



**MARINE FARMING ASSOCIATION**  
To Promote & Nurture Sustainable Marine Farming

## WINTER 2024 NEWSLETTER

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## IMPORTANT DATES

**ECSC meeting**  
6 September 2024

**Board meeting**  
11 October 2024

**Q4 Light audit due**  
31 October 2024

## President's Comment

Who would have thought a year ago that this was going to be a headline!

### **“Marine Consents Extension Bill Hailed as a Game-Changer by Aquaculture Industry”**

The answer I'm sure is none of us in the industry, however there was one man and one political party.

The headline refers to the Resource Management (Extended Duration of Coastal Permits for Marine Farms) Amendment Bill, which successfully passed its third reading in Parliament on the 27<sup>th</sup> of August 2024. This landmark piece of legislation will provide the long-awaited certainty and economic stability that the industry has been advocating for over several decades.

Under the new law, all existing coastal permits for New Zealand's 1200 marine farms will be extended by up to 20 years, but not beyond 2050. This transformative legislation is welcomed with open arms by industry.

I commend NZ First and Minister Jones for recognising our potential and taking decisive action, as we know previous Governments have over-promised and under-delivered, leaving us bogged down by red tape and unnecessary costs. With some regulatory relief underway, the Minister has challenged all of us in the industry to 'pay back' this support through increased productivity and export revenue – I look forward to seeing how the industry responds!

Without the law change, an estimated \$6 million would have been spent this year alone on re consenting 200 marine farms nationally. That money will now be redirected into valuable investments, such as spat supply, adopting new practices and technology to boost productivity and sustainability in a sector poised to drive export growth in the coming years.

While most farms in the top of the South were provided for with Aquaculture Management Areas (AMAs), this new legislation is a real win for the 18 farms deemed to be 'inappropriate' in Marlborough, and for the nationally significant spat sites in Wainui Bay.

Another very successful AGM and conference day was held in August, kicking off with the MSQP and MFA AGM's then, followed by a very interesting array of speakers covering off industry topics.

We have received positive feedback from those that attended, and of course, the longer breaks were popular allowing plenty of time to catch up with others from the industry and suppliers alike.

The day was concluded directly after the conference with drinks and nibbles then the annual MFA awards.

Once again, we were impressed with the high calibre of the award nominations, with some very worthy recipients just missing out (but there's always next year!). It was especially pleasing to announce a new award this year - the Ivan Godsiff Memorial

Award. There is full report on the awards later in the Newsletter, so I won't go into too much detail here, but I do want to acknowledge Kenneth Nichols, Brian Godsiff and Aaron Panell as the recipients of the major awards, a truly talented and hardworking bunch.

We have a new MFA Vice President for 24/25, so please congratulate/thank Mark Burnaby from MacLab next time you cross paths. I know Mark will do an excellent job and it's great to have a Nelson-based asset once again. I must also thank the departing VP Gary Brown, who has been excellent in the role. Gary is still on the Board and we will continue to lean on him for his financial acumen (as a former accountant). A big thank you to the remaining board members also who have signed up for another trip around the Sun.

On the farming front we all wait with bated breath for a decent spat fall on Ninety Mile Beach. At the time of writing, so far this season there has only been small landings, often with often mixed quality. With some hope and support from the weather gods, September and October will produce some quality spat for us all to fill up our nursery space.

All the best for the Spring,

*Jono*

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### Full Page Advert

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## Marine Farm Compliance Audit Programme

**Declarations are Due  
31st October 2024**

If you have not sent in your declaration  
for the 4th quarter,  
please do so as soon as possible



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

November, December, January (1)

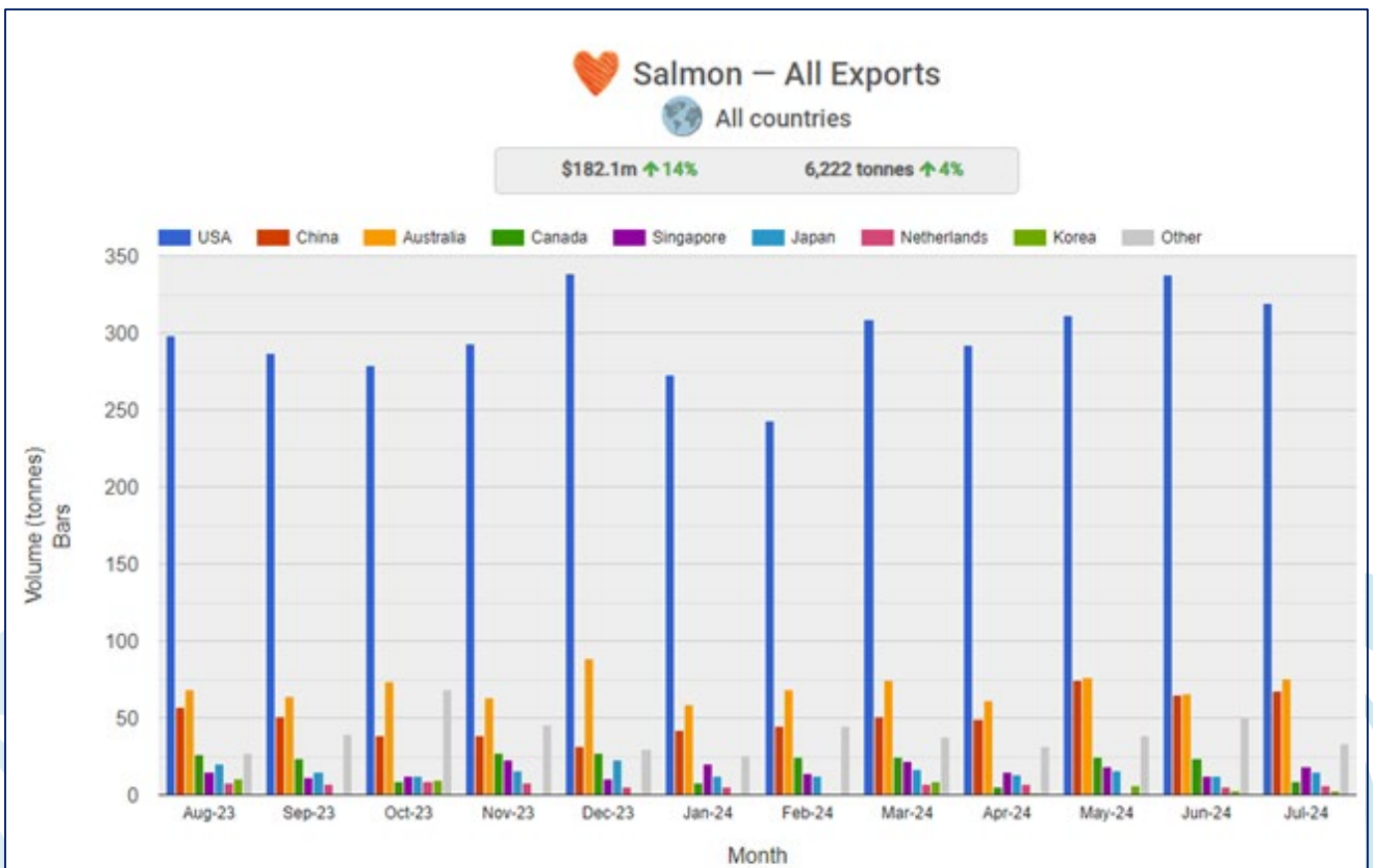
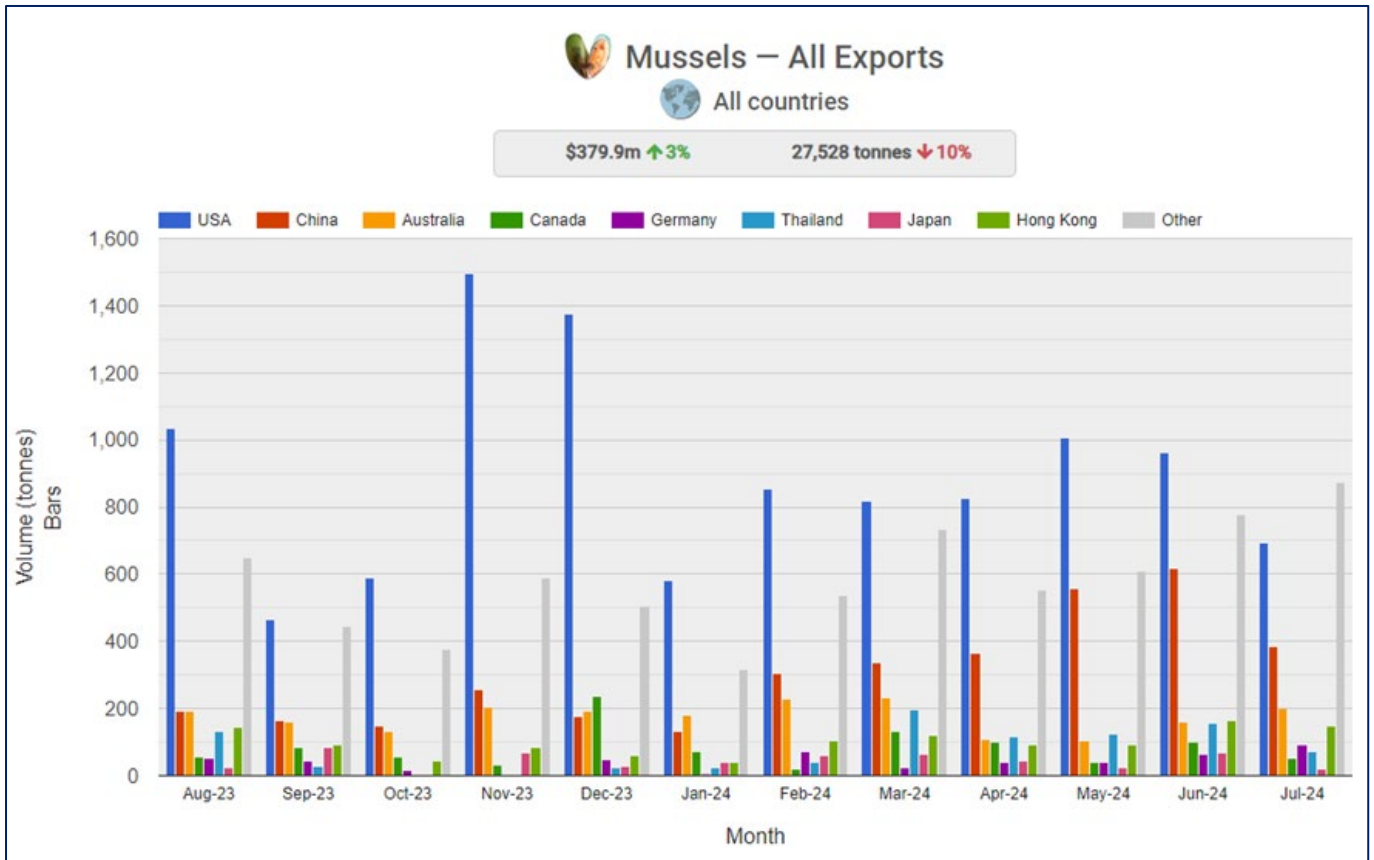
February, March, April (2)

May, June, July (3)

