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IMPORTANT DATES

Havelock Mussel Festival
14 March

Q2 Light Audits Due
31 April

Blessing of the Fleet
9 May

Next Generation Career Expo
21/22 May

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GM Comments

I thought I'd start this off by introducing myself, I started as GM of the MFA on February 2nd. I'm a farmer's son, who grew up on a deer, sheep and beef farm (since converted to gold kiwifruit). I first worked in aquaculture, straight out of university, in 1999, as a technician at the NZ King Salmon Co's Kaituna hatchery.

Later that year I started work at Sanford, where a broad 'projects' role enabled me to learn a lot about the sector, especially mussels.

Since then, I've worked for AQNZ, Cawthron, Seafood Innovations, Sanford again (leading the mussel farming team) and recently as an independent contractor. On weekends I'm likely to be found out on my boat fishing, running (very slowly!) in the Wither Hills or Taylor River reserves, or chilling by the BBQ with a few beers.

Mike Mandeno, MFA's new General Manager, with his Fijian GT

I'm passionate about seafood, aquaculture, and science. If we look at the history of primary industry in NZ, farmers and horticulturists have invested massively in science to establish and grow. The most successful farmers and horticulturists are practically and technically sharp operators.

Aquaculture is a young industry. For comparison, people started farming sheep about 11,000 years ago. There is still lots of room for growth and innovation. We have an ocean of opportunity ahead of us, if we can use the best of practical farming knowledge, science and technology. And if we continue to enjoy the support of government and the communities we operate in.

Things are changing at the government level in NZ, in ways that impact aquaculture. Firstly, the Resource Management Act is being replaced by two new acts. These are intended to change environmental law in NZ from being locally focussed to nationally. The intention is to make it simpler and easier to get permits to undertake and *grow* business activities, including aquaculture. MFA and AQNZ will be working hard with government to make sure that intent is delivered.

Secondly, the science funding system is changing. The government's eight research organisations have been merged into four larger ones. The government will also be taking a much more targeted approach to funding research.

This includes 'picking winners' - funding areas with a lot of growth opportunity. Given the ability to grow and innovate aquaculture has, and government's plan for the sector to grow to 3 billion in revenue by 2035, our sector should be an obvious choice for more science funding.

Finally, a reminder that it is vitally important we are all responsible operators in the marine environment. Making sure our floats stay on our farms and lashings and other potential debris stays on board for appropriate disposal. It really is so important to how we are perceived by the community.

Mike

Marine Farm Compliance Audit Programme

Declarations are Due

30th April 2026

Please send your declarations through before the end of April

ONE **DECLARATION FORM PER SITE**
DUE BY THE END OF EACH PERIOD

November, December, January	(1)
February, March, April	**(2)**
May, June, July	(3)
August, September, October	(4)

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Ordinary Members $50 +GST
Associate / Non Members $100 +GST

Full Page Advert
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With boarder - 180mm x 267mm
Ordinary Members $100 +GST
Associate / Non Members $200 +GST

Thank you and Farewell to Ned

I would like to sincerely acknowledge and thank Ned for the enormous contribution he has made to the Association and to the wider marine farming industry as our General Manager.

During his time with us, Ned has provided steady leadership, thoughtful guidance and a genuine commitment to serving our members. He has navigated complex and often challenging issues with professionalism and integrity, always keeping the long-term interests of both the Association and the sector front of mind.

Ned has also played a key role in progressing several significant industry projects. His project management work across both the King Shag Project and the Mussel Restoration Project required careful coordination, collaboration with multiple stakeholders and a strong understanding of the environmental and operational realities of our sector. In addition, he has been instrumental in getting the Affordable Nursery Feed project underway, helping to move it from concept into action.

His incredible work on the Marlborough Environment Plan on behalf of the industry stands out in particular. That process required persistence, technical depth, strategic thinking and the ability to represent our members clearly and confidently in a demanding regulatory environment. Ned approached it with determination and focus, ensuring the industry's voice was heard and understood.

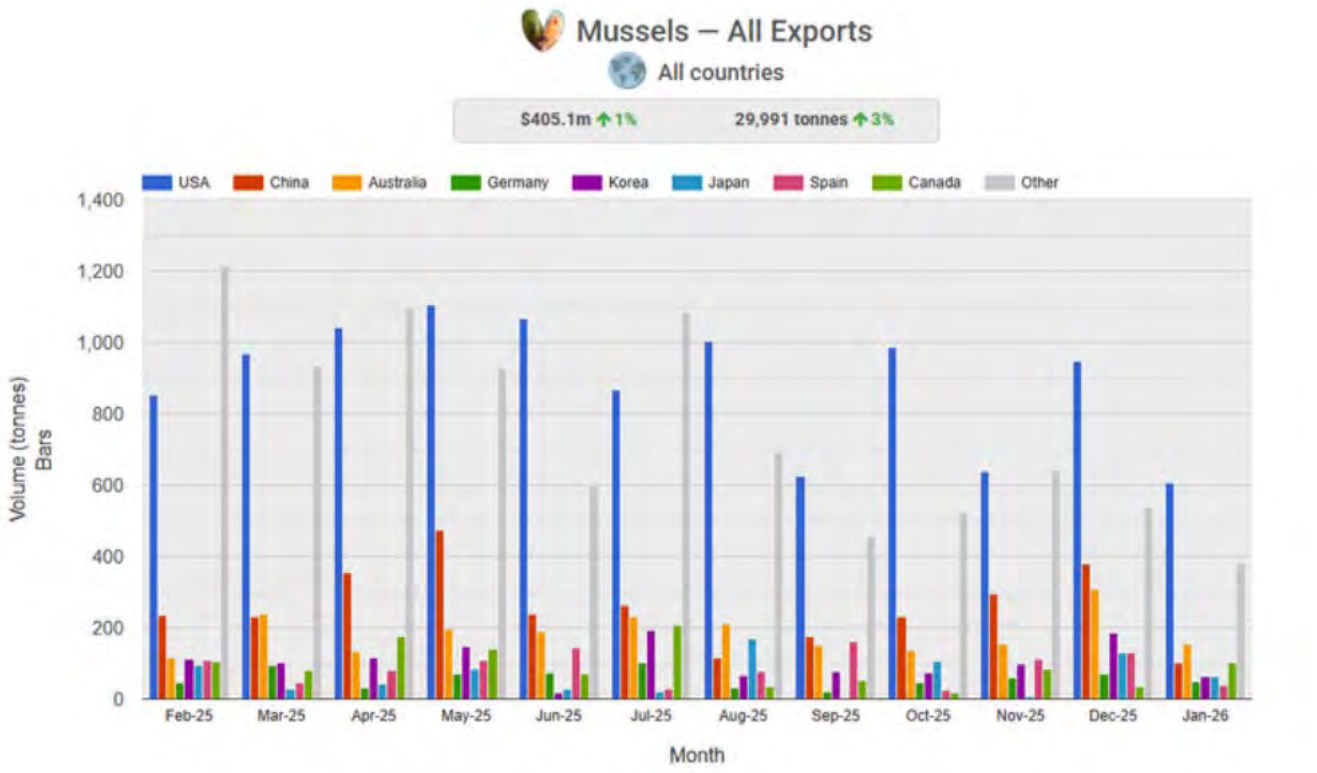
Importantly, while Ned is stepping on from his role with the Association, we are fortunate that he is remaining within the industry through Aquaculture Direct Limited. His knowledge, experience and passion for aquaculture will continue to benefit the sector, and we look forward to continuing to work alongside him in this new capacity.

