical competencies in welfare-cognizant PIT tagging procedures for conservation and aquaculture applications.

To create a free account and register for the AQUA CARE365 series, visit [AQUACARE365.com](https://www.aquacare365.com), contact a Merck Animal Health representative or email AquaCare365@merck.com. For more information on the full line of aquaculture products and services, visit www.merck-animal-health-usa.com/species/aquaculture.



Grieg Seafood Commences Harvesting of the First Generation of Salmon in Newfoundland

The first generation of fish in Placentia Bay in Newfoundland has been farmed with good fish health and welfare. Grieg Seafood will continue to develop its farming region in Newfoundland gradually and responsibly. *Marystown, October 30, 2023*



**SINCE 2014,
WE HAVE BEEN
WORKING
TOWARDS THIS
DAY, WHEN WE
ARE FINALLY
ABLE TO SEND
SALMON GROWN
IN PLACENTIA
BAY TO OUR
CUSTOMERS AND
CONSUMERS.**

**KNUT SKEIDSVOLL,
MANAGING DIRECTOR
OF GRIEG SEAFOOD
NEWFOUNDLAND**

In October, the first fish were harvested and then packed at Quinlan Brothers Ltd.'s processing plant in Bay de Verde before they were transported to customers in the North American market.

Fish from the farm Red Island are currently being harvested. The first generation of fish spent about a year in Grieg Seafood's fresh-water and smolt facility in Marystown and was transferred to two ocean farms in Placentia Bay in 2022.



The harvest of the first generation marks a milestone for Grieg Seafood Newfoundland. The company started developing the aquaculture project in Placentia Bay in 2014.

The first generation of fish has grown well throughout the year. Deep pens, no need for treatments of any form as well as transfer of best practices from similar conditions in other Grieg Seafood regions have contributed to good fish health and welfare throughout the production cycle. The first generation has a survival rate of 92 percent. The annual survival rate of all of the fish in the ocean farms is currently 96 percent.

The fish has been farmed with no sea lice issues. The fish farmed in Newfoundland will be transported to the growing North American

market without the need of air freight, making it a local alternative with low carbon emissions.

In the Spring and Summer of 2023, Grieg Seafood transferred the next generation of fish into three new ocean farms. The second generation will be harvested in 2024.

Andreas Kvame, CEO of Grieg Seafood ASA, said: "Harvesting the first generation of fish in Newfoundland marks an important milestone for Grieg Seafood. I am pleased to see that the fish has good welfare and that biological control

has been strong.

This first, successful generation shows what enormous potential Placentia Bay in Newfoundland holds for sustainable salmon farming. This is especially true in light

of the booming North American market just next door, where consumers are increasingly asking for local, healthy and climate friendly food. We will continue to develop our production in Newfoundland gradually and responsibly during the years to come.

I want to congratulate all of my hard-working colleagues in Newfoundland with this achievement."

Knut Skeidsvoll, Managing Director of Grieg Seafood Newfoundland, said:

"Since 2014, we have been working towards this day, when we are finally able to send salmon grown in Placentia Bay to our customers and consumers. I am pleased with the biological performance of the first generation, including the survival rate as well as strong sea lice control.

I want to thank all of my colleagues in Newfoundland for their hard work during these years, as well as the local communities of Placentia Bay and the Province of Newfoundland & Labrador for their support. We will keep developing our Newfoundland region step by step, and create jobs and value for the communities where we operate for years to come.”

Robin Quinlan, President of Quinlan Brothers Ltd., said:

“Quinlan is honored and excited to partner with Grieg Seafood on this next step of seafood production. Our relationship with Grieg is based on shared commitment to sustainability, innovation, and quality.

We’re sending our congratulations to Grieg for the successful growth and harvest of this first generation of fish. They represent the beginning of a new opportunities for stability, employment, and growth in our region and beyond into international markets.”

About Grieg Seafood Newfoundland

- Grieg Seafood Newfoundland currently has an on-land RAS facility consisting of a hatchery, a nursery and a smolt unit in Marystown, as well as five marine farms in Placentia Bay. 14 licenses are currently approved.
- Grieg Seafood aims to harvest 5000 tonnes of salmon in Newfoundland in 2023.

- Grieg Seafood is developing the project based on existing best-practice farming technologies.
- The company is still in an early phase and will expand the project gradually and responsibly, in line with biological developments.
- The aquaculture project in Placentia Bay started in 2014.

About Quinlan Brothers Ltd.

- Quinlan Brothers Ltd. is a multi-species seafood processor operating plants across rural Newfoundland.
- At facilities in Bay de Verde, Baie Verte, and Old Perlican, Quinlan processes snow crab, cod, turbot, squid, capelin, salmon and other species.
- Over the last 70 years, Quinlan has built a reputable and sustainable multi-species seafood operation in Newfoundland & Labrador.
- As one of the region’s largest seafood producers, Quinlan exports multi-species products to more than 20 countries worldwide.