**August, September, October (4)**

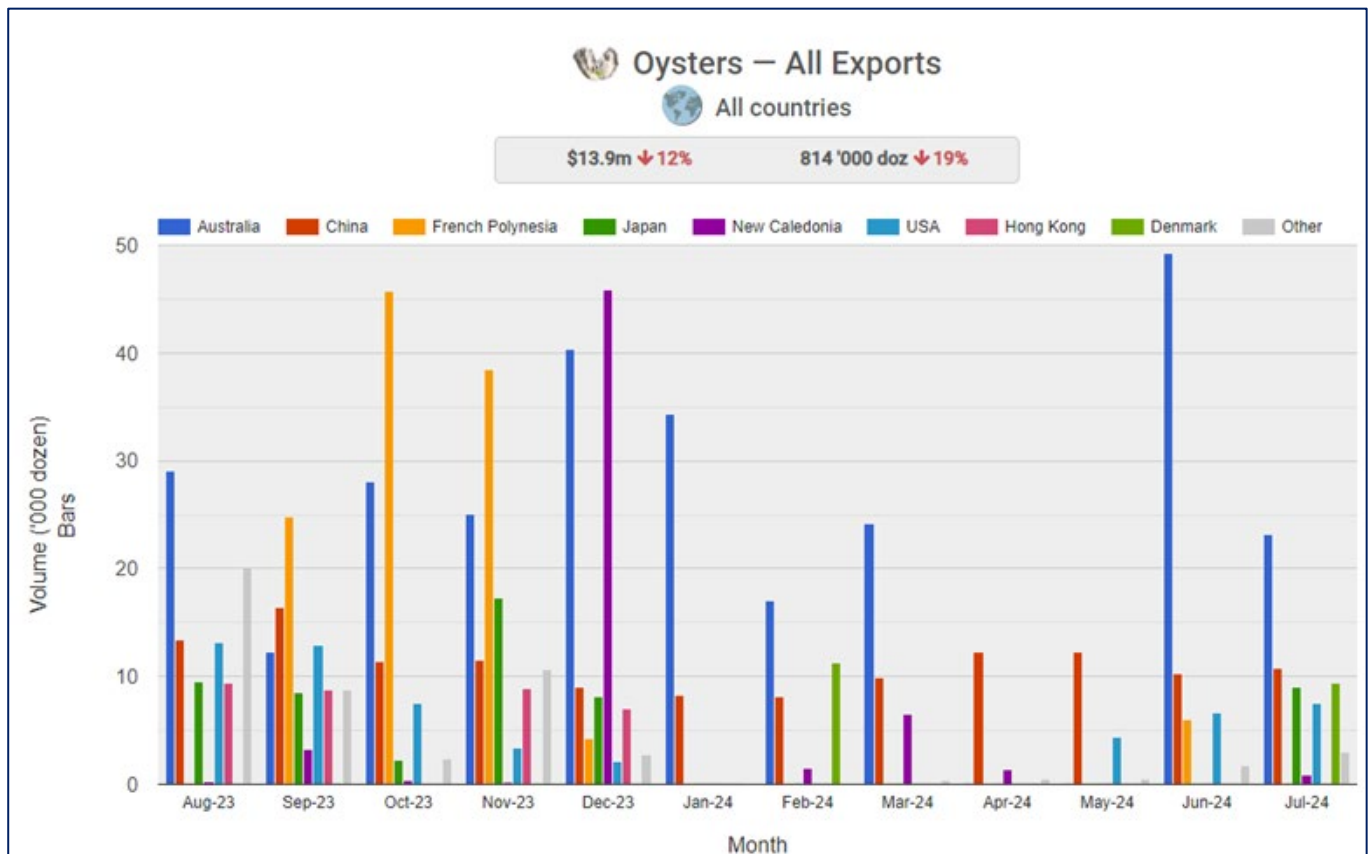


## AQNZ Export Stats





## AQNZ Export Stats



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**MEDIA RELEASE*****For immediate release*****Marine Consents Extension Bill Hailed as a Game-Changer by Aquaculture Industry**

The aquaculture industry is applauding the passage of the Resource Management (Extended Duration of Coastal Permits for Marine Farms) Amendment Bill, which successfully passed its third reading in Parliament on Tuesday. This landmark piece of legislation will provide the long-awaited certainty and economic stability that marine farmers have been advocating for over several decades.

Under the new law, all existing coastal permits for New Zealand's 1200 marine farms will be extended by up to 20 years. This transformative legislation has been welcomed with open arms by industry.

Jonathan Large, President of the Marine Farming Association, expressed his appreciation for the Government's commitment to the sector.

"Having worked in the mussel industry for over 30 years, this level of support from the Government is unprecedented. I commend NZ First and Minister Shane Jones for recognising our potential and taking decisive action."

He added, "Previous Governments have promised much but delivered little, leaving us bogged down by red tape and unnecessary costs."

Without the law change, an estimated \$6 million would have been spent this year alone on reconsenting by 200 marine farms. That money will now be redirected into valuable investments, such as adopting new practices and technology to boost productivity and sustainability in a sector poised to drive export growth in the coming years.

John Young, Managing Director and CEO of Clearwater Mussels Limited, emphasised the importance of the new legislation, highlighting the significant impact it will have on the industry's future.

"To date, Clearwater has spent \$3 million just to renew existing water space, with a third of that amount lost in the process. This has been a complete waste of resources, both financially and mentally. This Bill is crucial—it brings the fundamental change we need to move away from the despair caused by the current stifling regulatory process. It will allow us to focus on growing our industry rather than fighting for survival."

"As a company, we are working tirelessly to help achieve the Government's national aquaculture goal of \$3 billion by 2035. We believe this target is within reach, but only if we're not held back by over-regulation. This Bill will clear the path for us to innovate and expand without being shellshocked by bureaucracy."

Tony Hazlett, CEO of Talley's Limited, hails the bill as a game-changer for the aquaculture sector, praising it for the robust security and stability it promises to deliver.

"Talley's, a leading processor of mussels, is thrilled with the decision to secure the future for the aquaculture sector. This move not only ensures our continued investment in

infrastructure but also supports job creation and boosts much-needed export revenue. We've always been aware that renewal processes can disrupt the industry. Now, with this certainty, we can focus our energy and resources on value addition and innovation to propel the industry forward."

"I congratulate Minister Jones and the Government for their foresight and actions to secure a future for our industry."

For communities dependent on aquaculture, the Bill promises enhanced job security and economic stability.

Johnny Arbuckle, a skipper for Clearwater Mussels is relieved to finally have job security for his family.

"As a younger person in the industry, I now feel a lot more confident that my job won't just go tits up. I have a wife and three kids at home, and the ongoing consent issues have always worried me about potentially losing my job."

"I remember when Clearwater lost their farm in Port Gore and how swiftly it all happened. This Bill has my family and I over the moon."

Helen Cave of EEC Ltd and Southern Seafoods Ltd on Stewart Island welcomed the Bill, noting its importance for local prosperity.

"We wholeheartedly welcome the extension of marine farm permits, as it brings much-needed certainty for the coming years. Aquaculture is a vital part of the Stewart Island economy, fostering stability that encourages more families to settle here, supporting our schools and essential services."

The Bill also aims to bolster the countries already strong international reputation for producing sustainable seafood.

Simon Pooley, Director of Waimana Marine, praised the Bill for ensuring long-term tenure and boosting sustainability.

"Mussel farming is a model of sustainability and efficiency, and we are profoundly grateful and thankful for the recognition as the lights go on around our nation as our people and leaders acknowledge that we have something to be truly proud of."

Gary Hooper, CE for Aquaculture New Zealand, echoed the industry's widespread enthusiasm for the promise the Bill holds.

"Aquaculture in New Zealand is a compelling proposition. We produce delicious nutritious seafood loved at home and revered by chefs around the world. Our sustainable practices are recognised internationally. We are at the heart of many regional communities and Iwi Māori ambitions."

"The Bill to extend the term of marine farm consents will allow the industry to put more resources into productive pursuits creating more jobs, more export earnings and accelerate the sector towards its inherent potential."



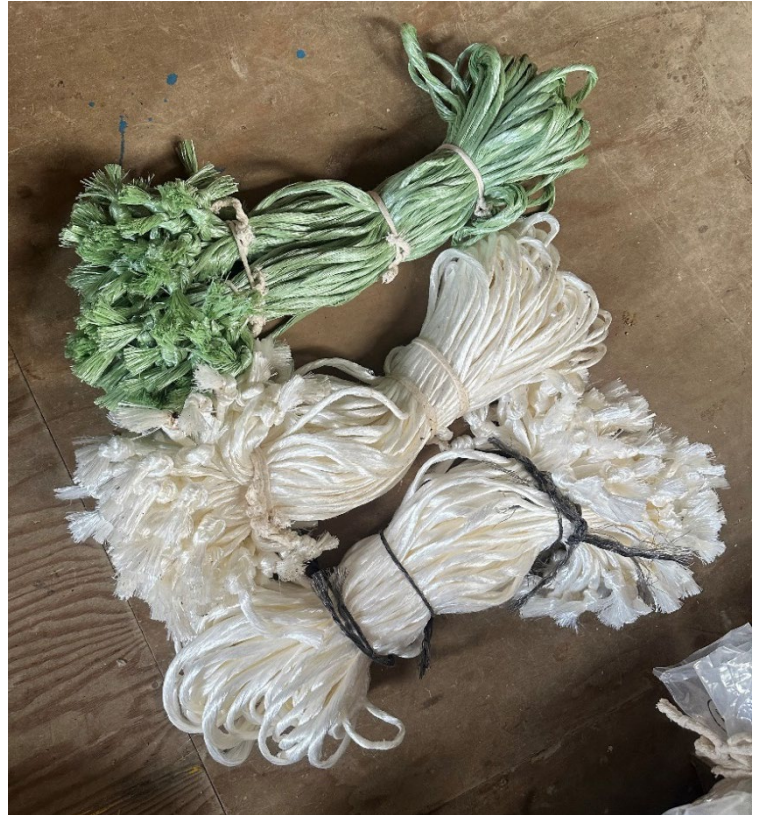
## Biodegradable ties hang tight

Trials of biodegradable ties on three Sounds marine farms have come through without a single failure, says Waimana Marine's Simon Pooley.

He hopes it paves the way for other mussel farming companies to adopt the biodegradable ties as he now moves towards trials of biodegradable rope.

Northland company Extrutec is no stranger to biodegradable twines and ropes, it has been producing compostable products for the horticulture industry for the last 10 years.

In 2020, the MFA and AQNZ committed to supporting an industry-wide coordinated effort to reduce plastic pollution, including looking at alternatives such as biomaterials. Last year Extrutec gained support via the MFA Contestable Fund to work with Waimana Marine, Plant and Food Research and Auckland University to develop and trial marine biodegradable ties and rope.



Extrutec Managing Director Joe Wiid had already been working with Simon Pooley and Waimana Marine, with the first ties produced nearly four years ago.

"Simon's been the guy leading the pack for marine farmers," says Joe.

Under the MFA funding, the bioplastic ties were subject to rigorous trials starting last October at farms in Bulwer, Forsyth Bay and Anahoka. Simon Pooley says 100% biodegradable ties were used on trial lines.

"Our trials had no failures at all right across that range of sites."



*Simon Pooley of Waimana Marine Limited*

Auckland University did regular analysis of the ties. "We had to give them ties at regular intervals and they would measure the biodegradation." The university staff also tested the biodegradable plastic ties elasticity and strength. "It needs to stay strong long enough to do the job."

Simon says Waimana Marine will look to use the biodegradable ties as final ties for his crop this season.



He is now keen to see other marine farmers pick up the biodegradable option.

"Once we get a couple of other companies on board it will carry on with its own momentum." He says he also expects to start trialling biodegradable ropes this season up to 16mm.

Extrutech is already producing 5-7mm biodegradable ropes. Initial testing of biodegradable 12mm dropper lines

started a couple of years ago and Joe Wiid understands some also will be trialled this year.

"It's difficult to develop but as the scale becomes larger it becomes more cost-effective," he says.



His rope and ties are made with biopolymers and some organic materials. He says there are a few producers trying to develop marine biodegradable rope, but none were yet mainstream. "It's going to take an industry effort to sort all the issues."

The impact of the marine environment was just one consideration. Conventional marine rope was made to last up to five years or more. It can't easily be recycled due to the materials used and the biofouling the rope attracts.

"The challenge has been to develop a biodegradable product that is fit for

purpose (i.e. strong and durable) but where the lifespan can be controlled and when it eventually degrades, no harmful micro plastics are created."



The Government's Aquaculture Strategy released in 2019 identified plastic waste and pollution as a key global environmental issue which needed to be addressed to achieve the industry's goals.

- **Brendon Burns**



*Joe Wiid of Extrutec*

An aerial photograph of Port Marlborough. The harbor is filled with numerous boats in a large marina. The town of Marlborough is visible along the waterfront, with buildings and parking areas. In the background, there are large, green hills under a clear blue sky. The Port Marlborough logo is in the top left corner.