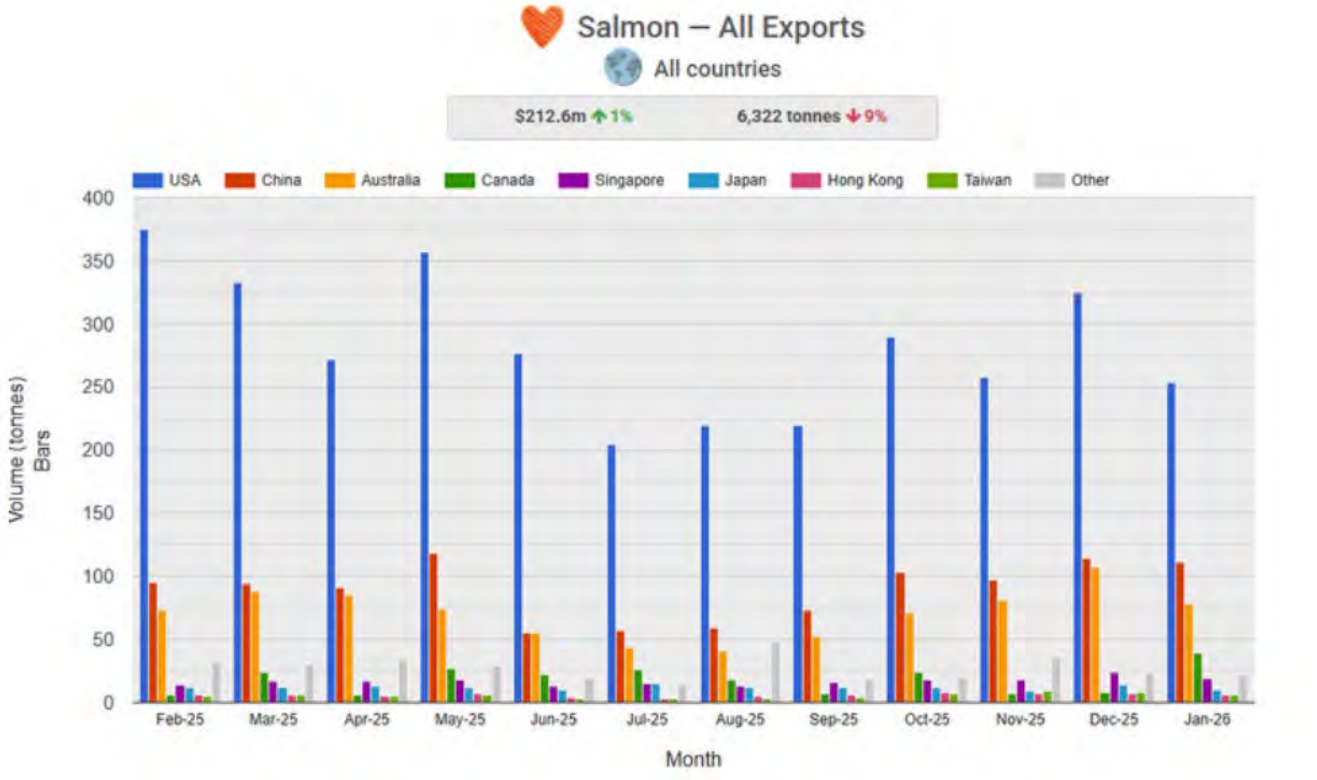
On behalf of the Board and our members, I want to extend our thanks to Ned for the many hours, energy and commitment he has invested in MFA. While we are sorry to see him leave this role, we wish him all the very best for what lies ahead. Thank you, Ned, for everything you have given to the Association and to the wider marine farming community.

- Jonathan Large, MFA President

MFA team from left: Ned Wells (General Manager), Nicola Russell (Office Manager), Jonathan Large (MFA President), and Kiah Holdaway (Administration Assistant) at the 2025 Marlborough Environment Awards.

AQNZ Export Data





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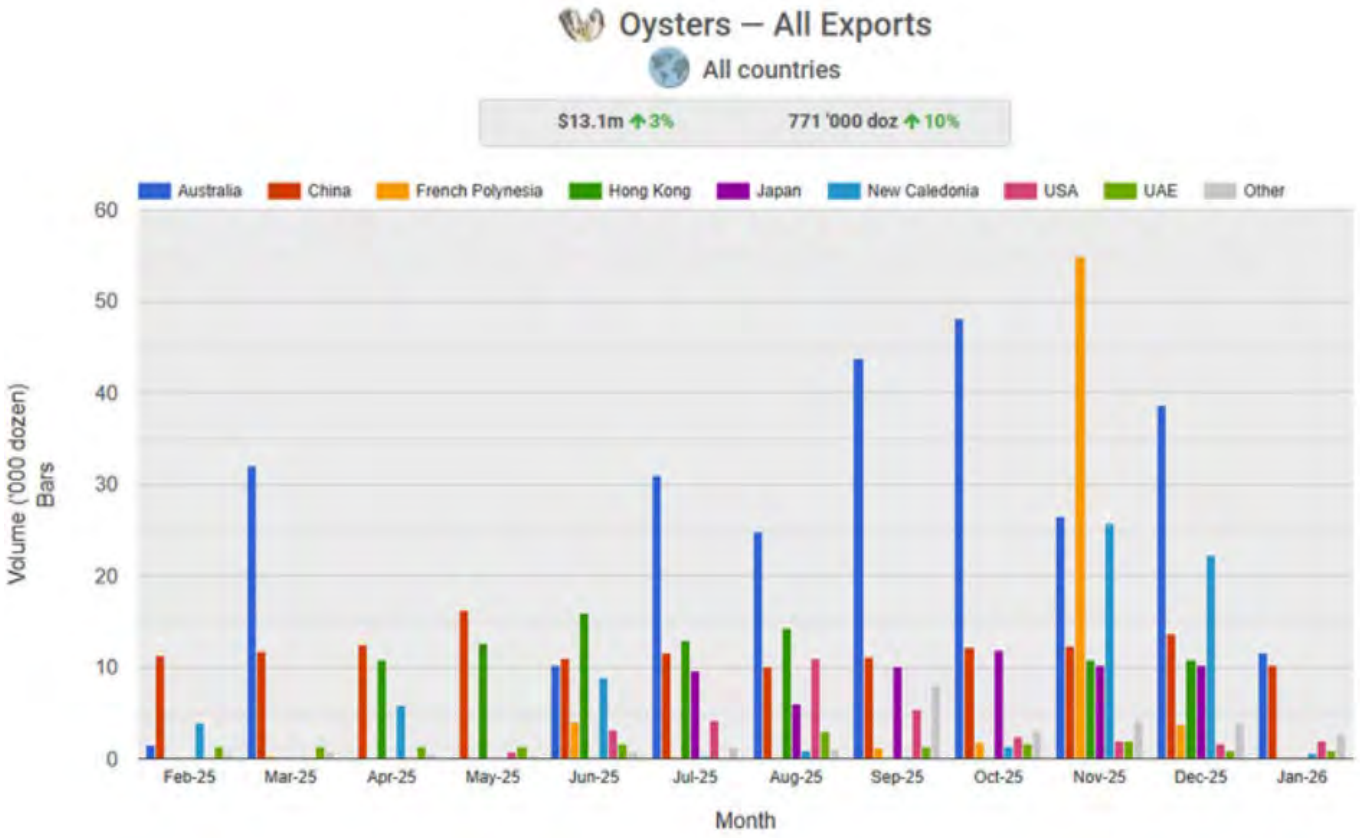


Sharing the Water: MFA's New Safety Video for Boaties and Fishers

The Marine Farming Association has produced a new safety and navigation video aimed at recreational boaties and fishers operating around marine farms.