Contact information

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CANADIAN AQUACULTURE
INDUSTRY ALLIANCE

Top Marks for Farm-Raised Salmon on Environmental, Social and Governance Performance

November 8, 2023

New Sustainability Index Ranks 7 Salmon Producers Among Top 10, with producers having operations in Canada at #1 and #3

OTTAWA, ON – Released Tuesday, November 7th, the independent [Coller FAIRR Protein Producer Index](#) recognizes farmed-raised salmon producers as global sustainable food leaders. By all indicators, salmon farming is the most environmentally efficient large-scale animal production on the planet: lowest fresh water use, lowest carbon emissions, smallest environmental footprint.

The Coller FAIRR Index is the world's only comprehensive assessment of publicly-traded animal protein producers on critical environmental, social and governance issues. *Seven of the top ten companies are salmon farming companies, and the top and third positions are held by Mowi and Grieg Seafood*, both of which have operations on both coasts of Canada. Canada's two other major salmon producers, Cermaq and Cooke Aquaculture, are privately-held companies and not included in this Index, but are globally recognized in other leading sustainability indices.

"Canadian salmon farming companies are dedicated to a healthy planet and a healthy future for all people," said Timothy Kennedy, President & CEO, Canadian Aquaculture Industry Alliance. "We are proud to see this reflected in the global ranking of salmon producers among the most sustainable protein producers on earth. Canadian salmon farmers intend to lead in sustainability for years to come, and we have ambitious performance targets set out in our [National Salmon Farming Commitments](#) that will propel us toward our goal of becoming the world's best producers of farm-raised salmon."

Canadian salmon farming will play an essential role in meeting the global seafood supply needs for sustainable, nutritious, low-carbon footprint protein. Within Canada, farm-raised salmon is the most popular seafood choice by a large

margin, making up almost 4 of 10 seafood meals for Canadians. Currently, farm-raised salmon accounts for an overwhelming 97% of all salmon harvested here, over 86% of all farm-raised finfish, and almost 80% of the value of all farm-raised seafood.

"There is such an incredible opportunity for this innovative food producing sector in Canada," continued Kennedy. "In addition to playing a leadership role in environmental stewardship, Canadian salmon farmers are producing a healthy and secure food, creating year-round jobs, and they are opening new economic opportunities for rural, coastal and Indigenous communities."

For more information about salmon farming in Canada, please visit www.lovesalmon.ca.

About Canadian Aquaculture Industry Alliance

Canadian Aquaculture Industry Alliance is the national association that speaks for Canada's seafood farmers, representing their interests in Ottawa and internationally to regulators, policy makers and political leaders. CAIA members generate over \$5 billion in economic activity, \$2 billion in GDP, and employ over 20,000 Canadians delivering a healthy, growing and sustainable seafood farming sector in Canada. www.aquaculture.ca.

About the Coller FAIRR Index

Established by the Jeremy Coller Foundation, the FAIRR Initiative is a collaborative investor network that raises awareness of the environmental, social and governance (ESG) risks and opportunities brought about by intensive livestock production. More information: <https://www.fairr.org/tools/protein-producer-index>.

Source: <https://aquaculture.ca/news-releases/2023/11/8>

ASL Energy's Mobile HDPE Recycling: A Sustainable Solution for the Aquaculture Industry



By: Ophelia Fernandes, Quality and Sustainability Coordinator, ASL Energy

In a world grappling with the challenges of plastic waste, ASL Energy has embarked on an innovative journey that not only addresses environmental concerns but also paves the way for a more sustainable future.

Plastic pollution is a worldwide issue that affects all industries. Millions of individuals depend on the aquaculture industry for provision of seafood. However, like all food production systems, the aquaculture sector is trying to innovate in the way it manages plastic materials. The industry faces the challenge of reuse or responsible disposal of the High-Density Polyethylene waste generated from feed pipe and salmon farming cages after they have been broken down. ASL Energy tapped into this opportunity with the innovative concept of Mobile HDPE Recycling. Our Mobile HDPE Recycling project showcases the power of circular economy principles and our commitment to making a positive impact on the environment.

Mobile HDPE Recycling emerged as a result of our engagement with the aquaculture industry in rural Newfoundland. We saw an opportunity to make a difference by bringing recycling equipment to the waste stockpiles, thereby, reducing the ecological footprint and creating a revenue stream for ASL Energy.

Our approach is twofold: First, by recycling HDPE plastics collected from the aquaculture industry, we contribute to

environmental preservation. We will not only divert 2800 metric tonnes of HDPE from landfills in the first year alone but will also minimize the environmental impact of plastic waste. Our process of shredding and chipping the HDPE pipes at the source itself reduces the need for transportation by 80%, further minimizing the carbon footprint.

Second, our Mobile HDPE Recycling project supplies a renewable resource as a raw material for ASL's international supplier of composite matting and for our futuristic goal of having a Canadian based manufacturing facility for a new Composite Airport System Product currently in research and development. Through this venture, we aim to reduce dependence on virgin materials by up to 30%. The benefits extend beyond our company, as it aligns with the broader goal of promoting sustainable practices across industries.

We are driven by a deep commitment to the environment and communities, prioritizing innovation, and sustainability. Our groundbreaking Mobile HDPE Recycling venture exemplifies our pioneering spirit, leading the industry in sustainable practices. By reducing plastic waste, creating a renewable resource, and championing sustainability, ASL Energy sets a precedent for responsible business practices.