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## Stopping fish from eating mussels

Fish predation is a major issue for Greenshell™ mussel farmers throughout the Coromandel, where species such as snapper and parore are particularly abundant. As part of MPI funded project with support from Coromandel mussel farmers, the University of Auckland has been tasked with assessing the extent of fish predation on mussel farms in the Coromandel, identifying the responsible species, and developing practical strategies to mitigate the problem.



Our research to date has shown that snapper are primarily responsible for crop losses on mussel farms, with parore contributing to a lesser extent. The project has also confirmed industry reports that the extent of crop losses due to fish predation varies widely, ranging from minimal impact to complete removal of the crop. Now that we know the fish species responsible, we are focusing on developing practical strategies to address the problem.

One approach that has often been highly effective when trialled overseas is physical exclusion, effectively fencing off farming areas to prevent fish from entering. Due to this success we decided to trial a similar approach here. To achieve this, our PhD student Cary Mason designed an experiment to test the effectiveness of two levels of physical exclusion at deterring fish predation on mussel farms.

The first level of physical exclusion he assessed was the humble cotton stocking. He imported newly developed “anti-predation” cottons from Australia and tested them alongside cotton routinely used by the industry. He then randomly assigned sections of line seeded with each of these cottons to one of three additional levels of protection: a control with no additional protection, a treatment with partial protection which was comprised of mesh cages with holes cut out, and a full protection treatment that consisted of mesh cages that completely excluded fishes (Fig. 1).



**Fig. 1.** Photograph of predator exclusion cages being attached to seeded dropper line in the Coromandel

The results were surprising. Firstly, the different cottons made no difference, even the “anti-predation” cotton. Crop losses due to fish were consistent irrespective of the cotton used to seed the lines. However, the major differences came from the different levels of protection provided to protect the mussels from the fish. Those lines in the control treatment that had no protection from fish lost 86% of their initial seeding densities after only 45 days, compared to lines in the partial and full protection treatments that did not lose any. Clearly physical exclusion works. These results are shocking for the industry. While this is primarily a Coromandel problem for now, as waters warm and snapper head south, fish predation is likely to become more of an issue for those in the Marlborough Sounds too (Fig. 2). Evidently a strategy for limiting fish predation is desperately needed.



**Fig. 2.** – Underwater photographs showing snapper feeding on the unprotected dropper lines within minutes of seeding and the barge driving away.

While this study was only experimental, and mesh cages clearly won't be a practical solution for the industry, this research shows that predator exclusion works. Shellfish farms throughout the world routinely have nets installed around them to prevent predation, and here in New Zealand, we routinely protect crops on the land, so why not at sea too? Even if there are costs associated with resource consenting, installation and maintenance, surely that will be better than losing 86% of interseed mussels.

Cary's next experiment will focus on testing whether underwater sound of varying wavelengths and frequencies can be used to deter fish from entering mussel farms. It might sound far-fetched, but colleagues overseas have found that such an approach has managed to deter fish predation on mussel farms for up to five years before fish became accustomed to it. Therefore, Cary's work will focus on developing random sounds that change continuously to try and prevent fish habituation.

Stay tuned.

**Cary Mason & Dr Brad Skelton**

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[Brad.Skelton@auckland.ac.nz](mailto:Brad.Skelton@auckland.ac.nz)

**The University of Auckland**





## First Hybrid Skipper Restricted Limits course is a success

Skipper Training NZ has successfully delivered the first-ever hybrid course for the New Zealand Certificate in Domestic Maritime Operations (SRL). This innovative program significantly reduces the time students are required to be away from home and work and marks a significant step forward for crew training in the industry.

The Hybrid SRL course offers students the flexibility of remote learning through a workbook and assessments with professional tutor guidance. This is followed by a focused week-long session on Skipper Training NZ's training vessel to complete practical components and their Training Record Book (TRB) with the help of a tutor/skipper.

The initial course, concluding in Wellington last month, received high praise from participants for its effective format. The reduced absence from home and work is especially appealing to busy mariners who are comfortable with self-directed study.

A graduate reflects on the course, saying "the home-study component allowed us the time and flexibility to work around individual learner needs and circumstances. By being available for one-on-one chats, and group discussions, we became an effective team prior to attending the successful practical session."

Despite the course's popularity, Skipper Training NZ emphasises that the hybrid model includes a substantial home-study component, which may not suit everyone. Those with learning challenges or a preference for in-person instruction are encouraged to enrol in our program with 5-week block course.

Both the Hybrid and five-week block course programs include completion of the Maritime NZ Training Record Book on our training vessel. This makes it a lot easier for crew who work on busy vessels where the skippers don't have time to train and sign off books.

Skipper Training NZ also caters to mariners seeking to further their careers. The 1-day 500GT Endorsement Workshop is a great option for those who need to complete their Training Record Book to get their 500GT Endorsement.

The next workshop is scheduled for October 11, 2024.

Skipper Training NZ is committed to developing innovative maritime training solutions that meet the evolving needs of students and the industry. For more info:

[www.skippertraining.ac.nz](http://www.skippertraining.ac.nz)







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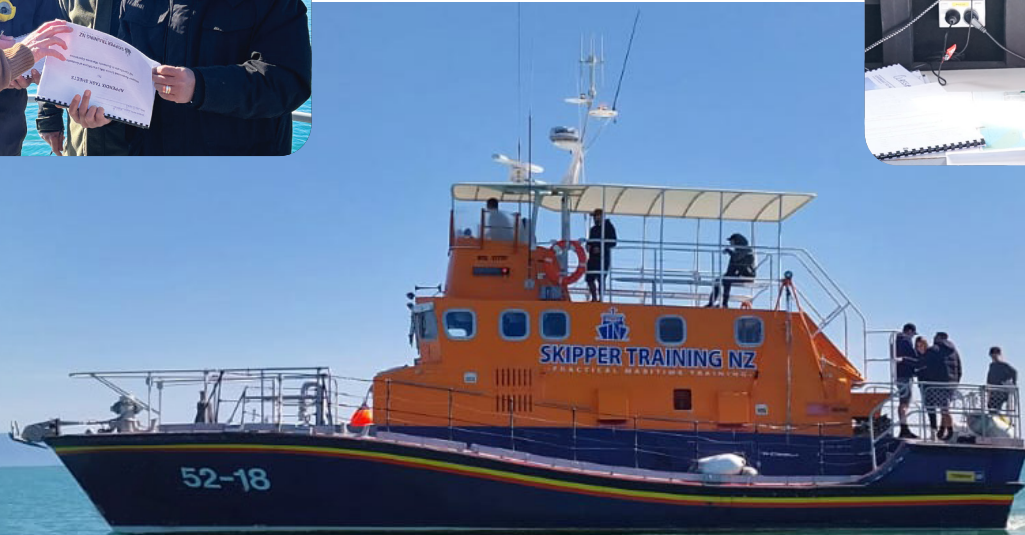


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then going out on the boat to practice it -  
that's what made it make sense,  
even for someone like me, where the theory  
usually goes in one ear and out the other."*

- Jo, 2023 SRL Graduate



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## Oysters are their world

Robert and Margaret Hippolite were in their twenties when they started growing oysters in the Marlborough Sounds.

Rob, with Ngāti Kuia, Ngāti Koata, Ngāti Toa and Ngāi Tahu whakapapa, spent most of his time on the whānau block of land above Matapihi Bay, located 2km from Okiwi Bay - "he wanted to stay on his ancestral land."



The couple lived in the old Hippolite homestead "It had no power, but we soon made it our home." They lived there for 11 years while setting up their aquaculture business but they wanted their own piece of dirt, so each year Margaret would write to John Field (whose family had bought the neighbouring block from Rob's ancestors over a century earlier) asking if they would consider selling some land.

Eventually an acre was sub-divided off and the couple built a home.

Robert and Margaret realised early on they could not make a living from the sheep on the property so looked to other ventures.

One day in 1987 they noticed oyster spat washed up on the beach near their home.

"One of their friends said: Why don't you go oyster farming? We thought; why not?"

Their first research was a National Geographic article, "we read everything we could, and we talked to as many people as we could find."

The couple headed to the Coromandel where they spent some time with Vince Syddall, manager of Pacific Marine Farms (now Moana Seafood). They then continued up to Russell, working for free for a few weeks to learn some of the ropes from oyster farmers there.

Margaret enrolled in an aquaculture course at the University of Tasmania and attended any conferences and workshops available. The Australian industry used hatchery spat and baskets, where-as the New Zealand method was predominately sticks and bags. She later travelled to the USA and Canada to look at hatchery and oyster farming operations.



*Rob working on a North Island oyster farm*



Initially there were no permits available for oyster farms in the South Island. "So, we applied for a hand-picking licence."

Oysters were sourced from an area behind Rabbit Island near Nelson and then transported to a former mussel farm the couple had bought off Bryan Skeggs at Wairangi Bay, Croisilles Harbour.



*Harvesting at Wairangi Bay farm*

"It was a shallow farm at the head of a bay and didn't have the flow for mussels," Margaret recalls. However, the hand-picked oysters hung in netlon bags, as used in the North Island, thrived.

By now, the Ministry of Agriculture and Fisheries had agreed to allow experimental oyster farms in the Sounds. The Hippolites applied for other oyster farming sites including at Matapihi for oyster spat.

Throughout this time, they also bought and developed some mussel farms, but oysters remained their priority.

The old schoolhouse on the whanau property was turned into possibly one of the first experimental algae hatcheries in the Sounds.

"We sold some fabulous mussel farms so we could buy the oyster farms. We just put everything into our business for the first few years."



*Margaret in the algae hatchery in the early 1990s.*



The couple pioneered growing oysters on long-lines like mussels, using a Japanese technique they'd found and adapted. In the intertidal zone at Matapihi, scallop shells were used to attract the oyster spat, which were then secured on wires to the long- lines.



By 1996, the Hippolites and others started a South Island Oyster Farming Committee, with support from the Marine Farming Association.

"It was a big thing, innovation in both oysters and scallop aquaculture was prospering," says Margaret. "Bryan Skeggs and Jeff Marr at Aqua King Ltd and Maurie Hebberd in Croisilles, John and Bruce Turner with Kiwi Oysters in Admiralty Bay, Bob Nicole – United Fisheries some had quite large operations. There were several oyster factories operating in both Nelson and Marlborough."



*Members present at the inaugural meeting of the South Island Oyster Farming Committee.*

*(From left) Jerry McLean, Jill Hearn, Jeff Marr, Ray Thomas, Jim Jessep, Aaron Hook, Bruce Hearn, Margaret Hippolite, John Field, Mike Bull, Michael Davidson. (Absent are Tracey Osborne and Paul Lupi.)*



The Hippolites, trading as Okiwi Bay Oysters, were at this time producing around 60,000 dozen oysters a year.



In 1997, Sealord suggested a joint venture with it doing the processing and marketing. By the turn of the century, Okiwi Bay Oysters was producing 240,000 dozen oysters a year. Mostly selling as frozen half shell into the USA market.

This partnership lasted many years until the mussel markets strengthened and Sealord decided to process mussels only. The oysters were then trucked up to Pacific Marine Farms (now Moana) who processed in both Auckland and Coromandel. Restricted by the freighting capability, production

was reduced to around 80,000 dozen. “We worked in with other farmers in the Croisilles catching spat and harvesting for them “.

In 2010, the oyster herpes virus began knocking the Pacific oyster industry for six, although it took some years to reach the Sounds. “We were not immune to the impact “.

Today, Okiwi Bay Oysters have scaled down only producing for the local market and all their oysters are toll processed locally in Blenheim. Margaret says there is a loyal following for the big oysters they produce, and they can never supply enough to meet demand.

“I’ve even sold them to Bluff,” she says.

Margaret reckons that oysters reflect their environment. “They pick up on where they are grown – like wine from a vineyard.”

She says those her and Rob produce are plump and sweet – being larger they are great to cook, especially in our beer batter recipe.

“It’s so good to see seafood from New Zealand having such a great name. I’m loving how far the whole aquaculture industry has come. It’s especially great seeing people we have worked with or who have studied on our farms having incredible careers in the aquaculture industry.”

