



WINTER 2022

THE COLD HARVESTER

NEWFOUNDLAND AQUACULTURE

Member Updates

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and World Aquaculture
North America Moving Ahead**





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AUGUST 15-18, 2022

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AQUACULTURE CANADA AND WAS NORTH AMERICA 2022



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Cover photo credit: Jonathan Watson

The Newfoundland and Labrador Aquaculture Industry Association (NAIA) is a member-based organization that represents the interests of seafood farmers and their suppliers in Newfoundland and Labrador. We are passionate advocates on behalf of our members to facilitate and promote the responsible development of the aquaculture industry.

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Sheldon George - Cold Ocean Salmon

Vice President / Salmonid Representative
Jason Card - Mowi Canada East

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Danny Boyce - Dr. Joe Brown Aquatic Research Building, (JBARB) Memorial University of NL

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At-Large Representative
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Message from the former President and Chair of the Board

Jason Card

Greetings to all Cold Harvester readers! As we begin a New Year of farming activity, we start it with a new Executive Director, and so I want to take this opportunity to formally welcome and introduce Jamie Baker to the membership. I first met Jamie many years ago when he was a reporter who was passionately dedicated to covering the seafood industry, especially during his time with the CBC Radio program “The Fisheries Broadcast.” In addition to his time as a prominent provincial journalist, he has also held leadership positions in the areas of communications and industry advocacy, and I am very excited to now see him using all his experience, connections, and industry insight to benefit aquaculture in Newfoundland and Labrador. I wish him all the best, and I invite members to connect with him in the coming weeks.

The welcoming of our new Executive Director also warrants the thanking of his predecessor, and so I also want to take this opportunity to recognize Mark Lane for his fierce and tireless dedication to representing the industry’s interests. His time as Executive Director was one of intense change and development for our industry, and his efforts to grow our membership base, undertake beneficial advocacy and research projects, and enhance our public facing points of contact such as our website, social media, and conferences will always be remembered and appreciated. Mark has moved on to an exciting new role with a philanthropic organization called The Northpine Foundation, and I’m sure he will do great things there.

The current COVID reality we find ourselves in will require us to continue conducting much of our business virtually for at least the first part of this year, but please know that your industry association remains at the ready to address your needs whenever you want to reach out. I am still optimistic that we will be able to proceed with the Aquaculture Canada and WAS North America 2022 Conference on an in-person

basis in August of this year, and you will be kept apprised of the status of the event as it draws closer. It is both a point of pride and a tremendous opportunity that global leaders in aquaculture will look to Newfoundland and Labrador this year as a place to discuss the present and future of the industry, and I hope you all take your chance to make the most of it. I know NAIA staff have been working very hard behind the scene on this, and many other projects to benefit our membership, and I thank them for everything they do.

I will close by wishing all of you very a safe and prosperous 2022. I very much hope that toward the end of this year we will once again be coming together in person, and that we will have many successes to celebrate when we do.

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NAIA Welcomes New Executive Director

DECEMBER 7TH, 2021 – Today, the Newfoundland and Labrador Aquaculture Industry Association welcomed the arrival of its new Executive Director, Jamie Baker. Mr. Baker has held leadership positions in the areas of communications, news media, and industry representation – always with a focus on the seafood sector. He will now put his many years of experience to use as the foremost advocate for the growth of an aquaculture industry that is generating jobs, economic activity, and hope in rural coastal communities through sustainable sea farming.

The Newfoundland and Labrador Aquaculture Industry Association (NAIA) is a member-based organization that represents the interests of seafood farmers and their suppliers in Newfoundland and Labrador.

“I am very excited to see Jamie begin as Executive Director for NAIA, and I believe he joins the industry association at a key point in our industry’s development. Global seafood powerhouses have established or grown their finfish operations in the province recently, while an exciting consolidation continues in the shellfish sector that will make that sector stronger than ever. I have every confidence that Jamie will make sure the positive impact of sustainable aquaculture is effectively communicated and understood in this province and abroad, and I wish him every success in this role.”

NAIA President Jason Card

As established in the Provincial Government’s “The Way Forward on Aquaculture,” the province and industry have a shared goal of reaching 50,000 tonnes of salmon production and 10,750 tonnes of mussel production.

“I am excited to join the team at NAIA, and to be part of an industry that has so much potential for positive growth. Aquaculture plays such a critical role to both the province’s



economy, particularly in rural areas, and also in terms of food security. I have always been a strong proponent for responsible marine resource development, so working with the province’s aquaculture industry is really a perfect fit and a tremendous opportunity. I share NAIA’s vision of setting the standard for responsible aquaculture and its mission to promote opportunities for aquaculture in Newfoundland and Labrador.”

NAIA Executive Director Jamie Baker

Mr. Baker joins the aquaculture industry association after the departure of Mark Lane, who has taken on an exciting new role with a philanthropic organization - The Northpine Foundation.

“Since 2014, Mark has been a proud advocate for aquaculture in Newfoundland and Labrador, Canada, and abroad as NAIA’s Executive Director. Throughout his time with our association he was dedicated to representing the best interests of our industry’s diverse stakeholders on a broad range of issues. NAIA’s membership thanks him for his great work, and wishes him all the best.”

NAIA President Jason Card

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Jamie Baker

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Message from Executive Director

Jamie Baker

Hope springs eternal,” as they say, and nowhere is that adage more appropriate than at the outset of a brand-new year. Hope is a good thing. Hope is a needed thing.

The past two Covid-addled years have been tough on all people and industries on a local and global scale. Aquaculture is, of course, no exception.

But despite the challenges of recent times, I strongly believe aquaculture has demonstrated incredible resolve and success in the face of all obstacles. And we now find ourselves in a position where aquaculture carries with it the kind of hope for Newfoundland and Labrador – and Canada for that matter – that very few, if any, industries can boast, at a time when we really need it.

The industry in this province generates upwards of \$250 million annually in product and creates some 1,500 direct jobs. And that’s just the immediate benefits, never mind the related spinoff opportunities.

The key thing: Most of those benefits pour into rural communities. Of course, those numbers, while impressive, are a fraction of what we could see given the incredible growth potential. And really, which industry right now in this province besides aquaculture (save for maybe tourism in a non-pandemic year) brings both direct benefits to rural communities AND has incredible growth potential?

But it’s not just about economics. Not at all.

One of the things this world desperately needs now and in the future is improved food security, particularly when it comes to healthy and affordable protein. If the pandemic (during which aquaculture employees were appropriately identified as essential workers) taught us anything it’s the importance of solid food access and supply, and what better way to help address that than with aquaculture enhancement?