For more information, please email: info@ASL.Energy



Chef Watson and MP Clifford Small proudly demonstrating Chef's beautiful mussel dish that he prepared on stage at Cold Harvest 2023.



The Delta Chefs were top notch again at CH23.

Cold Harvest 2023, NAIA's 28th Annual Conference and Trade Show took place September 5 – 7 at the Delta Hotel in St. John's with more than 350 delegates in attendance.

Chef Watson prepared a delicious smoked salmon and NL organic blue mussel dish on stage during the opening reception and greetings were provided by Member of Parliament Clifford Small. Of course, this was followed by samples of delicious Newfoundland farmed seafood prepared by the Chefs at the Delta Hotel.

The sessions covered a large number of very important topics such as: Materials Management, Marine Safety, Emerging Aquaculture Leaders, Government Services and Regulations, Climate Change Adaptation, Innovation in Aquaculture Feeds and Feeding, Alternative Aquaculture Species, Artificial Intelligence, Shellfish Aquaculture, and Innovation in Finfish Aquaculture.

A networking event took place on day two at O'Reilly's on George Street where again, guests enjoyed Newfoundland

farmed seafood and awesome music by the Brew Masters, featuring NAIA's own, Jamie Baker as lead singer.

The closing gala on the last night of the conference featured inspirational speeches by the former Lieutenant Governor Judy Foote and the Minister of Fisheries, Forestry and Agriculture, Elvis Loveless, who both spoke of their belief in the industry. Lieutenant Governor Foote said, "As most of you know, aquaculture in our province is in Notre Dame Bay, Green Bay, the Connaigre Peninsula, Bay d'Espoir, Fortune Bay and Placentia Bay. I know that you would be hard-pressed to find a community in either of those areas that has not benefited from the industry, and not just economically. The social conscience of the players in the industry is evident throughout the areas, and for that, I applaud you."

NAIA would like to send special thanks to the volunteer Steering Committee and Program Committee, sponsors, exhibitors, and attendees for your continued support and participation.



The Pennecon team and guests at Cold Harvest 2023.

28th Annual Conference and Trade Show

Delta Hotel, St. John's, NL | September 5 - 7, 2023



A FEW SPEAKERS,
EXHIBITORS & GUESTS





11th Annual High School Graduate Scholarship

For the past ten years, NAIA has been awarding annual scholarships to Grade 12 graduating students from across Newfoundland and Labrador. These annual scholarships are awarded to students pursuing a post-secondary

education and are based on their academic achievement, references, level of community involvement and volunteerism. This annual competition is made available with proceeds raised at annual Dr. Joe Brown fundraisers.

Congratulations to this year's recipients: CJ Goods, James Hawco and Marcus Hoskins, who were each presented with a scholarship in the amount of \$500 towards their future studies. We would like to thank all who applied.



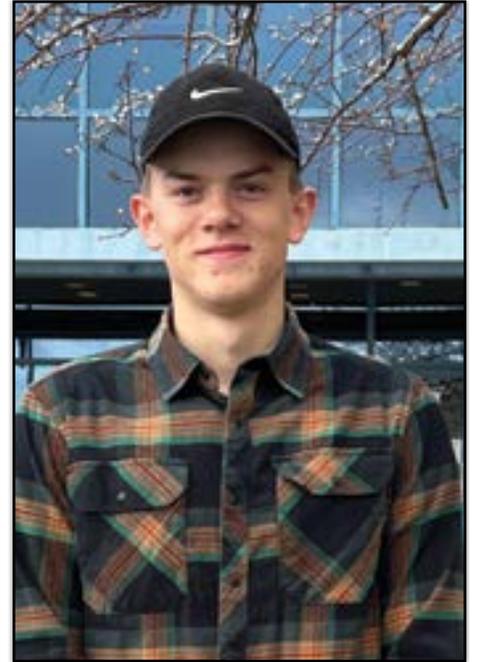
CJ GOODS

John Watkins Academy, Hermitage, NL
Marine Diesel Mechanics
Marine Institute



JAMES HAWCO

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NAIA Community Outreach Continues Across the Province



Darrell Green, NAIAs R & D Coordinator demonstrating the mussel socking system used in NL to students at the College of the North Atlantic in Stephenville.



Darrell Green discussing the many career options with the students at Exploits Valley High in Central NL.



Students at Exploits Valley High in Grand Falls Windsor using the VR to view the salmon and mussel videos in 360.

NAIAs staff Darrell Green, Research and Development Coordinator and Roberta Collier, Community Outreach Coordinator, spent some time on the west coast and central part of the province in October. They visited Corner Brook Regional High School and Exploits Valley High School in Grand Falls Windsor where they presented to over 250 students, (twelve groups) from Biology 2201, English 3200, Occupational Health and Safety 3203, Science 2200, and Career Ed 2202 (French and English) classes. They also travelled to Stephenville where they met and presented to the students in the Orientation to Trades and Technology class at the College of the North Atlantic, Bay St. George campus. The presentations focused on careers in aquaculture and the many job opportunities across the province in both the finfish, shellfish, and service supply industries.