Margaret and Rob are still strong advocates for the industry they’ve helped pioneer. Ten years ago, the neighbouring property, from which their single acre had been cut, came up for sale.

“We were fortunate to be able to purchase the 300ha property. That was the dream come true. It’s mostly native bush in the hills and farmland down to the beach. we feel



*Whanau Hamuera Manihera with some of the plump product*

very privileged to be kaitiaki for both the sea and land in the beautiful Okiwi Bay, Marlborough Sounds."

- **Brendon Burns & Margaret Hippolite**

*Margaret and Rob Hippolite*

## 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](mailto:office@marinefarming.co.nz)

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



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## Mains FLUPSY, Solar FLUPSY, Tidal FLUPSY, What the FLUPSY?

Highlighting the ongoing challenges of poor spat retention to Greenshell™ mussel farmers is unnecessary - the industry is already well aware of the problem and the issues it creates. The industry needs solutions, in fact, they needed them twenty years ago.

We know that growing spat to larger sizes before seeding them out significantly reduces spat losses. So, why aren't we adopting this practice? The answer is cost. Raising spat to larger sizes in land-based nursery systems is prohibitively expensive, primarily due to the cost of producing large quantities of live phytoplankton for feeding the rapidly growing, and ravenously hungry spat.

This leaves us with two options: 1) develop cost-effective methods for phytoplankton production or artificial feeds, or 2) create nursery culture approaches that eliminate the need for the production of live phytoplankton altogether. Despite considerable global efforts to reduce phytoplankton production costs, these attempts have largely been unsuccessful and phytoplankton production remains extremely expensive. Therefore, at the University of Auckland, we're focusing on both.

While we have a range of research initiatives in this field, this article will focus on our work with FLUPSYs. FLUPSYs, or Floating Upwelling Systems, are sea-based nursery systems used worldwide for shellfish nursery culture, such as clams and oysters (see Fig. 1). These systems use powered paddle wheels or motors to create upwelling currents, providing spat with a continuous supply of natural food—essentially an unlimited, all-day spat buffet. This eliminates the need for phytoplankton production in shellfish nursery culture and allows spat to be grown to larger sizes quickly and cost-effectively.

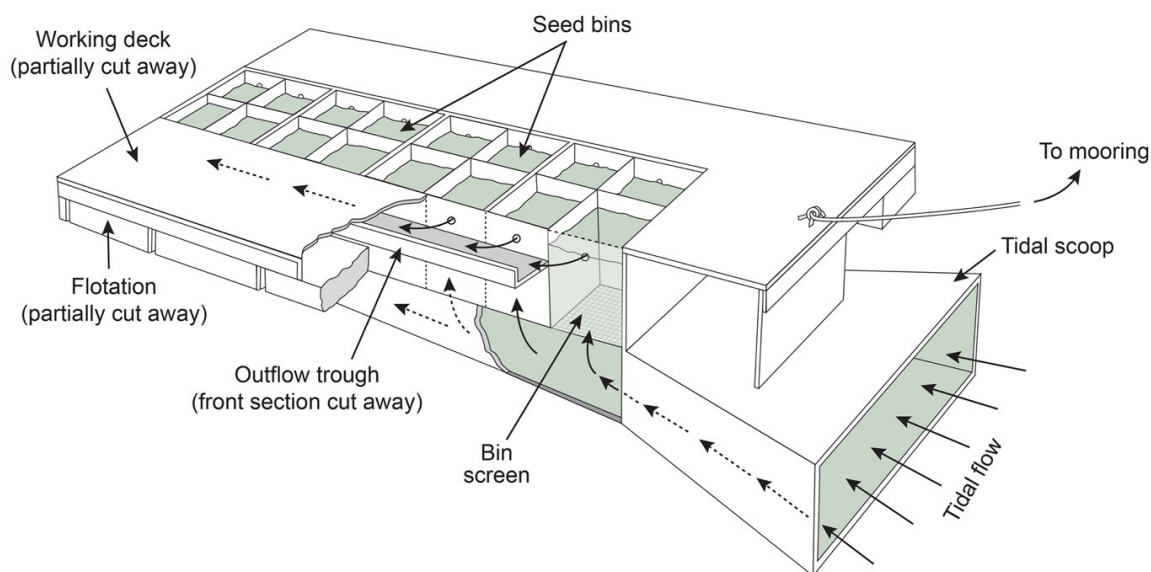
Interestingly, a few years ago, we at the University of Auckland, demonstrated that mussel spat, despite producing byssus threads unlike clams or oysters, can also be successfully grown to larger sizes in FLUPSYs. Additionally, we have confirmed that seeding out with FLUPSY-raised spat can significantly reduce spat losses, achieving a 40% retention rate after six months compared to the industry standard of less than 0.1% after three. However, there is still lots of work to do. We need to reduce mortality of spat being grown in FLUPSYs, particularly small spat, and we need to develop effective approaches for seeding with single seed spat.



**Fig. 1.** A commercial FLUPSY located in San Diego, California.



We also need to develop more cost-effective FLUPSY designs. Currently, FLUPSYs are powered either by mains electricity or by extensive solar power systems, both of which are costly to install and maintain. This is where tidal FLUPSYs come into play. While designs for tidally driven FLUPSYs have existed for decades, none have yet been built or tested (Fig. 2). However, they offer several advantages: they are cheaper to construct and can operate in environments where other FLUPSYs cannot. As a result, we were funded by MBIE to develop and test tidally driven FLUPSYs for shellfish nursery culture.



**Fig. 2.** Design for a tidally driven FLUPSY. Despite the designs existing for several decades, there are no instances where tidal FLUPSYs have worked.

Our initial work focused on building and testing tidal FLUPSY's based on historical designs. The results were extremely disappointing. They didn't work, and there wasn't even enough flow through the system to lift a grain of sand (Fig. 3). Hydrodynamic modelling indicated that the inflow scoop would need to be so large it would extend above the surface and so far down it would scrape on the seafloor...not particularly practical. So, we have started from scratch. We employed a fluid engineering PhD student (Mohamed Salman), along with an expert fluid engineer (Dr Vladislav Sorokin) and we are redesigning the concept of a tidal FLUPSY from the ground up. Currently, we have two new designs that are being prototyped in our engineering workshop and we hope to complete field trials before the end of the year.



**Fig. 3.** Photograph of a modular tidal FLUPSY based on previous designs that was tested at a spat farm in Aotea Harbour.

A common piece of feedback from the industry is that research needs to be practical and scalable. The good news is that FLUPSYs are already in use overseas, supporting large-scale shellfish aquaculture industries. By developing tidal FLUPSY designs that are both cost-effective to manufacture and adaptable to a wider range of locations, we aim to make FLUPSYs viable for use here as well.

**Dr's Brad Skelton & Andrew Jeffs**

[Brad.Skelton@auckland.ac.nz](mailto:Brad.Skelton@auckland.ac.nz)

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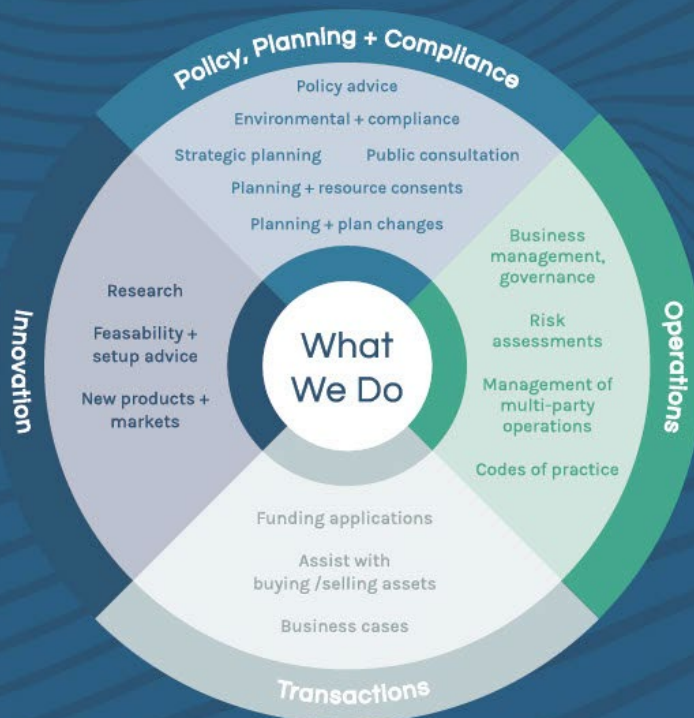


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## Future of Work – Inspiring Marlborough Youth

Aquaculture options were proudly showcased to around 2,000 Marlborough young people at this year's Future of Work youth conference.

MFA were proud to collaborate with Aiden from Marine Farm Management and the Havelock team at Aroma to run the aquaculture "Interactive Workstation" and inspire local youth about all the career possibilities here for them after leaving school.

The highly successful conference is run in partnership between the Graeme Dingle Foundation Marlborough and Marlborough District Council, and sees all Year 7-13 students in the region invited to take part.



The Year 7 and 8s attend to 'plant a seed', with research showing that it helps them make subject selection choices, manage the transition to college, and visualise futures that inspire them and keep them engaged. While the older students benefit from insights that help them make more immediate study and work pathway decisions. Feedback from students noted they previously had no idea that such an array of careers and options existed – or that they existed here in Marlborough!

- ★ *"All the variety is amazing"*
- ★ *"You got to interact in the different careers which really gave you a taste of what it's like"*
- ★ *"I got to learn about a heap of new job opportunities"*
- ★ *"I became interested and curious about some new stuff"*
- ★ *"I have learnt a lot from this experience"*
- ★ *"I really enjoyed learning new things about jobs I didn't know about and more info on jobs I wanted"*
- ★ *"It made me feel more sure about my future"*
- ★ *"Very inspiring"*

The conference also aims to inspire our youth to envisage a future for themselves in Marlborough; to encourage them to stay in Marlborough, or go away to study and travel – and come back. The success Future of Work is having in this area was evidenced by a story about Tegan Benseman which emerged at this year's conference. In 2019 Tegan was a student at MGC who attended the first ever Future of Work event and connected with Dr Sara Simmons there. Sara had also gone to MGC, comes from a background of some significant challenges in her childhood, and went on to be the first in her family to ever to go to University. Tegan explained how this inspired her to see possibilities where she previously hadn't, and she is now back in Marlborough in her fifth year of medical



school, inspiring the next generation – as she served on the Medical and Health “Interactive Workstation” at Future of Work 2024.

The conference has been such a success that it was recognised in two national awards in 2023 – as a finalist in the prestigious national, NZ Events Association awards, and highly commended in the Economic Development NZ “Best Practice Awards”. The Graeme Dingle Foundation Marlborough wanted to note that this was a testament to the tremendous community support, and recognition of the importance of Future of Work for our young people and our region. They pass on their heartfelt thanks to all – like MFA and the aquaculture industry – who have helped make it possible.

### Future of Work by the numbers:

- The 2024 event reached a record number of young people (and their families) – 2,000
- 80+ businesses and organisations were involved
- 78% of students said it helped them with ideas for their personal career pathways
- 71% said it made them feel more confident about their career pathway
- And a whopping 95% of students said they would recommend it to others!