From there, perhaps the biggest arrow in the aquaculture quiver is the fact that all this happens with a miniscule environmental impact. The industry is a model of modern sustainability and come with the smallest carbon footprint of any traditional,

major protein producing sector. Aquaculture needs significantly less feed, fresh water and considerably less space to produce the same amount of food as terrestrial farming methods.

Just on the surface of it, it is clear the aquaculture industry has a lot to be proud of: Continuing to provide high level, meaningful employment, diverse economic benefit, and critical food security, all built on a foundation of incredible, measurable sustainability through the darkest days of the pandemic has been no mean feat.

Are there challenges ahead? Yes, of course there are, the same as with any industry. Fortunately, we are in a great place with great people and a wealth of expertise and determination to meet and overcome those challenges. The future can be very bright if we get everyone in the boat pulling on the same oar with the aim of achieving the production levels established by “The Way Forward on Aquaculture.”

I’m excited to be here at NAIA at this remarkable time in our history, and to be part of a sector that has so much clear potential for positive, responsible growth and sustainable development.

SPECIAL THANKS – MARK LANE

It is fitting that I also take a moment to say a special thanks to Mark Lane, NAIA’s former Executive Director, who has moved on to a wonderful new role with The Northpine Foundation, serving as their Impact Manager for Rural Newfoundland and Labrador.

I got to know Mark immediately when he joined NAIA back in 2014 and I was hosting the Fisheries Broadcast; it was a time when there was a lot happening in the world of Aquaculture. He was an excellent industry advocate and a great person to deal with, and he did a lot of great things for the industry.

On behalf of all the folks at NAIA I wish to thank him for all his hard work and dedication over his seven years here, and we all wish him all the best in his new role.

AQUACULTURE CANADA AND
WAS NORTH AMERICA 2022



AUGUST 15-18, 2022
ST. JOHN'S, NEWFOUNDLAND
AND LABRADOR, CANADA

St. John's Set to Host World Aquaculture Event in 2022

AQUACULTURE CANADA & WAS NORTH AMERICA 2022, AUGUST 15TH-18TH

(ST. JOHN'S, NL, CANADA) – The Aquaculture Canada and WAS North America 2022 in-person conference is officially set to take place August 15-18, 2022, at the St. John's Convention Centre, St. John's, Newfoundland, Canada.

A partnership between the Aquaculture Association of Canada (AAC), World Aquaculture Society (WAS) and the Newfoundland Aquaculture Industry Association (NAIA), the conference will bring key global aquaculture players together in Newfoundland and Labrador.

“Event organizers and industry partners are thrilled to be working together to bring the Aquaculture Canada and WAS North America 2022 conference to Newfoundland and Labrador, a province that has become a global beacon for responsible aquaculture growth and opportunities,” said John Cooksey, WAS Conference Manager. “We are planning an exciting four days of events in St. John's for industry participants from all parts of the sector.”

With eight conference rooms, the three-day conference program will include all aspects of aquaculture from farm to table (visit www.was.org and click the event logo to view the various session topics).

The trade show has a few booths remaining – but with excitement at an all-time high, more than 90 per cent of the exhibition space has already been sold. All exhibitors will have an opportunity to host their staff, customers, and conference delegates at the trade show.

Event organizers wish to recognize and thank the sponsors (to date) for the event, including Diamond sponsors: Poultry Protein & Fat Council, and TD Commercial Banking. The lanyard sponsor is BDO Canada. Gold sponsors: Newfoundland Styro, and Pharmaq; Silver sponsors: Badinotti and Skretting; Bronze sponsors: City of St. John's, Advanced Aquacultural Technologies, Barry Group Inc., EWOS, Hoskin Scientific, Pennecon, and Steinsvik. We also thank the WAS premier sponsors Blue Aqua, Kemin, USSEC, MSD Animal Health, and Zeigler.

Information regarding commercial exhibitor, sponsor, or registrations can be found at <https://www.was.org/meeting/code/WANA2021> To learn more about exhibiting, please contact Joanne Burry - jmburry@nl.rogers.com, and sponsorship: Roberta Collier - roberta@naia.ca or Mario Stael – mario@marevent.com





NAIA 28th Annual General Meeting

NAIA's 28th Annual General Meeting took place via zoom on Thursday, February 10, 2022, with 35 members in attendance. Special thanks to the outgoing volunteer board members for your support and dedication.

HERE IS YOUR NEW BOARD OF DIRECTORS FOR 2022 – 2023:

President / Salmonid Representative
Sheldon George - Cold Ocean Salmon

Vice President / Salmonid Representative
Jason Card - Mowi Canada East

Treasurer / At-Large Representative
Danny Boyce - Dr. Joe Brown Aquatic Research Building, (JBARB) Memorial University of NL

Secretary / Shellfish Representative
Laura Halfyard - Connaigre Fish Farms Inc.

Shellfish Representative
Terry Mills - Norlantic Processors Inc.

Shellfish Representative
Juan Roberts - Badger Bay Mussel Farms Ltd.

Salmonid Representative
Knut Skeidsvoll - Grieg Seafood Newfoundland

Alternate Species Representative
Cathy Follett - Marbase Cleaner Fish/Amar Canada

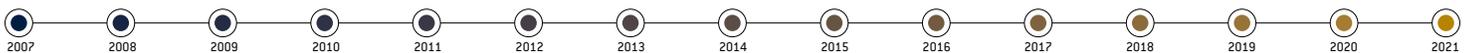
At-Large Representative
Jonathan Gagné - Entreprises Shippagan Ltd.

At-Large Representative
Cyr Couturier - Marine Institute of Memorial University of NL

For more information on the NAIA bylaws or membership, please email Jamie Baker, Executive Director at executivedirector@naia.ca or visit naia.ca



Staff Milestones



The NL Aquaculture Industry Association (NAIA) wishes to congratulate staff members **Darrell Green** and **Roberta Collier** on 15 years of dedicated service to the aquaculture industry in Newfoundland and Labrador.



Darrell is the Research and Development Coordinator with NAIA, based in the St. John's office. Having started with the organization in January 2007, Darrell manages critical and beneficial projects and planning for the organization and brings a strong science background to the table in support of NAIA member needs and priorities.



Roberta is the Community Outreach Coordinator, working out of the NAIA office in St. Alban's since March 2007. Roberta has a lifetime of involvement in aquaculture and is a leader in organizing many events for NAIA including the annual conference trade show, beach clean-ups, and industry recruiting, and is the driving force behind Cold Harvester Magazine, just to name a few.