As mussel farms are a common feature along our coastline, and often some of the best fishing grounds, the message is simple: these are shared waters, and everyone has a role to play in keeping them safe.

The video highlights a few straightforward but important points: not all marine farms are easy to see, keeping your speed down matters, and you should never anchor within a marine farm boundary.

Filming took place on board the Glenora, a Talley's vessel skippered by Brad Poole, who provided practical support and on-water expertise during the shoot. Josh Robertson directed, filmed and operated the drone, capturing sweeping aerial shots that show just how extensive and complex farm layouts can be.

Clearwater's vessel Waihono makes a cameo appearance as a work boat in the background to reflect typical farm activity and what it really looks like operating in shared waters.

Grey Heron of MacLab is seen operating within a farm, with additional drone footage provided by Tim Cuff. The aerial perspectives give viewers a much clearer sense of scale and layout and highlight how different farming areas can look very different on the water.

Peter Renshaw, TDC Harbourmaster, also appears in the video, reinforcing the key safety messages.

Our on-screen talent, Kiah and Kent Holdaway, owners of Platinum Auto & Marine and part of the MFA team, brought authenticity to the recreational boating perspective. As experienced boaties, they demonstrated practical, real-world behaviour around marine farms, helping make the messaging relatable and easy to understand.

University of Auckland provided footage of snapper feeding within a mussel farm to highlight what great fishing spots active farms can be.

One of the practical demonstrations focuses on how to tie off correctly, as anchoring is not permitted within farm boundaries.

Boaties are advised to tie only to above-water floats with visible handles, use a soft loop or quick release, and avoid putting strain on either the float or their vessel. The video also shows how a farm hook can be used to safely span the farm lines, with bow and stern lines tied off to hold the boat securely in place. Securing both ends reduces swing and helps prevent boats from drifting across lines, protecting both the skipper's vessel and the farmer's gear.

Another key message is speed. The five knot rule within 200 metres of marine farms is emphasised throughout. Slowing down gives skippers more time to react to submerged infrastructure, working vessels, or unexpected gear movement.

Marine farms are active work sites, with barges, support boats and equipment often operating in confined spaces. Excessive wake, sudden turns, or cutting through boundaries can quickly create risks for crews and recreational users alike.

Anchoring within marine farm boundaries is also clearly addressed. Even in areas where no structures are visible, mussel lines, weights and other infrastructure are often present below the surface.

Anchoring can damage farm gear, result in lost anchors, and create unnecessary safety issues.

By combining real footage from an operational farm with clear, practical messaging, the video and accompanying shorts aim to inform without preaching. The goal is not to deter people from fishing near farms, quite the opposite. With a bit of awareness and care, mussel farms can be productive and enjoyable fishing spots.

The video has already been shared by local boating and yacht clubs, Aquaculture New Zealand, Marlborough Sounds Marinas, and influential fisherman Dan Govier. It's gaining momentum and reaching the right audiences, helping strengthen understanding between marine farmers and the wider boating community.

To watch our video and social media shorts, please visit our youtube page: Boating Safety Around Marine Farms https://www.youtube.com/watch?v=zmAPTVXd11M&t=20s

Don't forget to like and share!

- *Nicola Russell, MFA*

Liquid food for baby mussels

Reducing losses of juvenile mussels (spat) after seeding on coastal farms remains a key priority for the Greenshell™ mussel industry. Seeding larger spat that are in better-condition is one of the most effective ways to improve survival through those critical first months and make better use of this valuable natural resource.

Through my PhD research I discovered that Greenshell™ spat can absorb dissolved sugars directly from seawater and use them to boost growth and overall condition. Testing this at a hatchery scale, I found it was possible to replace a significant portion of the live microalgae feed for spat. However, an attempt to restore the nutritional condition of wild Kaitaia/Te Hiku spat highlighted that very small, stressed spat at high densities need more than a quick sugar hit to recover after harvest and transport.

My subsequent research looked into what other dissolved nutrients spat can utilise. I have confirmed that spat can directly absorb not only individual amino acids, but also small protein fragments (di- and tri-peptides), at similar rates to the sugars. This means spat can take up energy and nutrients not only from carbohydrates dissolved in seawater, but also from small protein components that help to build tissue.

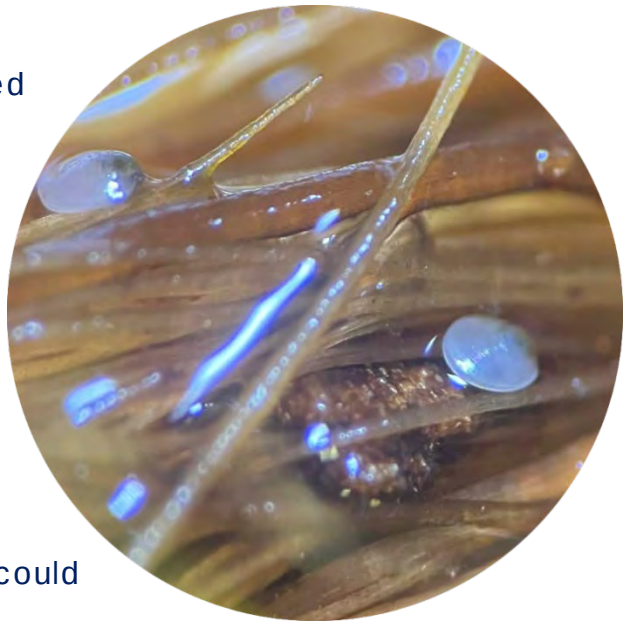


Figure 1. *Tiny post-settlement Greenshell™ mussel spat (approx. 0.5mm shell length) settled onto fibrous coir rope.*

This presents an opportunity to develop a balanced liquid diet made of a mixture of both carbohydrates and small proteins fragments that could be used to reduce feeding costs in hatcheries and condition spat prior to seeding. My current research aims to determine what combinations of nutrients work the best and how long these need to be in seawater to maximise the nutritional benefits to spat. Once this has been determined I am keen to test how this liquid feed performs against traditional microalgal diets under industry-relevant conditions.

Hopefully this research will result in useful methods to help our mussel farmers to grow and seed more robust spat. I appreciate the continued support from industry, and look forward to sharing the next round of results as this research progresses!

Andy Jordan
PhD Candidate & Researcher
University of Auckland | MFA – Andy Ritchie Scholar

Introducing the Blue House: a new hub for Aotearoa's blue economy

There is something powerful about creating a place where people can come together with shared purpose. For Te Tauihu and the wider blue economy ecosystem, that place is about to take shape in Nelson.

Moananui has announced the establishment of the Blue House, a new blue economy hub made possible through a three-year partnership between Kernohan Engineering, Nelson Regional Development Agency and Westpac NZ.

Located in the heart of the Nelson Port and Marina precinct, the Blue House will provide a physical home for collaboration, innovation and connection for businesses, innovators and researchers working across the marine sector.

The Blue House is being created to support early-stage ventures, scaling businesses and organisations working at the intersection of science, industry and innovation. The space will include a mix of dedicated offices and shared office space for startups, alongside shared workspace for blue economy organisations.

Practical administrative and coordination support will be available, helping emerging businesses focus on developing ideas, building capability and accelerating growth. The hub will also function as a venue for events, collaboration and knowledge sharing, creating a natural meeting point for connections across industry, research, investment, iwi and government.