**Thanks to your support via MFA,  
last year we were able to work  
with over 5,000 Marlborough  
young people!** 

**Marine Farming Industry - we thank you!**



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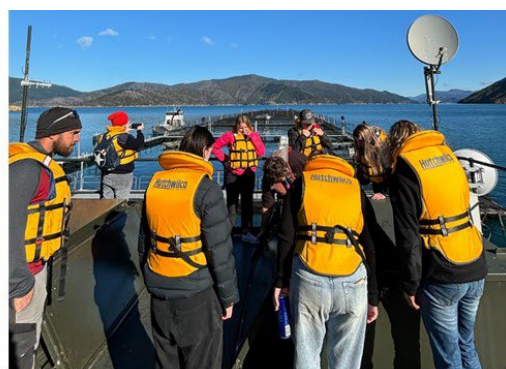
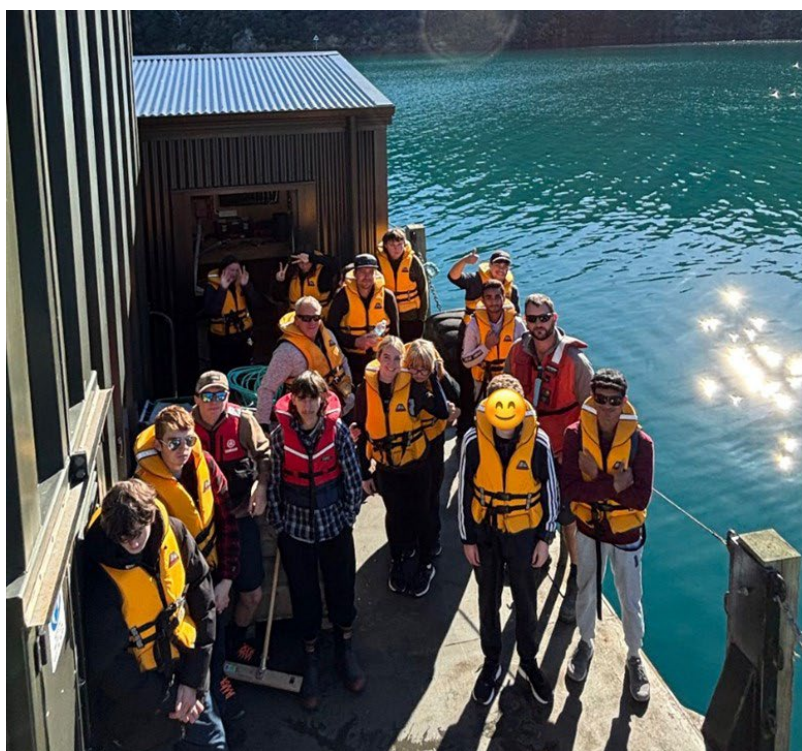
## All about Aquaculture

Marlborough turned on another stellar blue-sky day and experience for the recent Year 12 and 13 Career Navigator 'Aquaculture Day'!

The Port Marlborough team organised to start the day with a visit to the port in Picton. Tug Boat Pilot, Mike came in especially to show students through the boat and talk about his role at the Port, before hearing from Jimmy who spoke about his 20 year journey and the opportunities that port employment has presented to him. This opened student's eyes to a number of new career pathways.

Mark Preece from New Zealand King Salmon arranged for them to then head out on Picton Water Taxis to Ruakaka Bay, where they were invited onto one of the NZKS farms. Students enjoyed finding out about careers in aquaculture, as well as discovering what a typical working week looks like for a number of roles, including sustainability protocols and general operations.

The students passed on their "massive thanks" for helping them explore the opportunities in aquaculture and inspiring them to find a meaningful career pathway!



Career Navigator is a free programme run by the Graeme Dingle Foundation Marlborough for students in Year 12 and 13. It equips young people with the work-ready skills, knowledge, and confidence they need to transition successfully from college into higher education and/or employment.

It is kindly supported by the Foundation's sponsors (like MFA), volunteer business mentors, and by businesses who open their doors to the students for a variety of learning opportunities, including "worksite visits" and "industry days" like the Aquaculture Day above.



## Octopus – a potential new species for New Zealand's aquaculture

Octopuses, or whēke, have been caught for human consumption for centuries. Global demand for octopus as seafood has steadily increased from the 1950s to today, with many wild populations being heavily fished nowadays. Increased fishing pressures have led to declining wild populations, with regions within South America and North Africa placing temporary fishery closures to give wild populations a chance to recover. The combination of declining wild populations with increasing global demand has sparked interest from the aquaculture industry to investigate the potential for octopus as a new aquaculture species. Early studies have shown their feasibility as a new aquaculture species with octopuses generally adapting to captive conditions easily, having high fecundity, fast growth, and short life cycles.

Over the past six years we have been working on various aspects of octopus biology in New Zealand, including their embryonic development, artificial rearing of eggs, and paralarvae feeding behaviour with the aim to gather initial data on their suitability to develop octopus aquaculture in this country. The development of octopus aquaculture in New Zealand has the potential to provide an attractive alternative to existing investment opportunities in this sector and could benefit from already existing shellfish aquaculture activity.

Adult octopuses consume up to 5 % of their body weight per day to maintain their fast growth and they rapidly consume both blue and green-lipped mussels. Currently, up to 10 % of the annual production of green lipped mussels and Pacific oysters must be thrown out due to being too small, the wrong species (blue mussels) or damaged while being harvested. The establishment of octopus aquaculture could reuse these unwanted mussels to grow octopuses, turning an unwanted by-product into profit and provide the basis for an emerging octopus aquaculture.



*Adult female common Sydney octopus, Octopus tetricus, feeding on mussels (left) and adult female common Sydney octopus female protecting her newly laid egg strings (right).*

In nature, octopus females stop eating once they lay eggs and focus their attention and energy on protecting and cleaning their embryos until they hatch. Generally, brooding females are left to care for their nests of eggs in captivity as previous attempts at artificial rearing of the eggs has resulted in low numbers of hatchlings. One of the first aims of our research was to design an efficient octopus embryo incubation system that achieves high rates of hatching without maternal care. Artificial embryo incubation reduces the required space to incubate large quantities of eggs, enables research groups to share embryos from the same brood, and allows for hatching times to be manipulated using different water temperatures.

The first design of the artificial incubation system was rather large and egg strings had to be manually attached to PVC-pipes or stainless-steel wires but resulted in embryonic survival above 95 %. This was achieved by using higher seawater flows combined with air stones being placed below the egg string resulting in a gentle movement of the strings. The resulting movement was similar to what maternal care would achieve – keeping the egg chorion (shell) free from potential pathogens. A research visit to work with Shigeki Dan in Japan through the Japanese Society for the Promotion of Science (JSPS), led to the adaptation of a more streamlined artificial incubation system further reducing the space required to incubated octopus embryos. Moreover, the new design does not require that individual egg strings are attached to PVC-pipes and instead, egg strings receive simulated maternal care by tumbling in constant water flow around an incubator's rounded bottom.



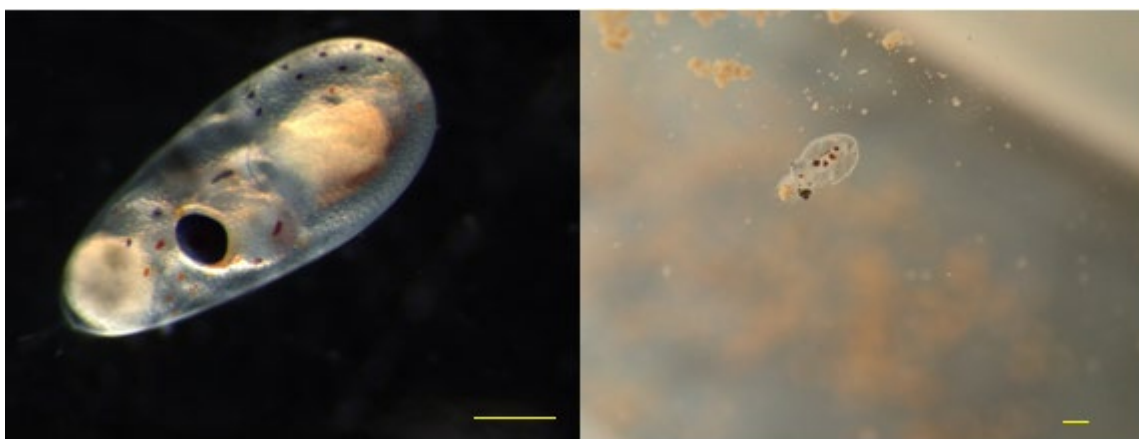
*New and improved octopus embryo incubation system where octopus egg strings are loosely placed inside, and a gentle water stream generates a continuous tumbling of the egg strings.*

Eggs hatch into paralarvae, a small free swimming, planktonic stage that resembles an adult octopus, that actively hunt their prey. Knowledge on their preferred prey is absent for our octopus species but a few studies overseas suggest that paralarvae from other octopus species have a preference for crab larvae (zoeae). The paralarval stage is extremely hard to rear in captivity due to a lack of knowledge of their feeding and husbandry requirements.



Successful attempts in rearing octopus paralarvae of various species have relied heavily on providing crab larvae as food, but these are labour intensive and costly to produce, especially in New Zealand where no commercial crab aquaculture is available to supply such larvae.

Our current research focuses on detailed feeding studies for octopus paralarvae with the aim of working out their feeding requirements, specifically their preferred prey size, preferred prey density, and the potential effect of light intensity on their feeding success. We are also working towards the development of an artificial food pellet that is highly attractive to octopus paralarvae, leading to rapid capture and ingestion. Once this is achieved, we will manipulate the nutritional profile of the artificial pellet to meet the paralarvae's nutritional needs, resulting in high paralarvae survival and rapid growth through the paralarval stage. Increasing our knowledge on their feeding behaviour combined with the development of a suitable artificial pellet will be the core to obtain a seed supply of octopus paralarvae for initiating aquaculture production.



*Late-stage common Sydney octopus embryo (left) and early-stage common Sydney octopus paralarvae that captured and consumes an artificial pellet (right). The yellow bar represents 0.5 mm.*

**Stefan Spreitzenbarth**

[sspr830@aucklanduni.ac.nz](mailto:sspr830@aucklanduni.ac.nz)

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## First mussel and shell deployment in Golden Bay/Mohua

On 8 July 2024, Clearwater Mussels donated mussels, provided staff, and two vessels to harvest and deploy 4 t of live mussels and 4 t of shell material in Mohua. Talley's donated the shell and staff time to collect the shells, and Solly's partnered with us to bring the shells from the Motueka factory over the hill to Port Taranaki. Manawhenua Ki Mohua have collaborated and guided this effort and blessed the deployment with a Karakia. Also, other members of the community came out to see the deployment including the Mohua Marine Trust.

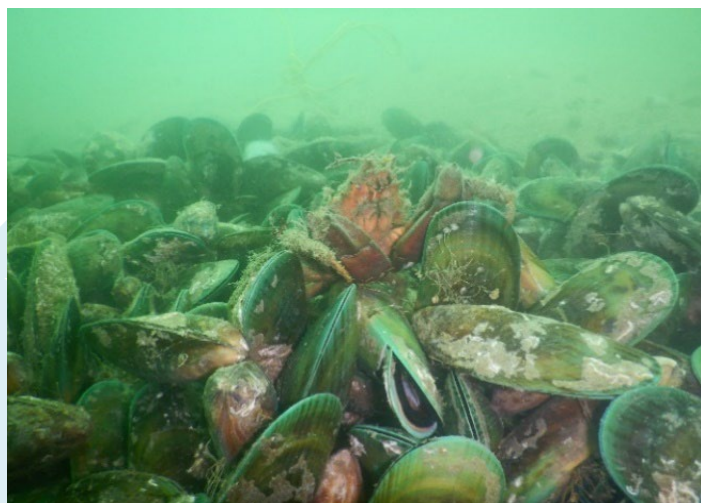
We will be monitoring this experiment over time to understand methods and substrate necessary to establish restored mussel beds in the higher hydrodynamic conditions that we see in Golden Bay. We will also be monitoring the shell material and what other organisms move and recruit into the reefs. The results will help to guide future seabed restoration in Mohua and elsewhere in New Zealand.

Please feel free to get in touch with any questions or if you'd like to get involved, Emilee Benjamin: [emilee.benjamin@auckland.ac.nz](mailto:emilee.benjamin@auckland.ac.nz).



**Figure 5:** Clearwater mussels deploying mussels and shell in Mohua from the mussel barge and the support vessel for the deployment. Photo credit: Josh Robertson

**Figure 6:** Lots of crabs and other organisms moved quickly into the newly-deployed mussels and shells including large crabs (left) and many hermit crabs (right).





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## Oceans of useful information at MFA conference

From the opening speaker outlining MPI's new aquaculture workstream through to the last presentation on monitoring farms with AI, the MFA conference immersed marine farmers in oceans of highly useful information.

Bridget Giesen, MPI's Director of Aquaculture, kicked off with the coalition Government's policies to grow the sector. She said as well as removing the roadblocks, the MPI Workplan will include a focus on spat security, including encouraging investment in hatcheries.