On behalf of all members, NAIA extends appreciation and congratulations to Darrell and Roberta on their tremendous contributions to the aquaculture industry – past, present and future!



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the individual needs of our customers here in Newfoundland and Labrador.

We have always been enthusiastic about partnering with our customers across many areas of our business, whether it be the established salmon farmer or the hard-working local fishing community. This has enabled us to build lasting, trusted customer relationships, and we take a great source of pride in that.

We are a supply partner of a wide range of farm equipment, technology, and services, including feeding barges and systems, HDPE pens, underwater camera and LED technology, mooring systems, and more.

Our feed barge range includes the highly robust SeaFarm Steel Barge Range as well as the SeaFarmBase 400T Concrete Feed Barge, a live-aboard barge with SeaFeed feeding system and modern comfortable facilities for farm operatives. We have carried out installs of our SeaSight Camera range in Newfoundland and through our installation partners we have successfully delivered our SeaQureMoor mooring system too.

Our NS9415 accredited SeaQurePen is designed to withstand everything that the harsh marine environment will throw at it. Available in sizes up to 200m in circumference, it is designed and manufactured in line with a sector leading quality assurance programme, with the specialist SeaQureWeld system at its very heart.

Our business was established in Scotland in 1983, however, we opened our branch in Grand Falls-Windsor in May 2019 and since then our experienced team has been supporting customers right across the province.

The engine of our business has always been fuelled by the desire to design, manufacture, and supply equipment, technology, and services suited to the individual needs and challenges of our customers. We have been established as a key supplier for almost 40 years and we are proud of the range of robustly engineered equipment we build to cope with exposed farming conditions. We appreciate the importance of understanding and addressing

Our approach to work is consistent with integrity at its very core. We strongly value our customer relationships and strive to deliver a level of service and supply beyond expectation. Across our group of companies, multiple locations, and a highly skilled workforce of over 200 people, our proud heritage and strong values are embedded. We are steadfastly focused on our core values which provide us with a framework for everything we do.

Through close working relationships with our customers, we are knowledgeable about the salmon farming sector which we consider ourselves to be part of and we are aware of current issues and future challenges. Because of this, we embrace the opportunity with a high degree of professionalism, technical capability, and capacity to continuously improve our products and services to meet changing customer requirements in Newfoundland and Labrador where technologically intelligent solutions are required to tackle industry barriers to sustainable growth.



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Daniel J. Mahoney photo



Community Profile Marystown



Photo: Aerial view – Town of Marystown
Photo credits: AirScapes International Inc.

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.

Community: Marystown

Website: www.marystown.ca

Marystown is located on the Burin Peninsula approximately 306 km from St. John's and is situated on a wide harbour in Mortier Bay, within Placentia Bay. Both bays are large, deep and ice-free which allows for year-round shipping in and out of the bays.

With a population of 5,204 residents (2021 Census), Marystown is the 15th largest municipality in the province and serves as the primary economic and commercial services centre for the Burin Peninsula, which has a population of just over 19,000.

Marystown has a maritime history steeped in fishing, ship building and repair. It was first settled because of its

harbour; its proximity and easy access of abundant fishing grounds and good farming land; and its availability of timber for ship building and construction.

For several years, Marystown set a goal to plan for and take advantage of opportunities in the industrial marine sector. In 2003, the Marystown Port Authority Steering Committee was formed, and the plan was put in place to invest in the harbour by building one of the most modern and efficient marine industrial parks in Eastern Canada.

In 2014, the Town began construction on a new recreation complex and struck a volcanic basalt type aquifer while drilling the geothermal wells. Grieg Seafoods NL learned that this unique water source, suitable for a salmon hatchery, was located within close

proximity to the Marine Industrial Park. They chose five prime lots for a land-based salmon hatchery/nursery, with a marine-based operation to be located in Placentia Bay. The hatchery will be the largest in Canada and one of the largest in the world, positioning Marystown as a major global player in aquaculture.

In 2019, Marbase Marystown Inc. purchased the Marystown Shipyard and plans are currently underway to transform the once idle building into a fully integrated aquaculture service hub, which includes a lumpfish hatchery, to support the province's aquaculture industry and generate new opportunities for the area.

It's an exciting time for Marystown as we work together to create a strong, more sustainable economy.

NAIA and Stakeholders Cooperate to Clean up Previous Mussel Sites

By: Darrell Green, Research and Development Coordinator, Newfoundland Aquaculture Industry Association

With our organizational vision of “Setting the standard for responsible aquaculture” the Newfoundland Aquaculture Industry Association (NAIA) is dedicated to leading the way in terms of environmental stewardship and protection. The organization of shoreline clean-up activities each year is a good example of this stewardship.

In 2021, NAIA was successful in accessing funds from

the DFO-administered Sustainable Fisheries Solutions & Retrieval Support Contribution Program (SFSRSCP), also known colloquially as the Ghost Gear Fund. This funding allowed NAIA to deliver what we called our “Removal of Plastic Equipment (from Previous Mussel Aquaculture Sites) (ROPE) Project” which aimed to contract the removal of old gear on mussel farms that ceased operation years ago.

Mussel aquaculture started to develop in the late 1980s when numerous small enterprises operated longline mussel farming sites across the province. Some of these had insufficient financial resources and inadequate management and marketing capacity to operate over the long-term. Unlike the current situation with our mussel farming sector, where we now have the extensive expertise, infrastructure and equipment, these small farms were operated with smaller

Continued next page



Real-time Ocean Data Services 104-foot vessel the Patrick and William.

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NAIA & STAKEHOLDERS COOPERATE TO CLEAN UP PREVIOUS MUSSEL SITES cont.

vessels and barges, which were sometimes incapable of removing tangled gear from the water. Consequently, there are several sites around our coast where abandoned gear, consisting of polypropylene rope, plastic mussel socking material and plastic buoys, could pose a potential hazard to marine navigation and the ocean environment.

Before the ROPE project began, NAIA formed a Project Steering Committee consisting of representatives from the Newfoundland and Labrador Department of Fisheries Forestry and Agriculture (FFA), Fisheries and Oceans Canada (DFO), Transport Canada, Qalipu First Nation and Thimble Bay Mussel Farms. The Committee used a list of defunct mussel sites, provided by FFA, to prioritize sites for clean up. With the amount of funding we had approved, it was originally

anticipated that we could clean up at least 3 sites, and likely up to 5. So, we selected 2 sites near Long Harbour and one site near Trinity as priority sites, based on concerns that we had heard from marine resource users over the past few years.