VR headsets were also used to demonstrate virtual 360 on-site salmon and mussel tours. The students seemed to really enjoy it! Special thanks to the staff of the schools that made our visits possible and to the students for allowing us to be a part of their classrooms for the day!

Of course, the trip to the west coast would not have been complete without a tour of the Northern Harvest Smolt salmon hatchery in Stephenville. NAIA would like to thank Natasha and Paul for bringing us through and showing us what's new at the hatchery since our last visit and letting us in on innovations still to come.



Roberta Collier, NAIAs Outreach Coordinator presenting on careers in aquaculture to students at Corner Brook Regional High School.

NAIA Participates in Canada's Great Kitchen Party in St. John's, Newfoundland

Chef Steve Watson joined with NAIA staff on October 19th to participate in Canada's Great Kitchen Party St. John's culinary event at the St. John's Convention Centre. Chef Watson served up his famous Newfoundland organic blue mussels prepared in a delicious garlic cream sauce to approximately 300 guests.

Held each year in various Canadian cities, Canada's Great Kitchen Party is Canada's most renowned culinary

competition. Each event is a celebration of food, wine and music, where guests experience a culinary showdown, with local chefs offering their top dishes, in hopes of being the regional champion and the opportunity to compete for the title of Canadian Culinary Champion. The competition was recently awarded LUXlife Magazine's "Best Annual Celebration of National Gastronomy in North America."

The competition in St. John's saw Kyle Puddester from Fork Restaurant take the

Gold medal, while Nick Walters from The Merchant Tavern took Silver and Brennen Tower-Bowering from Sláinte took the Bronze.

Congratulations to all the winners and thanks to everyone who stopped by the NAIA booth - we had an awesome evening!

To learn more about the Great Canadian Kitchen Party, visit: <http://greatkitchenparty.com/ca/>

CANADA'S HEALTH BEGINS IN THE KITCHEN!





Grieg Seafood NL and Quinlan Brothers Celebrate a Milestone in Bay de Verde



A sense of optimism was palpable during the November 21st reception at the Quinlan Brothers plant in Bay de Verde, where industry stakeholders gathered to celebrate the first salmon from Placentia Bay being processed to be sent to market.

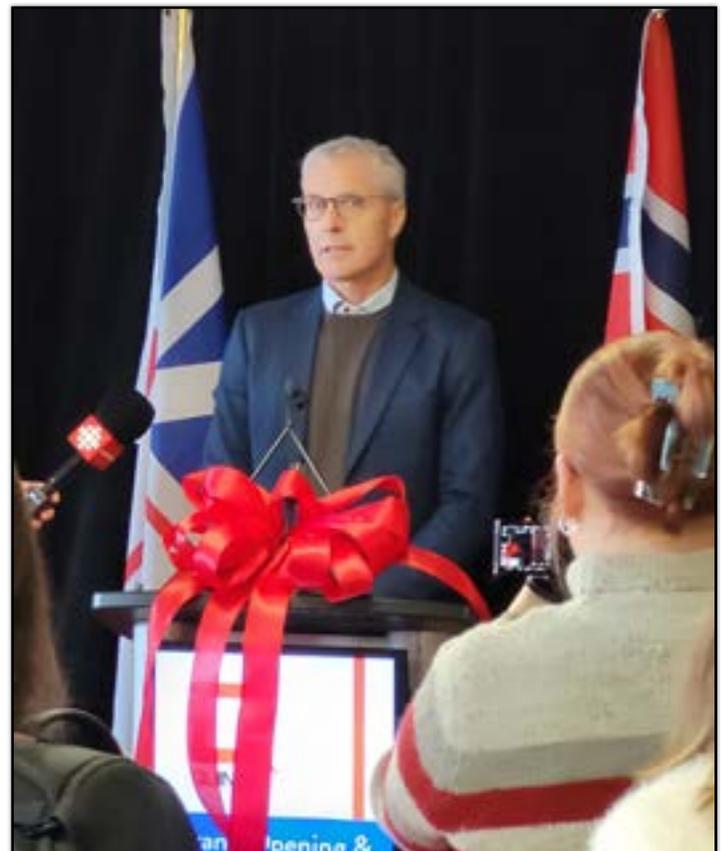
Officials from Grieg Seafood and Quinlan’s were on hand for the event, including Robin Quinlan, President of Quinlan Brothers Ltd., Per Grieg, Chairman of the Board of Grieg Seafood ASA, Andreas Kvame, CEO of Grieg Seafood ASA and Knut Skeidsvoll, Managing Director of Grieg Seafood NL.

Per Grieg said “We have made a partnership now with Quinlan Brothers, and we will develop and support that partnership, and also with other suppliers in the industry here; it’s very, very important for us.”

Also in attendance were dignitaries from the Government of Newfoundland and Labrador, Fisheries and Oceans Canada/ Atlantic Fisheries Fund, Atlantic Canada Opportunities Agency, Miawpukek First Nation, and the Royal Norwegian Embassy in Ottawa.