Gascoigne Wicks environmental lawyer Quenton Davies said the marine farm extensions bill should be celebrated. "Two years ago, it would have been unheard of. We have saved ourselves a considerable amount of money."

He was questioned by Kevin Oldham and MFA President Jonathan Large about the risks from having more national direction. While existing industry benefited from the marine farm extensions, he said this would be seen by some potential entrants as having an element of privilege and unfairness. There was a real risk of eroding social licence and Quenton said he some of the cash saved from resource consents should be spent in this area.

Dr Norman Ragg, co-leader of Cawthron's Shellfish Research Platform, provided a summary of his team's research, including summer mortality. He said the industry started to raise concerns in 2017 and Cawthron has been working with the industry ever since to narrow down the causes of summer mortality.

The three years of Cawthron research showed GSMs were out of their comfort zone by the time water temperatures reached 20 degrees Celsius; by 30 degrees they were dying.

Rising water temperatures also increased pathogens which could cause a 'cascade of mortalities.' Happily, the research showed there were no key pathogens affecting mussels, but this work was being done on a shoestring and there was a need to develop a national surveillance plan while sampling continued.

Norman asked industry to contact Cawthron if summer mortality is observed.

His shellfish biologist colleague, Julien Vignier, later presented on how water temperatures exacerbated the toxicity of metals on GSMs in Sounds waters. Levels of zinc and lead after rainfall events often reach levels that are toxic to mussel larvae, possibly contributing to the decline of wild spat.



NZ King Salmon's Seawater Operations Manager Mark Preece presented on his company's journey to open ocean farming. Providing insight on the challenges they faced, and the innovation required to make it a success.

Other pre-lunch speakers at the MFA conference included Darren Guard's update on First Mate which has 17 navigators throughout the country, including MFA Board member Mike Holland. If you ever need to talk to someone about pressures in your work of life, phone **0800 ADRIFT**.

"We've all learned the hard way, and those days are gone. It can be as simple as having a cup of coffee or a beer and a chat."

Marlborough-based NZ First MP Jamie Arbuckle wrapped it up before lunch with his message that his party and Government want to see the aquaculture industry grow after years of standing still. "The Government is living up to its promises of alleviating roadblocks for aquaculture – but in return we want to see growth and a greater contribution to regional prosperity".

A panel discussion followed lunch with five experienced marine farmers outlining their various techniques for spat milking. We will carry a full story on this in the next newsletter.

Dave Taylor, AQNZ Technical Director, then presented on spat research and the triploid project, which will both covered by upcoming articles.

Andrew Jeffs from the University of Auckland gave an update on the recently secured SFFF funding for developing cost effective nursery feeds and FLUPSY systems for mussel spat, and outlined the fish predation problems faced by Coromandel farmers, along with a warning that as temperatures rise the South Island industry will face similar challenges.

Emilee Benjamin from the University of Auckland then provided attendees with an update on the MFA Mussel Restoration Project including the extension to Golden Bay. She acknowledged the hard work of industry members and companies who had provided funding and in-kind support.

Aaron Pannell shared his experiences in the Oyster Industry and covered the history of developing Marlborough Oysters and his Flip Farm system with wife Debbie, that is now used worldwide.

Aarron says sadly a lot of NZ oyster farms haven't been able use Flip Farm because of a lack of spat.

He said there is a need to diversify production and Marlborough has good potential because its broad spread of potential sites could mitigate environmental effects including rain events. He thinks production can 'hockey stick' upwards to meet rising demand amid increasing returns for oyster farmers.





Collaboration in market was needed to ensure these outcomes and Aaron is keen to talk to anyone operating in the Sounds who is interested in potentially joining the oyster industry.

The final presentation came from Chris Rodley, founder and CEO of Nelson-based SnapCore whose AI camera technology now monitors fishing boats around the world. Chris announced his company is now developing AI and technology to support the aquaculture industry and that he is interested in meeting with growers to understand the 'pain points' that could be resolved by new technologies.

The day event was followed by the annual awards ceremony with 7 marine farmers celebrated for their valuable contributions to the industry.

The MFA team would like to thank all our speakers, sponsors and attendees for their support and for making the event a success.

- **Brendon Burns**



## MFA Annual Awards

As we didn't hold a formal dinner this year to celebrate our award winners, we would like to acknowledge them in this edition of the Newsletter. The following section provides the award speeches and feedback from the 2024 winners. Well done to all our worthy recipients!

### Award Categories and Winners

#### 1. Outstanding Marine Farmer Award

**Winner:** Brian Godsiff

**Presented by:** MFA President

**Sponsor:** Donagheys

**Speech:**

This individual's journey in marine farming began in the heart of the Marlborough Sounds. Born and raised in Havelock, he followed in the footsteps of his father, brother, and other extended family members. His passion for the industry took hold at just 13 years old when he started working with NZ Shellfish Holdings under the guidance of Rob Pooley and Chris Godsiff during school holidays. He also held an afterschool job stacking 25kg sacks of

mussels on the Havelock wharf, destined for the Auckland Fresh Markets. On leaving school at 15, he pursued a full-time role in the industry with Sanford.

He earned his Skipper's ticket in 1994, and his expertise wasn't confined to New Zealand; he ventured to Western Australia to work in the crayfishing industry, further honing his skills before returning to his true calling—mussel farming in the Top of the South.

He took on roles as a relief skipper and later as a skipper, helming some of the most significant vessels in the industry, including the Muscat, Pelorus Image, Sounds Legend, and Clearwater Resolution. His commitment to marine farming has been unwavering, marked by decades of hands-on experience and leadership.

He accepted John Young's offer to take on the role of Golden Bay Farm Manager for Clearwater Mussels Limited in Takaka. At the time he agreed on the proviso that if he and his family didn't like the Bay, he'd go back to the Sounds and skipper Sounds Legend. Turns out it was a good decision and it's a position he has excelled in ever since.

His innovative approach to mussel farming in exposed waters has made a lasting impact, particularly in reducing float loss in Golden Bay. He is also a highly respected member of the Clearwater management team, known for his leadership and unwavering dedication to the success of the company and the industry.

The recipient also can't shake the thrill of successful wild spat catch. He is a well-known practitioner of the Wainui spat farms and easily aroused by lines thick with the 'green gold'.

Beyond his technical acumen, he is a dedicated advocate for the industry, contributing his time and expertise to several committees and discussion groups, including the MFA Environment and Compliance Sub-committee. His influence in these forums reflects his deep commitment to ensuring the sustainable growth and responsible stewardship of the marine farming sector.

Today, we honour an outstanding marine farmer, someone who exemplifies the spirit of innovation, leadership, and community that this award celebrates. Please join me in congratulating the recipient of the "Outstanding Marine Farmer" award for 2024—**Brian Godsiff!**

#### *Comments from Brian:*

I would like to take a moment to acknowledge my incredible team in Golden Bay, something I missed mentioning on the night. This award truly belongs to all of us—from the dedicated crew and skippers to the hardworking shore team. I'm fortunate to be surrounded by a group of passionate mussel farmers here in Golden Bay, and I'm excited to see that continue to grow. My own passion for this industry just keeps growing.







## 2. Merit Award

**Winner:** Aaron Pannell

**Presented by:** MFA President

**Sponsor:** Marine Farming Association

*Speech:*

"It is an honor to introduce the recipient of the MFA Merit Award for 2024, recognition given to a marine farmer who has made a significant impact over a sustained period of time.

This individual's journey began not in the sea, but on the land, working in the dairy industry before transitioning to marine farming. His career in aquaculture started with the Marlborough Mussel Company, owned by the Yealand family, where he began as a crewman, quickly rising through the ranks to become a skipper and eventually moving into a management role in Research and Development space.

The Marlborough Mussel Company sent him along to meeting about industry promotion, and somehow, he became the Chair of the Havelock Mussel Festival committee. The inaugural event in 2005 attracted twice as many punters as expected, and the event has continued for 20 years and donated over \$315,000 to community organizations.

His dedication to the marine farming industry is evident in his long-standing service on the Marine Farming Association (MFA) Board, where he served from 2005 to 2023, helping shape both MFA and the sector more broadly.

In 2011, he ventured into entrepreneurship by starting Marlborough Oysters, further solidifying his place as a leader in the industry. His innovative spirit led him to create and

develop the revolutionary FlipFarm system, an oyster-growing technology that is transforming farming practices worldwide. Since 2017, FlipFarm has attracted international attention, thanks to its effectiveness in limiting the back-breaking labour associated with Oyster farming, along with minimizing debris loss, improving sustainability and pest resilience.

With over 30 years of experience in aquaculture, he stands out as an remarkable problem-solver with a unique blend of hands-on engineering expertise and a passion for innovation. His tireless work ethic, patience, and knowledge have been the driving forces behind FlipFarm's success, and his dedication to environmental sustainability is reflected in the practical benefits of this system.

Beyond his technical achievements, he is a mentor to many, always available to staff and customers alike, embodies strong family values and commitment to the wider community.

Today, we recognize an exceptional individual whose contributions have shaped the marine farming industry and whose legacy will continue to inspire future generations. Please join me in congratulating the recipient of the MFA Merit Award for 2024—**Aaron Pannell**!

#### *Comments from Aaron:*

Aaron acknowledged the many people who have helped, mentored and advised him over the years. In particular he wanted to express gratitude to Debbie, his wife and co-director. He said, "It still remains a shock and a privilege to be considered for the Merit award."





### 3. Ivan Godsiff Memorial Award

**Winner:** Kenneth Nichols

**Presented by:** MFA President & Stoney Bourke

**Sponsor:** Maclab Tasman

*Speech:*

" As the 'inaugural' bit suggests, we have added a new award category for 2024. The Ivan Godsiff Memorial Award, is to honour a skipper who exemplifies outstanding seamanship, meticulous care for their vessel, and a strong commitment to environmental stewardship.

Now, most of you will know about Ivan, but for those who are new to the industry, Ivan was from a family with long held ties to the Marlborough Sounds. He joined Elaine Bay Aquaculture in early 1980's and skippered the Pelorus Trader for almost two decades, going with the vessel across to Sanford in 1989. One can only speculate the total tonnage of mussels harvested under Ivan's watch.

He was renowned for keeping the cleanest deck in the industry. His crews often accused him of missing his true calling as a professional firefighter as the deck hose swept across anyone not quick enough to scamper to high ground.

Ivan was also well known for the pastoral care of his crews, before 'pastoral care' was coined as a human resources KPI. On many occasions in the early days, Ivan knocked on doors throughout Havelock in the early hours of a Saturday morning looking for his crew which were lured ashore by unknown sirens. We won't go into names here, as some of those folk could well be industry leaders now and in attendance today.

After formally retiring at age 64, Graeme Coates approached Ivan to become MFA's first Environmental Mentor. He was thrilled, especially as the role was only 3 – 4 days a weeks and he could pick the weather windows. Ivan continued in the roles until he was 80, passing the baton to Darren Clarke. Now we can't acknowledge Ivan with also acknowledging his wife Jan, who was fixture in his trips into the Sounds beach cleaning. Ivan passed away in earlier this year.

Now, onto the recipient, the inaugural award goes to someone who is extremely well known within the industry. Known for his hard work and dedication, he keeps his vessel in top-notch condition, reflecting his pride in the job. He's also proactive when it comes to environmental issues, and always quick to reach out to the MFA Environmental Mentor when something needs attention.

What really sets him apart is his consistency and attention to detail. Darren, who is the current Environmental Mentor has a longstanding joke with



the recipient that he's pissed off, as to this day he's never observed a stray tie left on the backbone post-harvest. It is with great pleasure that we announce **Kenneth Nicholls**, skipper of Te Au Miro, from Clearwater Mussels as the recipient of the Ivan Godsiff Memorial Award."

*Comments from Kenneth:*

Kenneth acknowledged his crew aboard the Te Au Miro when accepting the award and thanked his many friends in the industry.



#### 4. Community Award

**Winner:** Stuart Barnes

**Presented by:** MFA Vice President

**Sponsor:** Aquaculture Direct Limited

*Speech:*

"The Community Award recognizes an individual who serves as an outstanding ambassador for aquaculture within the community.