We started our work in the Long Harbour area, where we were surprised by the amount of gear and the difficulty of its retrieval. We were able to complete the clean up of both Long Harbour aquaculture sites, but at that point our remaining funding only allowed us to recover some (about 25 percent) of the gear on the site near Trinity. In the end, Real-time Ocean Data Services, using their 104-foot vessel the Patrick and William, collected over 25 metric tonnes of tangled gear from the Long Harbour area and over 8 metric tonnes of gear from the Trinity site. Miawpukek Horizon Marine Services were contracted to then survey the completed sites by ROV to ensure there was no gear remaining below the surface.

Despite not finishing the Trinity site we were extremely pleased with the amount of rope and other gear removed from the ocean. This was especially true in the Long Harbour area, where the amount and location of gear was initially unknown, as not much of it could be seen from the surface. Being on site for the successful removal of this gear; seeing it come out of the ocean and aboard the Patrick and William, was personally very rewarding. Based on the success of this project, we plan to seek funding in 2022/2023 to continue activities on remaining sites, with finalizing the site near Trinity being first on the list for this coming year.

NAIA would like to thank DFO for funding this initiative, our steering committee members for their valuable guidance and our contractors for their professionalism in service delivery.



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By: Andrea Riser, Maritech North America



Maritech Eye™ testing - Mowi CPC, Rosyth, Scotland

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It took 17 years of scientific research and two joint innovation projects, where Maritech cooperated closely with industry and research partners Nofima, HySpex, Mowi and Lerøy. In November 2020, Maritech Eye™ was launched for white fish - then for redfish at Aqua Nor 2021. It is the only solution of its kind in the world, scanning through the skin of round, white fish, recognizing species, and analyzing blood and melanin spots in redfish fillets. Each fish gets a unique quality score and ID, and live data is sent to the grader as well as to Maritech's LINSiGHT IoT platform for storage and visualization. With higher precision and far higher speed than a person, Maritech Eye™ can determine and document the quality of your fish.

"For seafood producers and processors

“ For seafood producers and processors across the globe, this is a reinvention of quality assessment, documentation, and sorting.

Kristjan Kristjansson, Sales Manager, Maritech North America (Halifax).

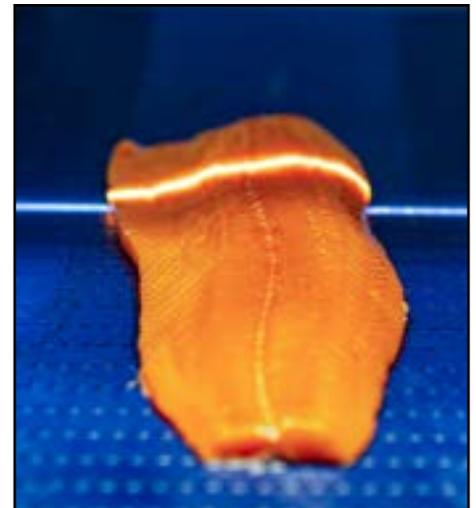
across the globe, this is a reinvention of quality assessment, documentation, and sorting,” says Kristjan Kristjansson, Sales Manager, Maritech North America (Halifax). “You increase cost- and resource-efficiency and improve your margins. Quality scanning enables allocation of premium quality for price premium products, while the rest of the fish can be used optimally in other product segments – improving production planning through fact-based decisions. And one can significantly reduce or reprioritize manual tasks and get a more efficient production line.”

“Being able to objectively document your quality with laser-sharp

accuracy is also great news for your brand.” Kristjansson continues. “The competitive advantage gained by reliable and consistent quality backed by credible, empirical data makes your brand stand out, whether seeking new markets or strengthening existing ones. And – as Maritech Eye™ scans the fish early in the production process, you will not only reduce quality claims, but also achieve a more sustainable production due to reduced waste and improved resource productivity.”

Gary Paterson, Head of Operations for Mowi CP UK, says that they have recently gone live with Maritech Eye. “For our business here in the UK, and in particular the Mowi brand, this gives us the ability to pre-select fillets based on a precise specification, reducing the manual intervention of removing blemishes once the fillets have been sliced. Furthermore, it gives us the ability to allocate the material accordingly and allows us to utilize our resources more efficiently and effectively.”*

*Source: Press release Mowi + Maritech Dec 30th 2021: <https://maritech.com/mowi-chose-maritech-eye>



Maritech Eye™ illustration photo: Scanning of salmon fillet.

AQUACULTURE PROFESSIONAL PROFILE

Aquaculture Professional: Natasha Baker • Position: Incubation, First Feed, and Fry Supervisor - Northern Harvest Smolt Ltd. (Mowi Canada East) Stephenville, NL



Where are you from?

I grew up in Little Burnt Bay, Newfoundland. I currently live in Stephenville, NL.

What is your education or training background?

I completed a Bachelor of Science Degree at Memorial University, in St. John's NL. I majored in Marine Biology and completed two minors: Biochemistry and Sustainable Aquaculture and Fisheries Ecology.

What does your job title entail?

As an Incubation, First Feed, and Fry Supervisor I am responsible for all aspects of caring for salmon eggs and the first several months of their life cycle. I am also responsible for all aspects of incubation and fry which includes working with tanks, pumps, piping, and filtration systems. Balancing all aspects of the system is sometimes challenging but the overall results are very rewarding. I also perform regular water quality analysis in a laboratory setting, record keeping, data organization and more.

Having a background in science helps me understand both fish health and the water chemistry required for growing fish.

My knowledge, along with the knowledge of other members of my team, results in a strong set of skills at our facility. This creates a very dynamic working environment.

Aquaculture and technology is changing all the time and you really have to be able to adapt to changes in a world where change is constant.

How did you get to where you are today?

I have always had a love for the ocean and aquatic animals. I knew from a young age that I wanted to pursue a degree in Marine Biology. It was within my first year at Memorial that I learned about the aquaculture industry and the different jobs that were involved. I then began seeking courses about both marine biology and aquaculture. At the time, aquaculture was 'new' to Memorial. Before this, most of the aquaculture courses were offered at the Marine Institute campus. Many of the courses I took were being offered for the first time. This led me to being one of the first students to graduate with a recognized minor in 'Sustainable Aquaculture and Fisheries Ecology' from Memorial. It was through my degree that I discovered that aquaculture was the career for me. I was fortunate to get a job at Northern Harvest Smolt (now MOWI) as soon as I finished my degree. I have been at the Stephenville Hatchery ever since. I have had several position changes and promotions in my short time there. I look forward to what the future has in store!