At its core, the Blue House is about removing barriers and helping ideas move faster by surrounding founders and organisations with the right networks, support and momentum. By co-locating activity within the Nelson Port and Marina, it strengthens ties between existing marine industries and new ventures, reinforcing Nelson's position as a leading centre of marine capability.

New Zealand's blue economy already contributes at least ten billion dollars annually to the national economy, with the potential to grow further through innovation and responsible development. Across aquaculture, fisheries, marine engineering, shipping, biotechnology and emerging ocean based solutions, the opportunity is significant. The challenge is ensuring that growth supports long term ocean health as well as economic prosperity.

The Blue House represents a practical response, demonstrating how collaboration and partnership can help accelerate sustainable marine activity starting in Nelson and connecting nationally.

The partnership behind the Blue House reflects a shared commitment to action. Kernohan Engineering is contributing the property rent free and supporting the establishment of blue economy businesses within the space.

Nelson Regional Development Agency provides regional leadership and coordination, while Westpac NZ brings a long term commitment to supporting customers within the blue economy. Together, they are backing a model grounded in collaboration, shared learning and measurable impact.

From left: Fiona Wilson (NRDA), Paul Miller (Kernohan Engineering), Brent Callaghan (Westpac) and Hon Dr Nick Smith, Mayor of Nelson. Credit: Moananui

The Blue House will also become the physical home of Moananui, providing a focal point for partner led events, startup support initiatives, visiting delegations and investor engagement. The hub is to be officially open in late March 2026 and conversations with blue economy businesses and partners are already underway.

For Te Tauihu, the Blue House represents more than office space. It signals confidence in the region's marine industries and a shared ambition to grow a blue economy that delivers prosperity while safeguarding ocean health for generations to come.

If you would like to connect or explore opportunities within the Blue House, email kiaora@moananui.org.nz and speak with one of the team.

MFA Newsletter Stories

Do you have a story you would like to see published in our newsletter?
For consideration, please forward it to:
office@marinefarming.co.nz

Our newsletter is released quarterly – March, June, September, and December

All Hands on Deck for a Shanty Singalong

When the Wellington Sea Shanty Society take the stage at the Havelock Mussel & Seafood Festival on 14 March, festival-goers can expect a set that is anything but background music. Known as Aotearoa New Zealand's most "sea worthy" shanty group, the band has been performing traditional and original sea songs since 2012, drawing on influences from Aotearoa, France, Spain, the UK and beyond.

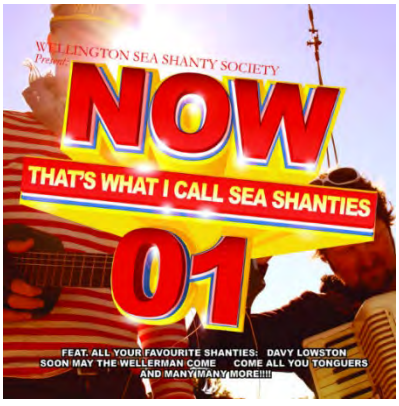
Over the past decade they've built a strong following for their energetic and highly participatory live shows. Performances regularly turn into raucous singalongs, with audiences encouraged to join in rather than sit back and watch. *Stuff.co.nz* captured the mood well, writing:

"Their live performances have turned into raucous crowd-participating evenings around the capital and there's certainly a Mumford and Sons-style danceability to these nine tracks which take them beyond simple comic value – although you'll be hard-pressed not to listen with a smile on your face."

The group has toured both Aotearoa and France multiple times and appeared at major events including the Paimpol Sea Shanty Festival in France, Splore, the Albany Folk Festival in Australia and the Quebec Sea Shanty Festival in Canada, as well as numerous other festivals across New Zealand and overseas.

Their recordings have also attracted attention. Recent releases include the EP *Sea Shanties of the 70s, 80s, & Today!* and the ongoing *Now That's What I Call Sea Shanties* series. They also collaborated with Nantes-based group Croche Dedans on *Ahoy!*, a French and English album that reflects the band's international connections.

Many will also recognise their recording of "Wellerman", released prior to the global "shantytok" wave and widely regarded as one of the definitive versions.



At a festival that celebrates the sea and all it provides, their appearance feels like a natural fit. On 14 March, expect big harmonies, plenty of rhythm and, more than likely, a crowd that won't be able to resist joining in.

"Probably New Zealand's best dance album of the year." – Sunday Star Times

havelock mussel and seafood festival'26

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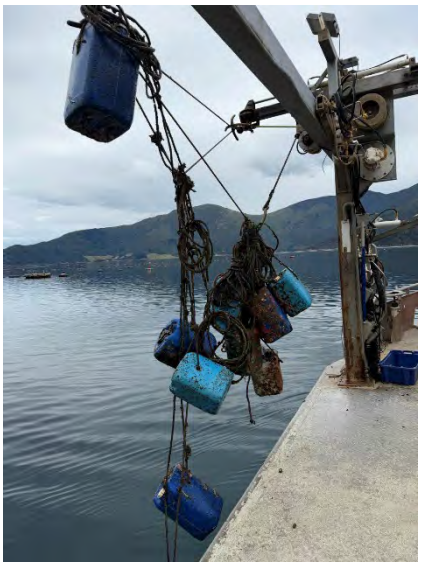
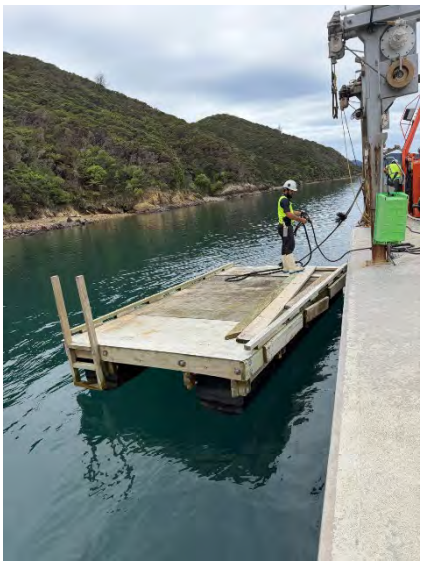
Outstanding Cleaning Crew Efforts

Over the month of February, we saw some awesome effort and results coming from crews across the region. We would like to highlight two in particular for their recent hard work.



Sanford's Pacifica crew found the remnants of a floating pontoon washed ashore in Beatrix Bay and were able to remove it from the shoreline. They made sure it was still buoyant and secured it to an adjacent farm for collection (once the owner had been found).

While undertaking this work, they noticed the weighted containers that appeared to have been attached to the pontoon sitting on the ocean floor about 10m offshore. The crew then spent the next few hours retrieving 10 of these 20L drums filled with concrete, along with the lengths of rope attached. Thank you to the team for taking the initiative to deal with the issue rather than putting it in the too hard basket.



On the other side of the hill, the MacLab Taman crew of the Vanguard made the journey to clean the full length of the Boulder Bank, from the Cut through to the oxidation ponds – on both sides! A crew of four spent five hours covering the area and collected a whopping 60+ kg of rubbish.

We know there are many crews quietly doing this work across the region, and it does not go unnoticed. We appreciate everyone who takes action to keep our coastline clean.

- *Kiah Holdaway, MFA*

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Can empty mussel shells support fish habitat?

Back in January 2025 researchers from the University of Auckland and Earth Sciences New Zealand ventured to Penguin Bay in Pelorus Sound to investigate fish presence on restored mussel shell reefs.