Robin Quinlan cutting the ribbon to officially open processing operations.



Per Grieg, Chairman of the Board of Grieg Seafood ASA.



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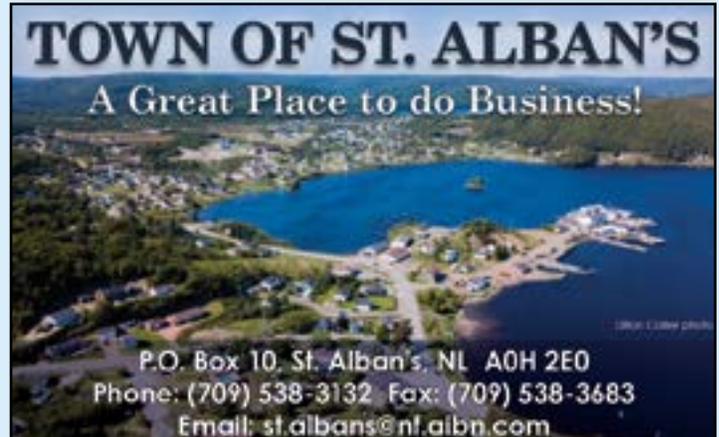
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For more information on NAIA Membership Benefits, or to become a member please contact Roberta Collier roberta@naia.ca or visit www.naia.ca



Aquanor: "The Industry's Most Important Meeting Place"

In August, Darrell Green, NAI's Research and Development Coordinator, attended the 2023 Norway Trade Mission.

The mission consisted of networking meetings, industry site tours and a visit to the AquaNor Trade Show.

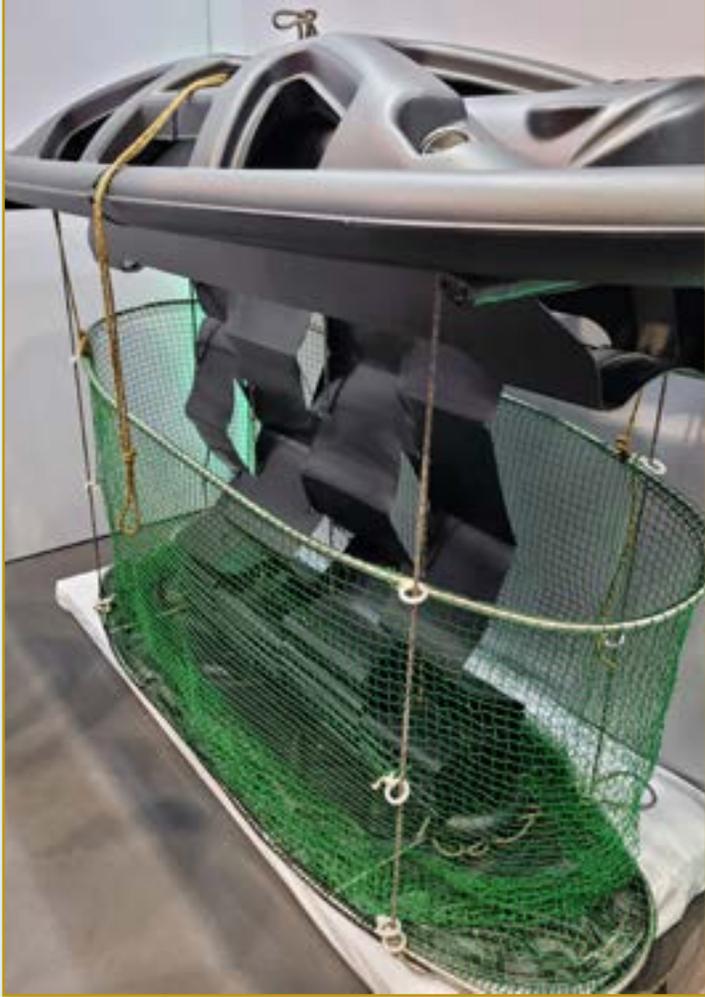
Industry tours included visits to pump manufacturing facilities, silage system manufacturing facilities, a salmon hatchery and associated hatchery waste recovery company, marine closed-containment installations and one of the world's largest on-land flow through salmon farms.

At the AquaNor exhibition, the latest aquaculture technology was on display, including the latest in cage and net technologies, containment technology and conceptual designs, monitoring and control equipment, software and data management solutions, fish health and feeding technology and much more. The trip was also a good opportunity to reconnect with some of NAI's member companies such as Pharmaq, ScaleAQ, Gael Force, BioRetur, FishGlobe, BlueGreen Group, Akva and MarineNav.

The 2023 Norway mission was organized by the Atlantic Canada Fish Farmers Association and was attended by over 50 delegates within the Atlantic Canada delegation.



The staff of Ydra were front-and-centre at their booth at AquaNor 2023, displaying some of their pumps, including the TERMINATOR silage grinder pump (above).



The SeaNest cleanerfish hide system with optional recapture attachment is a compact and easy-to-install solution that could hold promise for use on salmon sites in NL.



ScaleAQ had impressive cage and feed barge displays at the Skansen – AquaNor's dockside exhibit space.