What advice would you give to a young person interested in a similar career?

My number one word of advice is to Go For It! There is no limit; the opportunities are endless. There are so many different areas of work involved in the aquaculture industry. Don't be afraid to reach out and ask questions; you may be surprised with the variety of options available.

What activities do you enjoy outside of work?

Outside of work I am a Figure Skating coach. I love helping others succeed at something they love. In my free time I like to walk on beaches and ride snowmobile. Nature is my happy place.

Cold Ocean Salmon Pallet Program

By: Claire Ryan, Director of Public Relations, Cooke Inc.



The Hermitage-Sandyville Lions Club ambulance employees with their new hydraulic stretcher that will help eliminate back injuries when transferring patients. Photo courtesy Steve Crewe.



As the pandemic stretches into another year, businesses and citizens have had to get creative in how they support local charities and community groups, which are unable to host the dances, concerts, dinners, walks, and other events they often rely on for funds.

Last fall, the team at Cold Ocean Salmon's saltwater division decided to put a charitable spin on a service that had long been available to residents in Hermitage-Sandyville. In September, they started charging \$1 for the wooden pallets they had previously given out for free, then donating that money to local organizations. The initiative was inspired by a similar fundraiser Cold Ocean's freshwater operations have held annually for the Bay D'Espoir Cancer Benefit fund. Based on the success of that program and the enthusiastic response from the community, Cold Ocean decided to expand the initiative based on the number of pallets that are typically available.

"People don't mind paying a dollar for a pallet when they know the money is going to a good cause," says Sheldon George, Cold Ocean Salmon's Regional Manager. At any given time, Cold Ocean has a few hundred pallets available, and

people will take anywhere from ten to fifty for a variety of purposes from splits for firewood to upcycling them into new items.

Fish feed for Cold Ocean's salmon farm sites are delivered on the wooden pallets, but once that delivery is complete, the pallet cannot be used elsewhere in the operations due to biosecurity considerations. In the past, the pallets were available to anyone in the community who had a use and were able to transport them.

"It's a win-win. Many residents have found great uses for these pallets, and the small fee has grown into sizeable donations. It's been incredible to see how supportive the community has been with this initiative, and how quickly it's been able to raise a significant amount in such a short period of time," says George. In just six months, they have raised over \$4,000 through the pallet program.

So far, Cold Ocean has made donations to two important causes: the Connaigre Peninsula Cancer Benefit Support Group, which works with local cancer patients to assist with the travel and accommodation costs that are often part of treatment; and the Hermitage Lions Club, to help pay for a new hydraulic stretcher the Club had recently purchased for the Hermitage-Sandyville Lions Club Ambulance Service.



NEWFOUNDLAND AQUACULTURE INDUSTRY ASSOCIATION

High School Graduating Students

10th Annual Scholarship



The Newfoundland Aquaculture Industry Association (NAIA) is pleased to announce its 10th Annual Scholarship for graduating students from high schools in Newfoundland and Labrador. Two scholarships, valued at \$500 each, will be awarded to students pursuing a post-secondary education in marine or aquatic related studies. (sustainable aquaculture, marine biology, marine environment technology, ecology, nautical science, engineering, etc.)

ELIGIBILITY:

- To be eligible, you must be graduating in 2022 and entering your first year of University or College.

EVALUATION CRITERIA:

- Based on academic achievement, references, level of community involvement and volunteerism.

TO APPLY, PLEASE SUBMIT THE FOLLOWING:

- Completed application form available at: www.naia.ca
- Resume and cover letter outlining the rationale why you should be the successful recipient
- Three reference letters: Academic (1), Professional (1), and Personal (1)
- Recent transcript

Please submit the application with supporting documentation to NAIA Scholarship Committee c/o Jamie Baker, 29-31 Pippy Place, Suite 3007, St. John's, NL A1B 3X2 or email to executivedirector@naia.ca



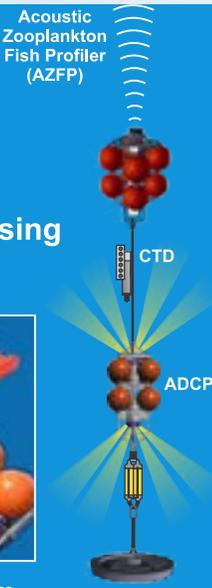
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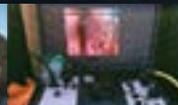
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Industry, Energy and Technology

Supporting Specialized Training for a Local Dive Company

Support from the Provincial Government will help a company vital to Newfoundland and Labrador's aquaculture industry, as it continues to develop its skills and knowledge base around diving.

TayAus Diving Ltd. received approval for a non-repayable \$28,359 contribution from the Business Development Support Program to assist with specialized training not offered in Eastern Canada and to develop its knowledge base to meet the diving service demands of a growing aquaculture industry. This support will allow the company to certify divers to conduct diving operations to a maximum depth of 30 metres – promoting safer work practices.

Providing a vital service to the aquaculture industry since 2017, TayAus Diving Ltd.'s advance divers service large cages and nets in open water. By furthering its certification, skills and knowledge TayAus negates the need to bring operators and skills from other provinces as an import substitute. There is a need for divers to complete inspections, make repairs, and perform other related maintenance services.

Supporting the knowledge and specialized skills development for TayAus Diving Ltd. aligns with the Government of Newfoundland and Labrador's diversification efforts and development of the aquaculture industry.

"TayAus Diving Ltd. provides year-round work on the South Coast of the province and throughout the aquaculture industry. This increased certification will allow industry to move even further. Our government continues to provide vital support keeping local companies operating and thriving, while growing a strong economy in Newfoundland and Labrador."

Honourable Andrew Parsons
Minister of Industry, Energy and Technology

"Diving services are vital to the aquaculture sector and working underwater requires highly specialized training to ensure divers are able to work safely and effectively. This investment will go a long way to ensuring divers in this province have the skills and training they need to keep aquaculture sites operating smoothly and safely."