This year's winner has truly gone above and beyond in his commitment to fostering education and industry connections. Through his effort, the Queen Charlotte College Aquaculture course has undergone a significant transformation. From upgrading the wet lab facilities, to organizing field trips and offering steadfast support to the department's teachers, the recipient has played a pivotal role in enriching the students' learning experience.

He has successfully rallied support from various companies, securing both financial and in-kind assistance to enhance the college's aquaculture wet lab. The improvements have



revitalized the workspace, created a more dynamic learning environment, and led to increased enrolment in the course—all while shining a positive light on our industry.

Please put your hands together for **Stuart Barnes**, Fish Health and Biosecurity Biologist, at New Zealand King Salmon.”

#### *Comments from Stuart:*

Stuart acknowledged Ray and Ritchie from QCC and noted the college has been very supportive, along with Mark Burdass from NMIT for his technical support. He expressed gratitude to NZKS for the time and flexibility to update the infrastructure that the wet lab uses.

*Award collected for Stuart by Julien Stevens*



## 5. Recent Entrant Award

**Winner:** Josh Spooner

**Presented by:** MFA Vice President

**Sponsor:** Waimana Marine Limited

#### *Speech:*

This year's recipient came to aquaculture from deep sea fishing, and this on water experience plus his ability to roll up his sleeves get stuck in, have facilitated a seamless transition into the mussel industry. He is a convert and is now incredibly passionate about his future in the industry.

Best described as a 'good keen man', he's always looking for extra hours while also progressing his SRL endorsement.

When he's not out on the water or taking care of his young family, he has been training for "Fight for Rangatahi", a charity boxing event held to raise money for a range of programmes that build resilience in our young people.

Having started with Maclab Tasman in June of 2023, he's excelled in his role as Senior Deckhand and has embraced life onboard the Vanguard.

Please put your hands together for **Josh Spooner** from Maclab.

#### *Comments from Josh:*

Josh has said he was very honoured to have received the award. He had attended the conference unaware of the awards being presented in the evening so was very surprised when his name was called.



## 6. Environment Award

**Winner:** Brook Lines

**Presented by:** MFA Vice President

**Sponsor:** Maclab NZ

#### *Speech:*

"Starting out as a skipper in the sounds, the recipient was well known as being dedicated to the beach cleaning programme, demonstrating a deep commitment to preserving the marine environment."



Now, as a skipper in Golden Bay, this commitment has only strengthened. On rough weather days, this skipper and their crew don't sit idle, they take it upon themselves to carry out beach cleans throughout Golden Bay. Furthermore, the recipient ensures that a beach clean is not just a stroll on the beach for his crew, it is a grid search for unwanted debris.

The recipient has also taken on the challenge of reducing float loss in what can be a high energy environment. This has involved increased floatation assessments, the use of stop ropes on floats and encouraging the use of new technologies. This has saved money for the recipients' company and delivered improved environmental outcomes.

The effort of this year's winner and his crews is now visible in the MFA data on float loss, which just shows how a dedicated individual can make a difference.

Please join me in honouring the recipient of the Marine Farming Association's Environment Award: **Brook Lines**, skipper of the Platinum, along with his crew Rob Andrews and Ash Porter from Sanford's Golden Bay operation!"



#### *Comments from Brook:*

Brook was unable to attend the ceremony but was surprised and honoured to win the award. His manager, Shane Bray, said "I am very proud of Brook getting this award and I'm sure he'd say it is all just part of his job but the motivation he shows in everything is great."



*Award collected for Brook by  
Andrew Stanley*



## 7. Research & Development Award

**Winner:** Julien Stevens

**Presented by:** MFA Vice President

**Sponsor:** Flip Farm

*Speech:*

"After starting his career in Hawaii, and arriving in New Zealand via stints in North America, Australia, Scotland and Hawaii once again, the recipient has worked tirelessly to see 100% utilisation of the company's aquaculture products.

The recipient has been deeply involved in the development of an ensilage plant to capture and utilise the companies remaining organic waste streams. Once operational, this facility will covert waste streams currently sent to landfill into liquid fertilisers and biogas - a first of its kind in New Zealand.

The ensilage plant required a 5 year plus R&D process, where the recipient explored several pathways for optimum utilisation that not only reduce the company's carbon footprint, but elevates the waste material to a valuable product.

He is passionate about the environment and sustainability, and regularly shares his knowledge via the Smart & Connected aquaculture programme and the Climate Action Marlborough working groups.

Please put your hands together for a very worthy recipient, **Julien Stevens**, Research and Development Manager at Omega Innovations, which is part of New Zealand King Salmon."

*Comments from Julien:*

"I'm honoured to receive this award as it represents a tremendous amount of effort from team members across our business. It's been fantastic to work for a company that is making significant investment in fully utilising the whole fish."













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## New Zealand's first Blue Economy summit - NMIT

New Zealand's first Blue Economy Innovation Summit was recently held in Nelson's Trafalgar Centre and brought together leading blue economy businesses and innovators, universities and research institutions, funders and navigators.

NMIT was at the Blue Economy Innovation Summit, with aquaculture programme lead Denise Hearn and second year student and technician Ben Beveridge speaking about the available opportunities at NMIT and their personal experiences with them. Ben comes from a small farming town in north Waikato and has always had a dedication to the ocean.

"Aquaculture was a natural calling," Ben says.

"While my classmates and I have had different work placements, each of us have come back with high praise, being able to experience on-the-job learning." For his first work experience, Ben was down in Stewart Island, where he lived on a sea farm and worked as a deck hand. His next work placement will be on a National Institute of Water and Atmospheric Research (NIWA) Kingfish and Hapuku farm, up north in Bream Bay, to further explore what New Zealand's aquaculture industry has to offer.

"Working with industry has led to job offers that I know students have taken," says Ben. "For instance, a classmate of mine has begun working at Plant and Food Research after completing his placement with them last year."

"As for myself, I currently work as a technician for NMIT, both on campus and within our saltwater facility at Cawthon Aquaculture Park. I hope to continue this line of work as I have a particular interest in system design and research, both on and offshore." The summit was a great opportunity for kaimahi (staff) and ākonga (learners) to participate in engaging discussions about sustainable seafood and aquaculture with industry, contributing their energy and innovative ideas to help shape the future of New Zealand's blue economy.

For more information about our available aquaculture and marine conservation programmes, please visit the [NMIT website](#).



*From left: Sam Currin, Ben Beveridge and Wayan Giovanni Adnyana at the 2024 Blue Economy Innovation Summit.*



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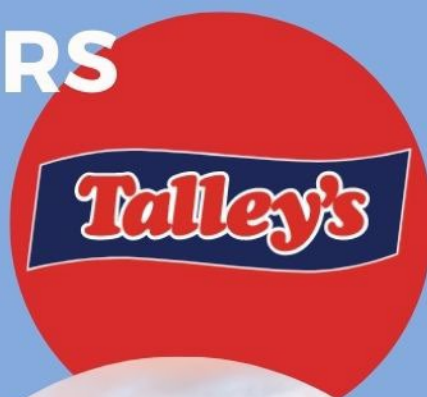
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## Encouraging Responsible Boating: The SMART Operator Programme

Marine farmers and boaties alike have a responsibility to protect the incredible marine mammals that inhabit New Zealand's waters. The SMART (Sustainable Marine Mammal Actions in Recreation and Tourism) Operator Programme is a key initiative designed to promote responsible behaviour around dolphins, whales, and seals. This voluntary collaboration between commercial boat operators and the Department of Conservation (DOC) is essential for ensuring the safety and preservation of these majestic creatures.

### Who Can Benefit?

The SMART Operator Programme is open to a variety of professionals and organizations where being on the water is a significant part of their work. This includes:

- Commercial tourism businesses: business owners, managers, skippers, crew, and guides.
- Aquaculture industry: where marine farming is at the heart of operations.
- Government agencies: such as the Department of Conservation, Harbourmaster, MPI, Maritime Police, and Coastguard.

While the programme currently focuses on professionals, there are resources available for recreational boaties as well, often provided in collaboration with the Safer Boating Forum, Coastguard, Police, and Harbourmasters. The programme offers an excellent opportunity for marine farmers and others in the aquaculture industry to enhance their knowledge and contribute to marine mammal conservation.

The most recent SMART Operator course, held in Picton at the Waikawa Boating Club, saw a strong turnout, including several staff members from New Zealand King Salmon (NZKS). Proudly sponsored by Skipper Training NZ, the course was offered free of charge to aquaculture staff, making it an accessible and valuable opportunity for many.

The course, lasting just four hours, is packed with essential information to ensure compliance with New Zealand's Marine Mammals Protection Regulations and international best practices. It's designed to equip skippers and crew with the latest knowledge to minimize disturbances when interacting with marine mammals, ensuring these encounters are safe and positive for both the animals and the operators.

Tiarnan Browne, Seafarm Manager at New Zealand King Salmon, shared his experience after attending the course with his team. "The DOC SMART Operator (Marine Mammal) Course was a great experience," he said. "The content was not only informative but also engaging, providing a comprehensive understanding of marine mammal behaviour and best practices for boating safely around these animals."

Browne praised the DOC instructors for their knowledge and passion, highlighting the hands-on approach, real-life examples, and interactive exercises that enhanced the



learning experience. The course material emphasized responsible boating practices and the importance of minimizing human impact on marine mammals' natural behavior.

One of the standout moments for Browne was a video showcasing an orca pod hunting a thresher shark in Picton, captured by a NZKS crew. This video demonstrated not only the natural behaviour of orcas but also the careful and unintrusive operation of the vessel, serving as an excellent example of responsible marine mammal interactions.

Browne also appreciated the resources provided during the course, such as stickers to remind operators of the best ways to interact with marine mammals. He concluded, "I would highly recommend this course to anyone interested in boating or marine conservation. It was an enriching experience that exceeded my expectations and left me with a reinforced sense of stewardship for our marine environments."

As marine farmers and boaties, we all share the responsibility to protect the incredible marine life in New Zealand's waters. The SMART Operator Programme is an invaluable resource that equips participants with the knowledge and tools needed to interact safely and respectfully with marine mammals. By participating in this programme, you can contribute to the ongoing conservation efforts and ensure that these magnificent creatures continue to thrive in their natural habitats.

If you haven't yet taken the SMART Operator course, now is the time. Not only will you gain essential skills and knowledge, but you'll also join a community of responsible operators committed to preserving our marine environment for future generations.

Happy boating!



Department of  
Conservation  
*Te Papa Atawhai*

## 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](mailto:office@marinefarming.co.nz)

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

# Upcoming SMART courses

## Sustainable Marine Mammal Actions in Recreation & Tourism

*Working together to minimise potential impacts of vessels on marine mammals*

**For: Aquaculture & tourism skippers, crew, managers & supervisors**

**Tauranga**

6<sup>th</sup> Aug 2024

**Nelson - TBC**

25<sup>th</sup> Aug 2024

**Fiordland**

Sept (dates TBC)

**Nelson - TBC**

13 Oct 2024

**Picton**

23<sup>rd</sup> Oct 2024

**Whitianga**

29<sup>th</sup> Oct 2024

**Akaroa**

4<sup>th</sup> Nov 2024

**Kaikoura**

5<sup>th</sup> Nov 2024

**Abel Tasman**

11<sup>th</sup> Nov 2024

Dates & times may change, and additional locations may be added. Please RSVP to make sure you receive updates.

### How will this course benefit me?

- DOC recognised certification
- Valid for 3 years (renewable via online course)
- Learn about legislation concerning marine mammal interactions
- Build your knowledge about seals, dolphins and whales
- Learn more about marine mammal behaviours and identification
- **Free to attend**

To register please email Amy Healey (National SMART coordinator) - [ahealey@doc.govt.nz](mailto:ahealey@doc.govt.nz)

These SMART courses are FREE to attend, proudly sponsored by Skipper Training NZ



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## Infant Formula for Mussel Spat

Poor quality spat is a major cause of low retention in Greenshell™ longline farming and this is often compounded by seeding spat out at small and vulnerable sizes. Feeding up large quantities of spat to recover their nutritional condition quickly, and to grow them to larger and more robust sizes before seeding out, requires a specialty food that fits their needs. Unfortunately, there is no off-the-shelf solution that works reliably for feeding up Greenshell™ spat, other than growing live microalgae. Testing of a range of imported shellfish spat food products that are used for nursery rearing of oysters and clam spat overseas has found that they do not work well with Greenshell™ spat which has unusual feeding behaviour and nutritional requirements.