Cooke Aquaculture staff Jeff Nickerson and Jennifer Hewitt visit the Scale AQ booth. In combination with their partner Moen Marin, ScaleAQ won the award for the best booth!

CONTINUED NEXT PAGE

MORE AQUANOR 2023



Darrell Green on the bridge of the FDA MIMMI, a hybrid workboat specially equipped to service the aquaculture industry.



This BioRetur facility receives sludge from the salmon hatchery next door and stabilizes it for use in fertilizer products.



Framo's SR2000 flow generator is used to pump large volumes of water vertically for salmon cages which use lice skirts. The innovative design features a permanent magnetic motor and water-lubricated bearings.



A tour of the control room onboard FishGlobe which has successfully reared 12 batches of post smolt for delivery to cage sites.



An innovative adaptation of the LiftUp system by Framo now allows for the collection of feces and uneaten feed on salmon farms.



Gael Force had their latest innovative cage and feeding system components on display at their booth at AquaNor.



NAIA member company MarineNav from PEI, were at AquaNor along with their Norwegian distributor SeaSpecion.



The Halo system by AquaRobotics offers an alternative to traditional net cleaning that is said to be cheaper and gentler on nets.



Salmon Evolution is an on-land seawater hybrid flowthrough grow out facility that we learned uses an astonishing 250 cubic meters of water per minute at 60 percent reuse!



The Canadian delegation toured the first installation of BlueGreen's new floating closed containment system, the Maine Donut. Photo: ACFFA

A Tribute to Frances Kealey



Frances Kealey, at 77 years of age, passed peacefully away with her family by her side on November 17th. Wife of John Kealey for 56 years, together they shared eight children and six grandchildren.

Fanny and John, pioneers in Newfoundland and Labrador aquaculture, shared NAI's Aquaculturist of the Year award in 2017. Fanny also received the "Diamond II Jubilee Medal", that same year.

In 1977, in collaboration with the Bay d'Espoir Development Association, they submitted a proposal to the Honorable Brian Peckford, Minister of Mines and Energy for the culture of cold water finfish. Two years later the Newfoundland Salmon Growers Association (NSGA) was awarded funding to complete a feasibility study which led to the establishment of the Bay d'Espoir Hatchery in 1985 and effectively enabled the start of salmonid farming in the province.

Over the years John and Frances operated their own farms raising salmon, steelhead trout and arctic charr in the Bay d'Espoir region. Frances was very involved with community and business affairs over the year's and also served on the Board of Directors with the NSGA for many years. Fanny will be truly missed by all that knew her.



Photo L to R: Frances and John Kealey at the NAI Awards Ceremony when they received their Aquaculturist of the Year Award in 2017.



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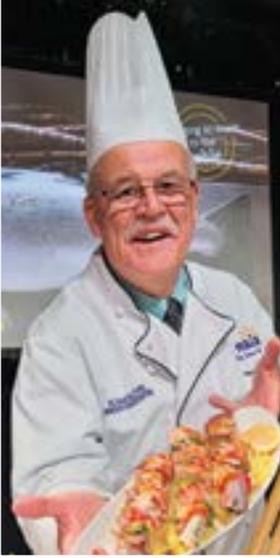
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COOKING WITH **Chef Steve Watson**

Broiled Newfoundland Steelhead Trout with Peppers and Broccolini

Ingredients:

4 x 6 oz. Steelhead trout fillets (skin on)
2 tsp. Extra virgin olive oil
1 Lemon, sliced
1 of each: Red, yellow and orange pepper, cut into 4, and grilled
Bunch Broccolini, steamed
Salt and pepper