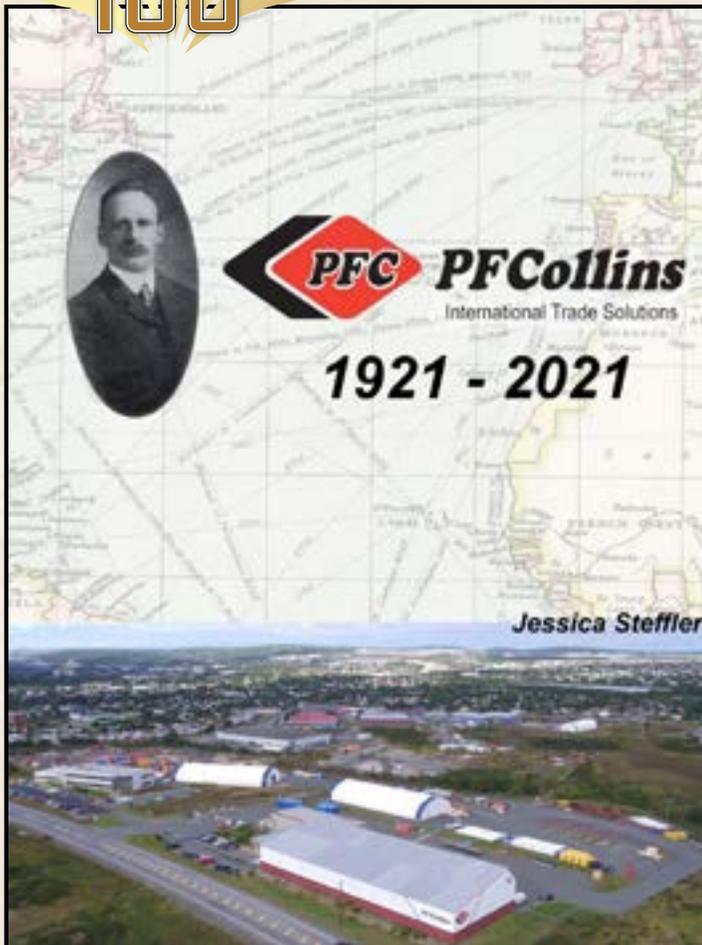
Honourable Derrick Bragg
Minister of Fisheries, Forestry and Agriculture

"The assistance provided by the Government of Newfoundland and Labrador through the Business Development Support Program will enable our divers to advance their skillsets to meet the needs of a growing aquaculture sector on the south coast. As the industry grows and practices change, service providers, like TayAus Diving Ltd., are required to respond to these changes in a timely way. This assistance is allowing us to grow our local workforce to meet these opportunities and not have to import these skills from other provinces. We are truly thankful of this support."

Luke Ingersoll
Owner/ Operator, TayAus Diving Ltd.

CELEBRATE
100

PF Collins Marks its First Century



In 1921 Patrick Francis Collins started as a customs broker with only a rented desk against the wall in the Customs House. Today his namesake company releases a history, written by Jessica Steffler, of PF Collins International Trade Solutions first hundred years. A century from its small beginnings the company has grown to a business with top tier logistics customers and connections all over the globe and offices in St. John's, Halifax, and Calgary.

Patrick and his son Bernard, grandson Bernard Jr. (Tanny), and currently great-grandson Raymond, have led a team known for getting things and people, in the right place for its clients. They're known for getting it done.

Historian and archivist Jessica Steffler has written about a century of operations; a duration not matched by many companies. She tells stories of dropping boxes out of a DC-3 into the ocean, borrowing cash from a beer store to pass onto a foreign ship's crew, and how Lundrigan's Marsh "saved" the current PF Collins

location from having the Outer Ring Road right down through the centre of its property.

Jessica's archival research and story gathering from current and former employees tells of a company still making its mark on the world. PF Collins is the company known to deliver the goods for small businesses, some of them clients for ten decades. Working in an industry where its competitors can have tens of thousands of employees, it's been the trusted service provider on a multitude of billion-dollar projects.

Jessica tells of when Newfoundland was its own country in 1921. Aside from seafood being shipped around the island, just about every item that came in through the narrows of St. John's was an import. For the Newfoundland government, import duty was a leading revenue source. It was important that Patrick did his rating and calculations correctly. His calculator was a pen and scratch pad. His accounting system was the metal cake tin where he kept his cash.

Raymond Collins spoke of his great-grandfather starting a new business, "at 51, Patrick was no longer a young man. Newfoundland was still reeling from devastation of the great war and the Spanish flu pandemic. His business life had ups and downs, but his integrity, drive and quality of service was never in question."

Today PF Collins has gone far past the metal cake tin. It is unique in the breadth of its services from one shop, which include customs brokerage, freight forwarding, warehousing & distribution, marine agency, and immigration. The logistics industry has a male-dominated employment history, but over half of the executive and management teams at PF Collins are women. A human answering the phone sounds like a small task or detail, but this personal approach is consistent throughout the company.

For more information please contact Raymond Collins at 709-687-2126 or email rcollins@pfcollins.com

The books are not for sale, but the distribution is provided to the public and school libraries in the province. Pdf versions will be available to any upon request.



Newfoundlander Betty House Earns 2021 ACFFA Aquaculture Award



Photo: Betty House, Science and Technology Coordinator proudly holding her award. Photo credits: ACFFA

NAIA would like to congratulate Betty House, Science & Technology Coordinator who has received the Atlantic Canada Fish Farmers Association (ACFFA) 2021 Atlantic Canada Aquaculture Award. This award honours an industry professional who has dedicated 25 years or more in the areas of science, environment and technology in support of the sustainable development of salmon aquaculture in Atlantic Canada.

“I’m surprised and humbled by this award.” says Betty. “I have been fortunate to work with a large number of very smart people, in the aquaculture sector over the years, who have taught me a lot and introduced me to the many facets of this industry that most people don’t get an opportunity to see. We’ve seen many changes within the industry, and though some frustrations and challenges remain, we stay because we share a love of fish farming and growing food, despite the days with minus 25 windchill and long hours. We enjoy working

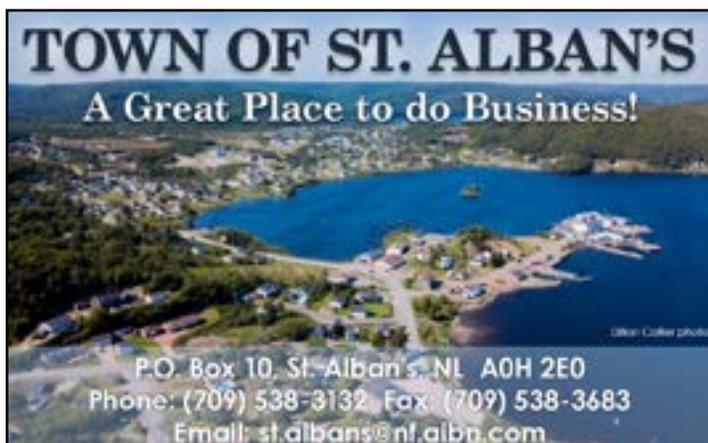
together to see the industry grow and improve.”