To address this problem, researchers at the University of Auckland have teamed up with the Marine Farming Association, Coromandel Marine Farmers Association, Aquaculture New Zealand, Sanford and the Greenshell Spat Co and a number of other industry partners to develop a more effective food for Greenshell™ spat – almost like an infant formula for spat. The research has attracted significant support from the stakeholder groups, with a significant contribution from the Ministry for Primary Industries through their Sustainable Food and Fibre Futures (SFFF) initiative.

In announcing the funding, Oceans and Fisheries, Minister Shane Jones commented, “This project seeks to increase the resilience of our mussels and significantly boost the sector’s productivity. “The industry largely relies on wild caught spat, which has extremely low retention rates. Less than five per cent of wild caught spat survives after it’s transferred to mussel farms, costing millions in lost production each year.

“The results from the project will ensure that spat are raised to a robust size before being transferred to farms.”

“This project will address spat supply issues which are severely restricting the productivity and growth of the industry in New Zealand.”

Improving spat performance in Greenshell™ will help the industry to reach Government’s Aquaculture strategy goal to triple aquaculture sales revenue to \$3 billion by 2035, which includes boosting Greenshell mussel earnings to \$1 billion per year.

Lead researcher, Andrew Jeffs, from the University of Auckland, says to produce an effective spat feed from the research is a challenging but worthwhile goal. The initial research has identified some new approaches that have not been used previously for feeding shellfish spat, for which initial testing has produced some positive results. He is hopeful that initial prototype feeds will start to be tested with industry partners later in this year’s spat season.

**Dr’s Brad Skelton & Andrew Jeffs**  
[Brad.Skelton@auckland.ac.nz](mailto:Brad.Skelton@auckland.ac.nz)  
**The University of Auckland**



*Off-the-shelf food from the USA that is widely used for feeding oyster and clam spat overseas, but it is not as effective when fed to Greenshell™ spat. Developing an equivalent bespoke feed for Greenshell™ spat is the aim for the research and development project.*

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## Inaugural WoAA Event

The Women of Aquaculture Aotearoa inaugural event was held at the Tasman Bay Cruising Club and was attended by nearly 60 women from around Te Tau Ihu.

Having so many wāhine together was fantastic, networking and getting involved. The event was incredibly positive, and we look forward to more in the future!

We kicked off with a karakia and welcome from New Zealand King Salmon's Monique Hatfull and followed up with a brief overview of who we are, what we hope to do, and a few questions to the group about what they would like to see from WoAA.

This event was made possible by our generous sponsors, New Zealand King Salmon and Talley's.

If you would like to be involved, have ideas for future events, or to share your perspectives on WoAA's future direction, please email us and let us know!

Please sign up to our mailing list to stay connected.

<https://www.woaaotearoa.org/contactus>

Celebrating the women of the Aquaculture Industry  
in Aotearoa, New Zealand



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## New Horizons for New Zealand's Aquaculture: Exploring the Potential for Scallop Farming

Interest in scallop aquaculture in New Zealand dates back to the 1970s, initially driven by the decline of the Nelson scallop fishery, and the expansion of Greenshell™ mussel farming in the nearby Marlborough Sounds. Early research concentrated on spat collection, aiming to identify the best methods for sourcing wild spat, as well as the optimal times and sites for deploying spat collectors across the top of the South Island. This success with wild spat collection soon led to trials by various groups to explore the feasibility of growing scallops in suspended culture. Although these trials demonstrated that suspended scallop culture might be technically feasible, economic conditions at the time, along with challenges such as high biofouling and unexplained mortality, suggested that it may not be cost-effective.

In recent years, interest in scallop aquaculture in New Zealand has resurfaced, partly due to the success of overseas scallop industries, but also due to the challenges currently faced by existing shellfish aquaculture sectors across the country and the ongoing closures of wild scallop fisheries. Over the past few decades, the global scallop aquaculture industry has grown to a value of over US\$5.8 billion, with annual production reaching 2.12 million tonnes.

Furthermore, key issues that once constrained the growth and expansion of the industry, such as biofouling and mortality, are now being successfully managed. This progress led Nissui, a Japanese fishing company to fund small-scale trials in the Marlborough Sounds in 2019. These trials included spat catching in Beatrix Bay, and farming at sites in Elaine Bay. However, these trials were concluded after an unidentified black substance caused high mortality in adult scallops (Fig. 1).



**Fig. 1.** Photographs of an unidentified black substance causing mortality of adult scallops grown in suspended culture in the Marlborough Sounds. Photo credit: Nissui.

In 2021, Nissui then shifted their focus to the Coromandel, partnering with Goldridge Marine Farms, Premium Seas, and the University of Auckland. The objectives of this collaboration were straightforward: undertake a trial to document the growth, survival,

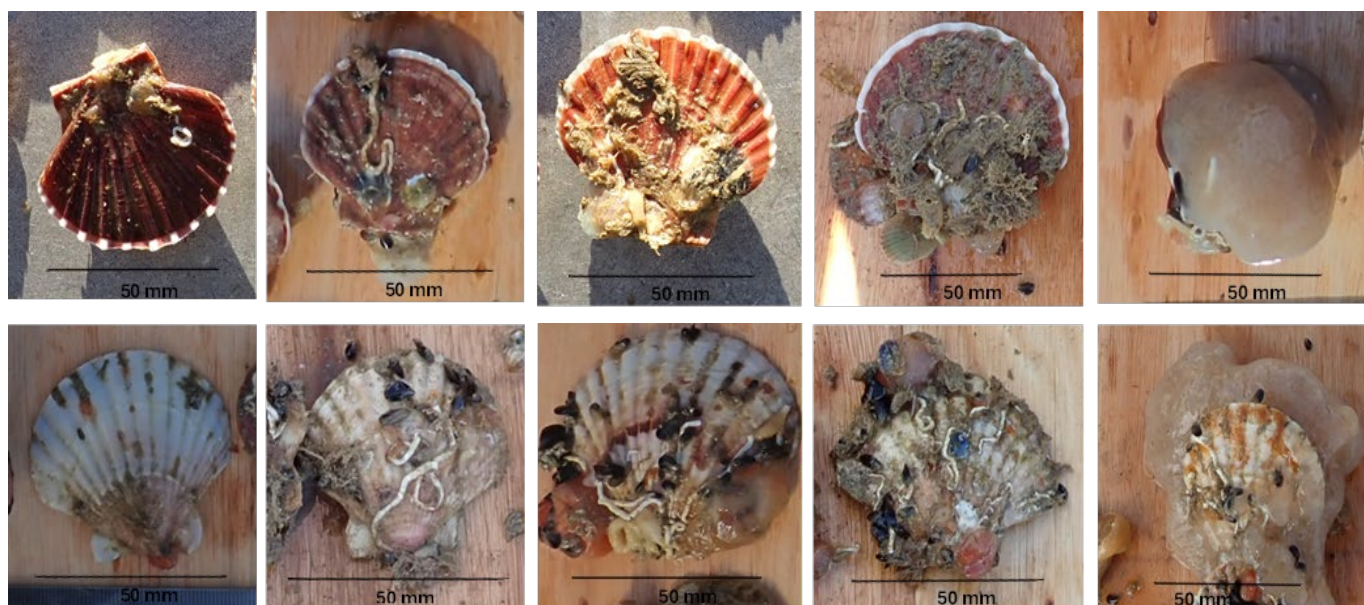


and biofouling of scallops grown in suspended culture in the Coromandel over a production cycle.

The results were promising, scallops grew rapidly, reaching 60 mm in shell height (~ 80 mm in width) in seven months, with survival rates comparable to scallop industries overseas.

However, significant biofouling affected both the nets, and the scallops themselves (Fig. 2). This trial was conducted with limited resources, which prevented the implementation of common biofouling management techniques used elsewhere, such as cleaning and changing of nets.

Despite these challenges, we are confident that with additional resources, the growth and survival of scallops in the Coromandel can be improved, and biofouling levels minimized (Fig. 3). This would provide a clearer understanding of whether scallops could support aquaculture in New Zealand.



**Fig. 2.** Photographs showing varying degrees of biofouling on both valves of juvenile scallops grown in suspended culture in the Coromandel.

The University of Auckland and Premium Seas are now collaborating with Envirostrat Limited, an environmental consulting company, to develop a project aimed at conducting a full-scale study on the feasibility of scallop aquaculture in New Zealand.

To ensure the success of this initiative, we are looking for inspiration from other markets. For example, in the US, there is growing interest in marketing and selling whole scallops, including parts of the animal that are often thrown away by most US consumers. These parts of the scallop are edible, rich in protein, and can improve the economics of scallop aquaculture by increasing the product's market value. Initiatives such as this might just be the key to unlocking a new industry for New Zealand.



**Fig. 3.** Photographs of scallop spat being deployed into pearl nets (left) and lantern nets being retrieved for sampling (right).

**Dr. Brad Skelton**

Brad.Skelton@auckland.ac.nz

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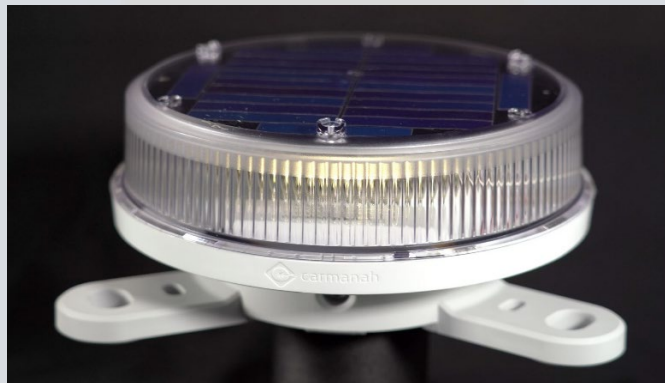
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## New Zealand maritime software start-up wins big with Innovation Award at Europe's largest on-water commercial vessel expo

Southampton, England – Sea-Flux Limited has won the Innovation Award for Electronic and Electrical Systems at the European Commercial Marine Awards (ECMAs) at the Seawork Expo – Europe's largest on-water commercial vessel expo held in Southampton, England 12-15th June 2024.

### ECMAs

The 2024 European Commercial Marine Awards (ECMAs) winners were announced during a packed ceremony on the first day of the Seawork Expo. ECMAs celebrate the outstanding individuals and innovative companies that comprise the vibrant and productive commercial marine industry. The Innovations showcase gives exhibitors the opportunity to demonstrate the latest in equipment, services, projects, and vessels introduced in the last 12 months, since the last Seawork Exhibition.

For Sea-Flux, it's meaningful recognition after years of hard work building the Sea-Flux app – focused on digitizing vessel management with the aim of significantly enhancing vessel and crew safety

*"It's a privilege to receive such an award and be recognized here at arguably the most significant maritime expo of the year, we're ecstatic! It's been a journey and well worth the ride and we can't be any more excited for the future, since launching into the UK market in the last 12 months."* Tai Ellis, Sea-Flux Managing Director.



© Seawork / Ocean Images

### Seawork

Seawork, the leading European commercial marine exhibition, is celebrating its 25th anniversary. Offering a unique combination of undercover exhibition spaces, open air demonstrations and floating displays with 12,000 m<sup>2</sup> of undercover space and more than 70 vessels and floating exhibits.

Her Royal Highness the Princess Royal opened Seawork, marking its 25th edition as Europe's leading commercial marine exhibition.

### Sea-Flux

Sea-Flux is a New Zealand software start-up making waves in the global commercial vessel management and compliance space. Our mission is to provide an intuitive software platform that delivers enhanced safety and better situational awareness which



reduces risk to Seafarers and the environment.

For more information on Sea-Flux please see our website: [www.sea-flux.com](http://www.sea-flux.com)



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# SOLLYS