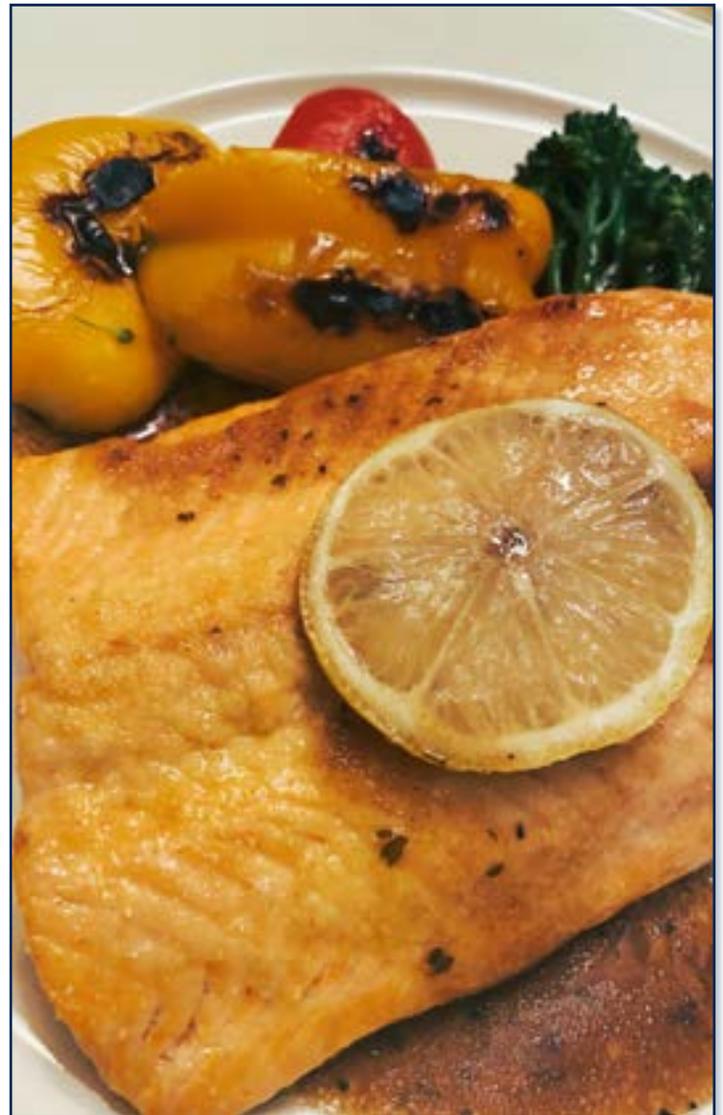
Balsamic Vinaigrette

$\frac{3}{4}$ cup of olive oil
 $\frac{1}{4}$ cup of Balsamic vinegarettte
1 tsp. Honey
 $\frac{1}{2}$ tsp. Dijon mustard
Salt and pepper to taste

In a mason jar, mix the ingredients together.

Method:

Preheat oven broiler on high heat. Preheat a sheet pan, add parchment paper, and brush it with olive oil. Add fillets and top with a slice of lemon, salt, and pepper. Broil on the top oven rack on high heat for 5 minutes, being careful not to overcook. Thinner fillets (1/2 inch) probably won't have to be flipped, but thicker fillets (1 inch) should be carefully turned halfway through cooking time. Place fillets on serving plate and garnish with grilled peppers and steamed broccolini. Drizzle with balsamic vinaigrette and serve. Enjoy!



Seafood Broiling Tips:

Broiled fish is really delicious, especially if you season the fish well before cooking. Be sure to preheat the broiler before adding the fish, and make sure the fish is 4-6 inches away from the broiler. Watch carefully to make sure the fish isn't browning too much.

NL Safety Consortium Brings Safety Professionals Together to Share Expertise

By: Amy Fitzpatrick - Marketing Communications Manager, Canadian Manufacturers & Exporters

Effective workplace health and safety is about consistency, commitment, culture, and leadership. That was the message at Made Safe NL's most recent Safety Consortium event.

The consortium includes manufacturing and processing safety professionals, business owners, and stakeholders—including fish processors. Members gather to share and exchange ideas and work together toward a unified goal to improve health & safety in our sectors.

At the most recent event, Mark Balsom, Corporate QHSE Manager at The Cahill Group—a leading construction company operating across Canada and headquartered in St. John's—provided an inside look at a health and safety program that has really worked for their



“THE SAFE STEPS PROGRAM HAS BEEN A VERY EFFECTIVE TOOL WE USE TO ACCOMPLISH OUR GOALS.”

**Mark Balsom,
The Cahill Group**

organization.

Balsom shared the evolution of their Safe Steps program. The program arose from a need for a tailored approach to health and safety education and awareness due to the construction industry's rotating workforce. Their central goal was to ensure every worker got home safe every day.

A significant achievement underscored by Balsom was the program's impact on reducing the Total Recordable Injury Frequency (TRIF). The TRIF dropped from 2.58 in 2008 to 0.49 currently, showcasing the program's positive influence over the past 10 years.

Balsom explained the key to Cahill Group's success, “It's about consistency, commitment, culture, and leadership. We're always there to remind and communicate the importance of safety on our worksites.”

Cahill Group's Safe Steps program includes various promotional products that can be used on worksites, but one of the most valuable is a pocket-sized booklet each employee receives during orientation.

The booklet is both water and oil-resistant. It outlines safe work practices, human resources policies, and reinforces Cahill Group's commitment to the safety of each employee.

“We understand the need to regularly reinforce the message and adapt to new workplace health and safety trends and patterns. The Safe Steps program has been a very effective tool we use to accomplish our goals,” explained Balsom.

The Made Safe NL Safety Consortium is free to join and meets every four weeks. Workshops and guest speaker events are offered in a hybrid format—in-person and online—to ensure safety-minded professionals across the province are able to attend to learn and network.

Upcoming consortium guest speaker and workshop topics include:

- Prime: Workplace NL's employer incentive program
- Early and Safe Return-to-Work Practices
- Workplace Harassment and Psychological Safety in the Workplace
- How to Improve Safety Culture in the Workplace,
- and more.

To join, visit www.madesafenl.ca/consortium/ or email info@madesafenl.ca.



Steaming Towards a Greener Marine Industry with TriNav's E-FINN Hull

By: Nick Travis, TriNav Group of Companies

TriNav Marine Design's new E-FINN hull has re-envisioned the classic Nova Scotia lobster boat design to assist the fishing and aquaculture industries in modernizing their fleets for a cleaner, greener future.