Betty received a Bachelor of Science (Biology) degree from Memorial University and went on to complete the Fisheries and Marine Institute’s Advanced Diploma in Aquaculture program before beginning a career in aquaculture which has spanned three decades.

She began her career working on R&D projects on salmon, trout and eel farms in Newfoundland and Labrador before moving to New Brunswick to work as a marine site technician and then as a fish health technician before taking on the role of Saltwater Certification Coordinator at Cooke Aquaculture. In 2009, Betty joined what was then the New Brunswick Salmon Growers’ Association (now the Atlantic Canada Fish Farmers Association) as their Research & Development Coordinator (now called their Science and Technology Coordinator) where she has been working diligently coordinating science, research, and innovation activities for the past 12 years.

Over the past 12 years, Betty has led the New Brunswick salmon farming sector’s participation in some major initiatives, most notably a well-boat technology pilot project that has revolutionized sea lice management in Atlantic Canada; and an innovative partnership that is transforming wild salmon restoration and has resulted in a 30-year record in wild salmon returns in rivers in Fundy National Park.

Regarding her work on the Fundy Salmon Recovery Project, Betty says, “There’s nothing quite like the feeling you get when you put a wild salmon back into its native river. It’s like being a part of nature, part of the ecosystem and delivering a missing member of that system into the rivers where it will have an impact on many future generations and help the healing.”





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Kaitlyn and Matt are experimenting with fungus mitigation in post-hatch salmon. Photo credit Cyr Couturier.



Student Research at Memorial's Fisheries and Marine Institute

By: Cyr Couturier, Marine Biologist & Aquaculture Scientist Chair, MSc Sustainable Aquaculture Program, School of Fisheries Marine Institute of Memorial University of NL

The Fisheries and Marine Institute (MI) of Memorial University has had a long-term relationship with the Newfoundland and Labrador seafood farming industry. Starting in 1987, it has the longest continuously operating education and training programs at the undergraduate and graduate level in Canada. Over 350 graduate diplomas, 500 technical certificates (salmonid, shellfish, cod, aquaculture management),

and close to 50 MSc and PhD students have come through its doors in the past 35 years, and in collaboration with various faculties and departments at Memorial University and the MI [C-ASD, C-SAR, Ocean Sciences, Biology, Engineering, Medicine, Geography among them].

Applied research is nothing new to our students and faculty. Each year the graduate diploma students undertake



Kevin, Beth and Dylan are feeding sea cucumbers natural food and salmon waste and evaluating feed consumption. Photo credit Cyr Couturier.



Uchenna and Felix are evaluating alternate feeding schedules in small RAS systems for salmonids. Photo credit Cyr Couturier.

a small research project in house that may provide some basic concepts for improvements in the farming sector of the industry (performance, health, business, social, nutrition, etc.).

In 2022 there are four distinct “projects” being undertaken by the MI grad-diploma students:

- 1) alternate feeding schedules in rainbow trout RAS with view of saving costs for small producers
- 2) alternate diets in oyster juveniles using high protein encapsulated feeds
- 3) mitigating *Saprolegnia* (fungal) infections in post-hatch Atlantic salmon using high intensity UV, and
- 4) mitigating salmonid waste with orange-footed sea cucumbers

Trials are underway and the findings will be reported by each team in the spring of 2022. These short-term practical trials may not lead to major advances in aquaculture science or technology, however students are trained to evaluate issues in sustainable aquaculture, propose experiments to test hypotheses, design experiments in animal or plant aquaculture, and learn the basic principles of systems maintenance, operations and animal husbandry. The skills acquired enable them to move out into the world of sustainable aquaculture with some practical experience as they commence their careers in finfish, shellfish or seaweed seafood farming, and allied sectors.



Kirsten and Aimee are evaluating alternate diets for improving growth in oyster juveniles. Photo credit Cyr Couturier.

Cooking with Chef Steve Watson

Garlic Broiled Merasheen Bay Oysters

By: Chef Steve Watson

INGREDIENTS:

- 2 dozen Fresh Merasheen Bay Oysters
- 2 tsp. coarsely chopped fresh parsley
- ¼ cup freshly grated parmesan cheese
- ¼ cup fine bread-crumbs
- 4 cloves of freshly chopped garlic
- 2 tsp. dried Italian seasoning
- 8 oz. of melted Natrel sea salt butter

METHOD:

Shuck the oysters and discard the top shell. Keep the oysters in the deeper bottom shell, and place shells on a rimmed baking sheet filled to a depth of 1/2 inch. Stir parsley, grated parmesan, bread-crumbs, Italian seasoning, chopped garlic and melted butter in medium bowl. Carefully spoon mix on each oyster. Broil the oysters 5 inches from heat for 5 to 7 minutes or until the edges of the oysters begin to curl and turn golden brown. Serve immediately with lemon wedge.



OYSTER TIPS

- Always ask your Seafood counter for the freshest oysters and ask for the date they were processed. Its best to purchase them when you are ready to serve them.
- Oysters need to breathe. Do not store them in a sealed container or cover them in plastic. Do not soak oysters in freshwater or store them on ice.
- You can refrigerate fresh NL oysters in the shell (large shell side facing down) for up to 5 days. Cover them with a damp cloth.
- The ideal temperature for refrigerating oysters is 5°C (40°F), and no lower than 1°C (33°F).

CHEF STEVE WATSON served as an apprentice in London, and worked in Scotland, Belgium, France and Germany before moving to Canada in 1977 to study North American cooking. He taught culinary arts at the Cambrian College in Sudbury, ON before joining the Canadian Pacific Hotels chain in 1988. He recently retired as Territory Sales Manager and Executive Chef with Agropur, and has taken on a new passion of working as a tour guide with McCarthy's Party in St. John's, NL. He's also a devoted family man and a prominent member of the local community. Steve epitomizes the definition of a volunteer, including his work with NAIA and his quarterly submissions to the Cold Harvester, and spends countless hours giving back to the people of a province he now calls home. ✨



Couturier on Culture

Social and Environmental Benefits of Aquaculture – A Perspective

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 RDÉE TNL, and is a past president of AAC 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](https://twitter.com/aquacanada)

It's been a few years since I have commented on global aquaculture trends in this column. The following is a brief update, and perspective on seafood farming.