Over four tonnes of empty mussel shells were deployed over 24 different plots in Penguin Bay. Each plot was assigned a height of either low, medium or a high level of empty mussel shells, with half of these plots receiving live mussels on top of the shells. The aim of the study was to see if fish use these mussel shell plots as habitat, and if they have a preference between shells only, or shells with live mussels as well as whether reef height influences fish presence.

To do this, 24 different cameras were placed beside each plot by divers in the morning and left to record the surroundings for eight hours. Each camera was then collected later that evening.

The footage is now being carefully reviewed by volunteers and researchers, who are identifying and counting each fish species they observe. This will help determine which fish species (if any!) are using the restored shell reefs and how frequently they occur.

A Gurnard enjoying the mussel shell plot with live mussels on top.

The analysis of the video footage is already underway and going full steam ahead, with volunteers from across the country helping out.

So far, we have observed snapper, gurnard, spotties, rays, sharks, seahorses and triplefins. The shell reefs appear to be abundant with life; however, all recordings must be fully analysed before drawing any conclusions, but early signs look good!

If anyone would like to get involved and watch some 'Fish TV' feel free to get involved by contacting Altan on anim823@aucklanduni.ac.nz.

We would love to hear from you and appreciate all and any help and support!

- *Altan Ni Mhurchu, University of Auckland*

The Better Beaches Project – Still Going Strong

A few years in, the Better Beaches Project has settled into a steady rhythm, and the recent clean ups are a good example of what that looks like in practice.

Earlier this month, the MFA team took advantage of a day with unusually settled weather to get into areas that are often too choppy to work safely. Calm conditions gave us access to stretches of coastline that normally sit just out of reach, including rocky sections that definitely gave us a workout.

The water clarity on the day was incredible, clear enough to make you pause and look twice. Our skipper commented more than once that it felt like a wasted opportunity not to have spearfishing on the agenda. Instead, we stuck to the task at hand. It was a good reminder of how much timing matters in this work.

The following week we were back out again, this time focusing on rubbish around jetties and through the high tide line. That's often where debris accumulates, tucked into seaweed, wedged under driftwood or caught between rocks.

Beach cleaning isn't always as straightforward as it sounds. You really have to slow down and look carefully. After a while your eyes start to glaze over and everything blends into the background. Small fragments of plastic, bits of rope and even larger items can disappear visually against rocks and timber. Having more than one person go over the same stretch makes a real difference. A second set of eyes will often spot what the first person walked straight past. It's detailed, methodical work.

Darren Clarke beach cleaning in the Clova Bay area of Pelorus Sound.

There were a few classic finds along the way, including several fishing knives which will be cleaned and repurposed. Also, a recently lost brand new glove, found on our first beach and promptly claimed by Kiah after she'd left hers at home.

For crews and sponsors who support this programme, this is what your backing translates to on the ground, or more accurately, on the shoreline. Busy days out, making use of weather windows, working carefully through tide lines and rocky corners, and steadily removing what doesn't belong there.

The mahi continues.

THE BETTER BEACHES PROJECT

THANK YOU Sponsors

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Mohua Marine Trust, Clearwater, and Twenty Tonnes of Concrete

Last Wednesday morning the skipper and crew of the mussel boat Clearwater Resolution went to sea with an unusual payload: twenty tonnes of concrete reef balls and three members of the Mohua Marine Trust.

Skipper, Brian Godsiff was fulfilling a promise he made when the trustees completed the pouring of the 20 balls which form the pilot stage of their 420-ball project in the sea near Onekaka. Tasman District Council granted the trust a 35-year resource consent to complete the project.

“We support this project,” says Brian. “I told the trust in November that, weather and mussel harvest permitting, Clearwater would get the reefballs in the sea as soon as possible.”

Brian and his crew had the 20 reefballs loaded on board when the trust members gathered at Tarakohe on Wednesday morning for a karakia delivered by Eddie Ford, on behalf of Manawhenua ki Mohua.

“Manawhenua has supported this kaupapa, right from the start,” said Eddie before delivering the karakia and a follow-up waiata.

“We were lucky that the Clearwater Resolution was available,” says trust member Alan Hughes. “Having access to the heavy lifting equipment on board made the actual deployment quite straightforward in the end”.

Alan’s 60-year career in civil engineering in Auckland and elsewhere has been a godsend for MMT. He drove the construction phase of the first 20 balls.

The reef balls were poured in the corner of the Solly’s yard in Takaka and the trust says the support of the company was crucial to their success. Tony Hayes of Sanford’s also organised their transport from Solly’s to Port Tarakohe.

Completing the pilot stage puts the trust in a new position. In the near future they will complete a strategic planning process to devise a detailed approach to the massive task remaining.

“We have to scale-up a lot,” says Alan. “And that will require us to raise a significant amount of money. Major funders are out there and we’re confident that our project will attract their support.”

The trust has had patient and loyal support from community members in Mohua Golden Bay and beyond.

On Saturday, MMT founding member John Davis put on his wetsuit and went for a dive at the two sites where the balls were deployed (at 4m and 5m below low water spring tide).

“Weather and visibility issues meant I couldn't get a clear look at them,” says John. “I’ll go back in a few days.”

John will get video evidence of the beginning of the artificial reef project that the trust believes will eventually transform the sea-bed in the area adjacent to the old Onekaka Wharf.

Next on the agenda for MMT is sharing the news of their success with their supporters, monitoring the two groups of balls and gearing up for the major part of the project.

Check out the project at: www.mohuamarinetrust.org

- *First published Mohua Marine Trust Newsletter – Feb 2026*

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"For me, learning the theory, then going out on the boat to practice it - that's what made it make sense, even for someone like me, where the theory usually goes in one ear and out the other."

- Jo, 2023 SRL Graduate

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From Gateway to the Sounds: a fast-track into Aquaculture

Mark Jackson reckons it's pretty cool having an office in the middle of Marlborough's Queen Charlotte Sound.

He's an Aquaculture Technician on a 7/7 shift for New Zealand King Salmon (NZKS), working primarily at the Ruakākā Bay site—and doing exactly what he set his sights on when he first started at Marlborough Boys' College.

"I grew up on boats and getting out into the Sounds, and even when I was in Year 9, I realised I wanted to work on the water," Mark says. "So, in Year 12, I spoke to the Gateway coordinator at school and asked if she could get me a spot on the programme in aquaculture—preferably in salmon as I knew a little bit about it."

Eventually she secured him a Gateway placement with NZKS, and once a week Mark headed out to the Ruakākā farm. There, he began learning the ropes of raising King salmon and feeding them—one of the most important operations on the farms.

"Gateway was great—I really enjoyed it and got straight into it."

Before the year ended, Mark applied for an Aquaculture Technician role with NZKS. He was pleasantly surprised when his team leader and boss pulled him aside one day and offered him the job.

"Even though I was only 17, and didn't have my diving or skipper's qualifications, I think they saw my enthusiasm and quite liked my work ethic."

Despite early starts and long days, Mark enjoys the 7-on-7-off roster—it gives him plenty of time to get outdoors.

Even better, he can see a clear pathway ahead.

"The company is going to put me through skipper and dive training. I have already started skippering the vessels, and with my full dive qualification I'll be able to assist anytime they need a diver to do odd jobs inside the pens or out."

Mark's advice for anyone wanting to get into aquaculture? Talk to your school careers team, get some work experience, then give 100 percent and show them what you've got.

"Without Gateway my chances of being offered a job would've been lower, as they wouldn't have known me. With Gateway I had much higher visibility."

- *Aquaculture New Zealand*

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For more information contact Tom Lennon tom.lennon@pmnz.co.nz or 027 303 1523 .