The award-winning E-FINN features a set of small but significant changes, such as an elongated bow that is faired into the hull, finer hull lines, a reimagined air foil-style rudder and a clean hull design that recesses exterior features like keel cooler and transducers. The end result of all these tweaks adds up to 20 per cent in fuel savings at no more cost to the buyer, according to the Director of TriNav Marine Design, Rick Young.

"The hull itself doesn't cost any more to build," said Young. "It's still the same hull, you're just doing things a little differently. So, year over year, if you look at a 20-year mortgage on a vessel, that's a lot of fuel saved and a lot of CO₂ that's reduced from going into the atmosphere."

While the E-FINN hull design has been utilized in the building of 49-foot fibre-glass vessels, Young said the design is modular, allowing the E-FINN design philosophy to be applied to vessels of all sizes and construction materials.

"The ideas of the bow and the stern and this clean hull approach can be applied to any size, actually," said Young. "We're looking at doing some preliminary work now on an aquaculture support vessel, probably of steel construction, that would have all of the E-FINN features. For example, the E-FINN



hull can easily be adapted for any vessel type, like aquaculture. With a large working deck, great hull performance and stability characteristics, the E-FINN hull makes a great choice for aquaculture vessels."

Young added that installing a diesel-electric hybrid propulsion system can bolster fuel efficiency an additional 15-20 per cent over the current 20 per cent the E-FINN hull currently saves.

"Most of our time is spent on hydrogen cells and hydrogen propulsion, but

the practicality of that is too far out. Now, we're going to pay more attention to diesel-electric hybrid propulsion systems," said Young. "The propulsion system will cost more because it will have batteries and expensive switching gear, but you have to plan these projects over 20 years. This is not a five year thing. Anything with energy efficiency has to be looked at over a long period of time, and ultimately in 20 years from now, this will be just normal. Everybody will be doing it."



Couturier on Culture

Aquaculture Labour Market and Trends

Cyr Couturier is marine biologist, aquaculture scientist and chair of the MSc Sustainable Aquaculture program at the Fisheries and Marine Institute of Memorial University. He has 35+ years of experience in applied research and development, training and education in aquaculture and fisheries. He is a Board and Executive member of several farming & development associations, including CAIA, CFA, CAHRC, HORIZON TNL, and is a past president of AAC, CAIA, and NAIA. He has worked in aquaculture and fisheries development in over 18 countries. The views expressed herein are his own. Contact: cyr@mi.mun.ca or follow on Twitter @aquacanada

Labour Market Information

Almost every farmer in Canada, whether on land or sea, is finding the labour market very challenging. The Canadian Agricultural Human Resource Council (CAHRC) has just completed its third labour market forecasting exercise in the past decade, and the results are not encouraging.

The annual labour gap or vacancy rate in 2022 was 7.4% for all commodities, and is well above the national average for all sectors of the economy at 5.9% (see Figure 1).

As it turns out aquaculture was a little

lower than the national average but not by much! As a commodity the labour shortages were felt by 30% of aquaculture employers across the country (see Figure 2), and the trend continues till today. All one has to do is look at weekly job availability summaries across Canada and there are dozens of unfilled positions available regularly (personal observation).

This shortage actually meant the agriculture sector lost \$3.5 billion in sales due to labour vacancies; the number for aquaculture is in the \$10's of millions.

This trend is expected to continue to

2030 if solutions are not found.

There is an increased reliance on foreign workers (only TFWP or SAWP programs, and not immigrants) in almost all sectors of agriculture, not only at the farm level but also in the post-harvest and supply and service sectors.

The reasons for the labour gaps and shortages are multifold, the top 6 reasons are provided in Figure 3 below. However aquaculture typically fares a little better than the national average, the barriers to recruitment and retention are similar in reality.



Figure 1: Agriculture labour market challenges in 2022 (Source: CAHRC LMI Nov. 2023).

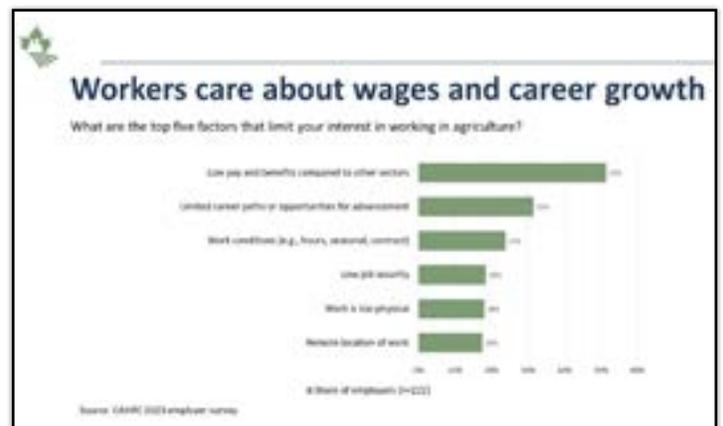


Figure 3: Trends in worker perceptions of labour in agriculture. (Source CAHRC LMI 2023).



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WHO WE ARE

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OUR VISION

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OUR MISSION

At 360 Marine Ltd., we are passionate about the aquaculture and marine industry, and we are committed to providing the highest level of service to our clients.