According to the United Nation's Food and Agriculture Organization (UN FAO) aquaculture is here to stay, and is the fastest growing food production sector globally. The seafood farming sector represents over US \$130 billion in farm gate value, with hundreds of species of seaweed, shellfish and finfish farmed throughout the planet in over 150 countries (for detailed statistics and trends, visit the UN FAO's State of World Fisheries and Aquaculture 2020 at www.fao.org, available free).

At present, seafood farming contributes more than 50% of all seafood consumed on Earth, and with stagnation in capture fisheries production over the past 4 decades (since mid-80s) it is expected to reach about 65% of ALL seafood we consume on the planet by 2030. Finfish, seaweeds, and shellfish (molluscs, crustaceans) make up the top three groupings of farmed seafood in that order, and representing 95% of all farmed aquatic organisms.

There are in excess 20 million seafood farmers across the globe deriving their daily income and livelihoods in aquaculture, from small-scale family operations to large multi-national companies, with the majority of farming operations and employment found in Asia with smallholder farmers. Direct and indirect employment in the seafood sector, from egg-to-plate, is estimated at over 300 million people in various aspects of the value and distribution chains.

There are about 3 billion seafood meals consumed daily (over one trillion yearly) by the planet's 7.9 billion inhabitants, and aquaculture is considered one of the most sustainable sources of food production, when considered in its totality. On average, farmed and wild seafood typically require less resources to produce healthy foods (space, water, nutrients, energy). Altogether, seafood is regarded as an efficient use of resources, is often lower in carbon footprint and greenhouse gas emissions, and a healthy source of proteins, minerals, and vitamins for both the developing and developed world. Farmed seafood can be locally produced, in thousands of rural communities around the globe.

However, there are huge variations in resource impact among and within farm production methods; all human and animal food production will have both negative, and obviously positive impacts. One cannot produce 130 billion kgs of anything without having an impact on the environment, the communities and regions where practiced. There are also huge differences in perspectives globally about the benefits and impacts of farming seafood. So, it is incumbent in my view, that scientists and farmers are always seeking more efficient and less impactful (environmentally and resource-wise) ways and means to produce seafood, farmed and otherwise.

Canada and Newfoundland and Labrador have a role to play in this increasing food production sector. With our abundant, clean and clear waters, we now produce about CA \$5 billion in economic activity (compared to CAN \$130 billion in Ag and Agrifoods economic activity in 2020), employ over 25,000 farming related families, and the potential is to double and be one of the top three most sustainable aquatic protein producers globally (see www.aquaculture.ca for details).

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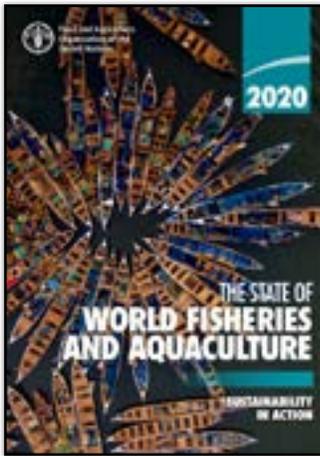
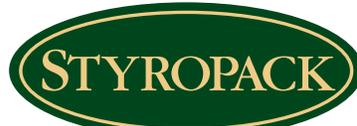


Photo: Cover of FAO's SOFIA report 2020. Full report available at fao.org, freely.

Over 250 First Nations are participating in, and engaged in various relationships in seafood farming endeavors across the country. However, once in the top 10 seafood production countries in the World (1980s) we now rank 22nd or 23rd, and are losing ground with our Northern and Southern cousins. The opportunity is there to be a great seafood nation once again, to act as a catalyst for conservation of natural resources, and to lead by example, if only there is the political and social will to do so.

On balance, the social and environmental benefits of farmed seafood should outweigh the impacts, especially with improvements in understanding of the mitigation and adaption benefits of advanced technologies such as precision, or smart-farming. The World needs more farmed seafood to fuel population growth, to improve health and dietary outcomes, and to help meet several of the UN's sustainable development goals (SDG 2030). Let's get on with it for future generations!





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Servicing the Aquaculture Industry



How the Aquaculture Industry can Innovate to a Greener Future

By: Nathan Pyne-Carter, Ace Aquatec CEO

Aquaculture is fast becoming one of Scotland's key innovative sectors, with farmed salmon being the largest food export, accounting for approximately 40% of total value. However, it's estimated by Zero Waste Scotland that there are around 10,000 tonnes of mortalities each year – fish that goes to waste.

Waste levels from average fish hatchery facilities sit between 5-8% of total production. Ace Aquatec introduced an alternative and more sustainable way of culling fish

to get this figure closer to 1% while also giving the sector an option that would help reduce its carbon footprint.

Fish due to be culled for quality reasons are typically treated with a chemical anaesthesia, which makes them unviable for consumption. They are then incinerated and end up either in landfill or in ensilage bins. A more ethical way of disposing of excess smolts at hatchery facilities is to remove this chemical usage through use of a smolt stunner, with the added benefit of producing an omega rich protein that can be harnessed for new revenue streams.

One of these is the pet food market, which has seen demand for premium options soar since the pandemic as owners choose healthier diets for their pets. Salmon offers a more

sustainable source of protein for pet food than the wild fish that are traditionally exploited for this market and is now a viable alternative with stunner technology.

The fish oil market is another that is tipped for significant growth, with the health benefits of omega 3 fatty acids well documented. With increasing demand among the growing 65+ demographic, the global fish oil market size that was valued at over £1.3 billion in 2019 is estimated to exceed £2 billion by 2027.



The potential across the aquaculture industry is huge. Currently, Scotland produces approximately 55 million smolts a year; with 5% (excluding natural mortality) culled at an average weight of 35g, it is creating around 105 tonnes of fish biproduct annually. If producers euthanise these fish using a stunner rather than chemical anaesthetic, they could create an additional income stream of approximately £21 - £30 million per annum and reduce their carbon footprint dramatically.

As a growing industry, it's essential that everyone working within it is continually looking at ways to produce fish more sustainably, reduce wastage and reduce our carbon footprint. Through innovation we can decrease mortalities and turn the blue economy green faster.



Bringing so much
to the
table

For more information contact:

Newfoundland Aquaculture Industry Association

29 – 31 Pippy Place, Suite 3007, St. John's, NL, A1B 3X2

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