Havelock Marina Redevelopment: Project Update

Plans are underway to redevelop Havelock Marina, ensuring it continues to safely support access for aquaculture operations, Sounds Residents, and recreational boating for years to come.

The redevelopment project is a significant investment and infrastructure project for Havelock and the surrounding Sounds and is designed to support the long-term operation of the marina for both the community, and commercial and recreational marina users, including the aquaculture and marine farming sector –significant regional employers for Marlborough.

Port Marlborough is undertaking this project by investing $9.9m in the redevelopment with co-funding through a $9.9 million loan from the Government's Regional Infrastructure Fund (RIF) managed by Kānoa – Regional Economic Development & Investment Unit.

The project recognises the significant contribution aquaculture makes to the Marlborough economy and supports the ongoing provision of infrastructure that marine farmers rely on over the long term.

The project will involve dredging parts of the marina basin and channel to restore navigational depth, replacing ageing wooden jetties with modern floating concrete jetties, renewing the services and raising low-lying areas to improve resilience to flooding and future sea level rise. Work continues to progress steadily, with key regulatory milestones now achieved and planning underway for the next phases of the project.

Progress Update

The project has reached key consent milestones, with approval in place for dredging and the main marina works, including new jetties and landside infrastructure. A final consent is being progressed for the deposition site, where works will be carefully managed, and the land restored to pasture with native planting along surrounding waterways.

Design for the landside works is now complete and going to market shortly, alongside contracts for dredging and new jetties. Works are expected to begin from mid-2026, starting with channel dredging to maintain safe access. Jetty redevelopment will be staged to keep the marina operational and allow time for berth transitions where needed.

What this means for marina users

Our project team is continuing to refine the staging and transition planning for customers to minimise disruption, alongside the construction programme. This includes working through berth relocation options for some vessels across the wider Marlborough Sounds Marinas network and maintaining priority access for users with operational or residential needs in the Sounds.

Our marinas customer service team are in direct contact with any vessel owners directly impacted by the works.

As the redevelopment programme is confirmed, affected berth holders will be contacted directly to discuss timing, interim and longer-term arrangements. Any berth holders displaced by the redevelopment will have priority to return to the new jetties once completed.

Further updates will be provided as the project progresses and the remaining consent decision is received.

Port Marlborough is committed to keeping marine farmers and other marina users informed as the project moves from planning into delivery.

We have a project page here on the marinas website:

https://marlboroughmarinas.co.nz/havelock-redevelopment-project/

The Havelock Redevelopment project team will be in attendance at the upcoming Havelock Mussel Festival, available to chat and answer any questions – we look forward to seeing you there!

Mussels Take a Bath in Aerated Lime

Notes from a Visit to Fassfern Farms, Fort William, Scotland

It's a quiet morning in the Scottish Highlands when Alan Byrne greets us beside Loch Eil, near Fort William. A cold wind blows down the loch as we step onto the gravel next to his red telehandler. There are no other workers around - it's a Sunday morning. "I haven't had a holiday in ten years," Alan says.

Alan Byrne (centre) discusses mussel harvest lift conveyor with Lynette Oldham (left) and Liam Oldham (right).

Alan and his brother Lawrie run Fassfern Farms, an efficient mussel-farming business on Scotland's west coast. Together, they produce about 600 tonnes of black common mussels (Mytilus spp.) each year from seven farm sites spread across 100 kilometres.

"We used to have three part-timers," Alan explains. "But I didn't replace them. I like things done a certain way, and it's easier to do it myself."

The Byrnes achieve an impressive output for a two-person team - at 300 tonnes of mussels per worker each year. That's similar to the Marlborough Sounds average, despite the extra work to reliably supply mussels every week in a demanding environment.

Fassfern Farms operates across three sea lochs on Scotland's west coast:

- **Loch Eil** – three farms

- **Loch Sunart** – three farms
- **Loch Linnhe** – one farm

Each loch is different. The water varies in salinity, exposure, current strength, and availability of mussel spat. These differences help the Byrnes spread their risks and make the best use of each site's conditions.

Across all seven farms, there are 56 double-backbone longlines. Most lines are 220 metres long, but seven are 300 metres. That's because of an old licensing rule that limited line numbers instead of total length.

The lines use 32 mm ropes rated for 15 tonnes of breaking load. They're anchored with 7-tonne concrete blocks spaced 30 metres apart. Each dropper is 8 metres long, with 500 mm between droppers. "Eight metres gives us a more even product," Alan explains.

At Loch Linnhe, the water moves fastest, with currents up to 1 knot during spring tides. A severe winter storm once broke five backbones there. To recover their gear, the Byrnes bought a small ROV (remotely operated vehicle) with a camera. This let them see how the lines were tangled under water. Aided by the ROV images, they managed to untangle the lines and recover over 80% of the crop.

Loch Eil's calm and sheltered waters are ideal for mussel larvae to settle. In recent years, over-settlement has been so heavy that the droppers become overloaded. Harvesting 8 tonnes of market-sized mussels can involve handling up to 14 tonnes in total, including over-settled spat.

Alan Byrne inspecting a Loch Eil line laden with mussels.

Alan shows us a crop line packed with mussels. The excess spat is screened and re-seeded at a density of about 450 mussels per metre of rope. While this strong natural settlement ensures a reliable supply, it also creates some problems—such as extra flotation needs and crop slumping, when the heavy mussels drag the droppers downward.

To manage slumping, the Byrnes use a portable conveyor system that attaches to their barge. Alan is also exploring options to sell surplus seed to other Scottish growers.

At the heart of the Fassfern Farms operation is *Veronica*, an 18-metre aluminium mussel barge built in France. The barge is fitted with an Ansco declumper, conveyors, and screens for on-board processing.

Veronica mussel barge built in France. Fassfern Farms mussel lines in background.

Fassfern's harvest season runs for about ten months, from June to April. Each week, Alan and Lawrie complete two harvests of 8 tonnes each. They work closely with the Scottish Shellfish Co-operative, which organises collection and transport. The co-op sets weekly intake targets to keep product flowing steadily to retail customers.
The brothers use a mobile telehandler on a concrete slipway to offload one-tonne bulk bags of mussels directly from the Veronica. This practical method cuts infrastructure costs and allows quick turnaround with minimal labour.

Salmon farming dominates Scotland's aquaculture industry, but this benefits mussel growers like the Byrnes. Decommissioned salmon-farm gear - such as anchors, chains, pontoons, and walkways - can be reused for a fraction of the cost of new materials. Alan says Fassfern now has "enough equipment for a lifetime of projects," most of it bought at or below scrap value.

Operations

The Byrnes used to both collect and grow mussels on the same site. In recent years, however, they've developed a multi-site system that takes advantage of each loch's unique conditions.

- **Loch Eil:** Enclosed, lower salinity, strong spatfall, some juvenile losses in autumn.
- **Loch Sunart:** Moderate salinity, limited natural spat, prone to tubeworm fouling after 14–24 months.
- **Loch Linnhe:** More exposed, strong tidal currents (up to 1 knot), moderate spatfall, limited capacity.

The Byrnes transfer the mussel stock, mainly between Loch Eil and Loch Sunart, at key stages of their growth:

1. Spat Collection: In April, continuous collector ropes are deployed in Loch Eil. By early July, these ropes are densely settled with spat (mainly within the top metre).

2. Interseeding and nursery phase:
   Before autumn die-off (August–September), the spatted ropes are removed and coiled into bulk bags. The brothers reseed the ropes across four farms in Loch Sunart using a driven wheel seeder.
3. Re-distribution of final seed:
   After 6–8 months, the Byrnes strip around half of the mussel stock and return it to Loch Eil for final grow-out. The rest stays in Loch Sunart to grow out to market size.
4. Early Harvests:
   Tubeworm fouling peaks in Loch Sunart around July–August of the second year, so all crops are harvested from Loch Sunart from June to late August.
5. Mid to Late Season Harvests:
   From September onwards the Byrnes swap their harvest focus to Loch Eil. Harvest of sales mussels from Loch Eil continues through to the end of the season in April of the following year.

This flexible, multi-site system helps the Byrnes make the best use of local conditions and to spread biological risks. On average, they harvest 16 tonnes of sales mussels each week over ten months.

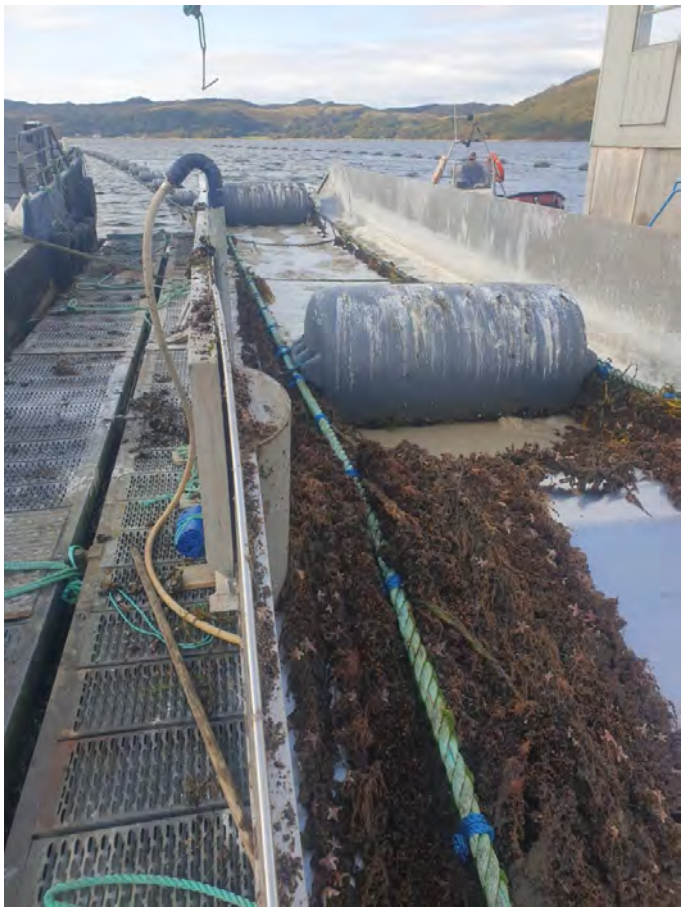
Aerated lime trough on dumb barge fabricated from re-purposed salmon farm walkways

A standout feature of the Fassfern Farms operation is their aerated lime bath, used to control starfish that prey on mussels.

Starfish larvae often settle on mussel ropes at the same time as mussel spat. They are hard to spot at first but quickly grow to around 30 mm size and can strip a dropper clean in just a few weeks.

To control starfish predation, the Byrnes use a dumb barge equipped with a 12,000-litre trough filled with aerated hydrated lime. They initially mix in one 25 kg bag of hydrated lime (calcium hydroxide) per 1,000 litres of water - a total of twelve bags. A mobile air compressor (Atlas Copco XAS 315) pumps air through a manifold at the base of the trough to keep the lime in suspension.

The barge is lashed to the *Veronica* on one side. A small workboat lashed on the opposite side is used to help guide the barge along the longlines. Alan and Lawrie operate these by hand, adjusting speed and alignment as the droppers are drawn slowly through the lime bath. Each dropper stays in the aerated lime solution for about 45 seconds. A 220-metre line takes roughly 45 minutes to treat. The Byrnes add further hydrated lime to the tank after every line or two, to maintain the strength of the treatment. Video: Fassfern farms - Aerated Lime Bath



Droppers being drawn up and through trough as barge moves along line. Mussel barge (left) and workboat (right) used to control alignment and pace of treatment to provide 45 seconds of immersion.

The hydrated lime treatment is simple and effective. 45 seconds of exposure to the highly alkaline waters in the tank causes most starfish to fall off immediately. The few that remain drop away within a few days. The mussels are not harmed.

Hydrated lime has been used for over a century by marine farmers to control pests like tunicates and starfish. The Byrnes adapted their aerated lime system from Shetland growers, with input from Cameron McLean and Douglas Wilson of Inverlussa, Isle of Mull. Canadian studies between 2007 and 2009 (*source link*) assessed 30 seconds of immersion, but Shetland mussel growers have found that 45 seconds works better for this application.

Environmental monitoring in Canada found that the pH of seawater adjacent to the lines reduces to ambient levels within a few metres. In addition, the Canadian researchers found no negative impacts on water quality the benthic environment or to non-target organisms.

Fassfern Farms demonstrates how a dedicated team can succeed under challenging environmental conditions. Key learnings from their operation include:

1. Optimisation for Consistent Supply:
   Keeping up a steady weekly harvest requires a high degree of planning and control. It shapes how the Byrnes arrange and manage their farming system.
2. Multi-Site Integration:
   Using several farm sites in different environments spreads risk and takes

3. advantage of each location's strengths. Transferring stock between lochs optimises growth and addresses risks of die-off and fouling. However, each transfer comes with labour and operating costs.
4. Pest Control:
   The aerated hydrated lime bath is a simple and low-cost treatment method that can control starfish effectively. It does not harm the mussels and has no detectable environmental effects.

The Fassfern operating model is flexible and low overhead. It shows how a dedicated team can successfully deliver a steady supply of mussels through the year by making smart use of multiple sites with differing growing conditions and pest profiles.

Acknowledgements
Special thanks to Alan Byrne for sharing his time and experience at Fassfern Farms, and to Joe Franklin (Quality Equipment) for helping organise the visit.

By Kevin Oldham

Closing the First-Response Gap in Aquaculture Spill Incidents

In marine aquaculture, the margin between a manageable operational incident and a serious environmental event is often measured in minutes. Fuel transfers, hydraulic hose failures, minor vessel collisions, and routine maintenance mishaps are part of working on water. When they occur within a farming grid, however, even a relatively small diesel release can spread rapidly across pens and mooring systems, adhering to nets and floats before crews fully assess the situation.

Once contamination begins moving through a site, consequences escalate quickly. Stock may be exposed or tainted. Nets and collars can require cleaning or replacement. Regulators may require formal reporting and follow-up investigations. Production schedules are disrupted, staff are diverted from core operations, and the reputational impact can extend far beyond the physical footprint of the spill.

For many operators, the true cost of an incident is not determined by the volume released, but by how quickly containment begins.

The difficulty is that many aquaculture sites are remote and environmentally exposed. External spill response contractors may be hours away. Weather conditions can delay access. Traditional containment systems designed for ports and terminals often require cranes, specialized vessels, or larger crews to deploy. In practice, the outcome of most marine farming incidents is decided long before outside assistance arrives.

This period, the first five to fifteen minutes following detection, represents what operators increasingly recognize as the critical response gap.

Historically, spill response planning has focused on mobilizing significant equipment once an event is confirmed. While appropriate for large industrial releases, that model does not always align with the operational realities of marine farming. At a working aquaculture site, the priority is immediate source isolation. Preventing spread while the spill footprint is still small dramatically reduces downstream impact.

In response to this need, a new category of lightweight, modular containment systems has emerged. Systems such as the HARBO T6 UHD, originally developed for rapid deployment in industrial and port environments, are now being integrated into aquaculture response planning. Unlike conventional boom stored in large reels or containers, cartridge-based systems can be staged directly at fuel transfer areas, service wharves, or barge landing points and deployed by one or two crew members without heavy lifting equipment.

Because they can be launched from small workboats or directly from a dock, containment can begin within minutes. Operational exercises conducted in cooperation with regional authorities have demonstrated this in practical terms. In one recent drill, a containment cartridge staged on a wharf enabled fifteen meters of boom to be deployed in approximately six minutes. In dynamic marine conditions, that time difference can determine whether contamination remains localized around a vessel or spreads across an entire pen array.

Engineering considerations are equally important. Aquaculture farms are rarely located in calm basins. Many operate in tidal channels or exposed coastal zones where wind and current are constant variables. Containment systems must balance compact storage and rapid deployment with the structural integrity required to function in active water. Systems that are too light to maintain position are ineffective, while systems that are too heavy or complex to deploy create delay. Designs like the HARBO platform seek to address this balance by combining high-density storage with durability in moving water, enabling realistic first response rather than theoretical capability.

Another development shaping the future of spill preparedness in aquaculture is the growing integration of automation. Farms are increasingly incorporating remote monitoring, sensor networks, and automated feeding systems. It is a natural progression to examine how autonomous or remotely operated surface vessels may assist in environmental response. Lightweight containment systems can be positioned or towed by small, unmanned platforms, allowing rapid deployment without exposing crew to hazardous conditions. When paired with compact boom systems, autonomous vessels offer the potential for faster source isolation and improved manoeuvrability within tight pen configurations.

Regulatory expectations are also evolving. Across global aquaculture markets, authorities are placing greater emphasis on demonstrated preparedness and environmental stewardship. The ability to show documented, on-site first-response capability, rather than reliance solely on external contractors, strengthens compliance posture and reflects operational maturity.

Ultimately, the shift underway is one of mindset. Spill response in aquaculture is moving from a model centred on large-scale mobilization toward one focused on immediate intervention. The goal is not simply to respond effectively, but to respond instantly.

In an industry built upon the health of the marine environment, closing the first-response gap may prove to be one of the most important operational advancements of the coming decade.

If you would like to know more, please contact Mike Kitchin at Pivot Risk Solutions – 021 029 89927 or mike.kitchin@pivotrisksolutions.co.nz. Mike is the New Zealand representative for Harbo Inc.




The Greenshell™ mussel industry – leaps and bounds ahead of European counterparts

Late last year I was once again lucky enough to travel overseas and see how mussels are farmed elsewhere. As with 2024, I visited farms in Europe, but this time in France and Greece.

France

The first country I visited was France. The method the French use for farming mussels, known as "bouchot culture" is unique, and has deep roots, tracing back to the 13th century. It involves wrapping mussel covered ropes around vertical poles that are driven deep into the sand in the intertidal zone.

The rationale behind this approach is that these vertical poles keep the mussels safe, free from predators, and sand free, which is great for consumers.

Rows of bouchot poles in the intertidal zone of the Brittany coast, with spat catching ropes next to them

Spat are sourced on ropes or meshed collectors, which are then wrapped around the poles and left to grow for 12 to 18 months. This method of farming involves lots of specialised equipment, including mussel barges on wheels.

While productive, this method of farming faces several challenges, such as variable wild seed supplies, summer mortality, and high levels of bird predation. Mussel farming in New Zealand takes place at a much more industrial scale.

Greece

My next stop was at a mussel farm in the north of Greece, near Thessaloniki, and in the shadow of Mount Olympus.

While the Greeks farm mussels using suspended culture methods, which may look familiar to us, the technology involved is decades behind.

Mussel barges look different in France

Here they don't seed mussels onto ropes, instead they fill up tubular mesh nets with mussels creating mussel sausages and hang them off the backbones in 1 – 2 m individual lengths.

Suspended culture mussel farms at the base of Mount Olympus near Thessaloniki

Amazingly, seeding, stripping, and reseeding is all done by hand with manual labour on rudimentary seeding tables. Like France, production in Greece is struggling with summer mortality, declining wild seed availability, and predation – but in this case by protected sea turtles, which bite straight through the seeded droppers.

Seeded mussel droppers at a mussel farm in Greece

It's incredible that they are able to have a profitable industry which such labour-intensive farming practises.

Clearly mussel farming in New Zealand takes place at a much more technologically advanced, industrial scale.

- *Brad Skelton, University of Auckland*

Durable plastic mesh nets used to farm mussels in Greece

A Week of Climate Collaboration

As Climate Action Week Marlborough 2026 draws to a close, the week leaves behind a strong sense of momentum, connection and shared purpose.

Across five days, the programme travelled from soil to sea, from vineyards to ports, from compost systems to seagrass meadows, and from emissions accounting to intergenerational responsibility. What emerged was not just a series of events, but a set of clear and compelling themes shaping the region's climate response.

Land diversification and soil health were reinforced as foundations of economic resilience. Electrification and decarbonisation were recognised as priorities that must accelerate structurally, not symbolically.

Mountains-to-sea restoration stood out as a unifying framework for flood mitigation, biodiversity recovery and water quality. Waste streams were reframed as future feedstocks within a circular bioeconomy. And perhaps most importantly, awareness, storytelling and shared responsibility demonstrated their power to shift thinking from "I" to "We".

Climate change is visible.
It is complex.
And it is not unsolvable.

What gives confidence is the depth of expertise and willingness across the region. Industry leaders, iwi, scientists, councils, port representatives, designers, growers, conservationists, community leaders and the next generation all came together to ask meaningful questions and explore practical solutions.

A heartfelt thank you goes to the week's sponsors and partners — Yealands, WM and Living Earth, Marlborough Express, NZ Wine, Marlborough Wine, Marlborough Chamber of Commerce, Marine Farming Association, Mitre10 Trade, Mission Zero and Bowater Toyota — whose support made the week possible. Their backing enables the conversations and collaborations that continue to emerge and evolve.

Moments captured throughout the week reflect site immersions, workshops, panel discussions, Green Drinks gatherings, short film screenings and coastal restoration conversations.

Each contributed to a growing sense that while Climate Action Week began as a Marlborough initiative, the 2026 discussions signal something broader — a Top of the South opportunity grounded in collaboration, infrastructure development and nature-based solutions.

The real work now begins: aligning, integrating and implementing.

- Catherine Van Der Muelen

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* Snacks are provided, please BYO lunch.

New Zealand Government

Simple rules for boaties when interacting with whales and dolphins

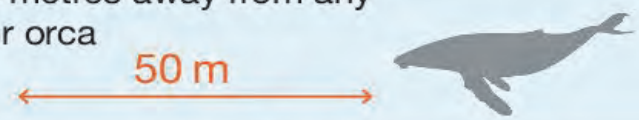
Don't travel faster than idle or 'no wake' speed within 300 metres

No more than 3 vessels within 300 metres

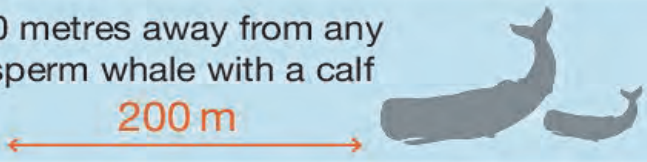
Do not obstruct their path. Approach from a parallel/ slightly rear direction

Do not swim with dolphin pods containing juveniles

Stay 50 metres away from any whale or orca



Stay 200 metres away from any baleen/sperm whale with a calf



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