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Features

- 20** **Cover Feature:** Sustainable Seas seeks to deliver marine research essential to New Zealand's health and wealth
- 08** Wells' World – how a farming boy made fishing better
- 13** Paua industry pioneer cultivating a different crop



Regulars

- 06** News: Moana ramps up oyster production with flip farm method
- 11** Policy: The big MPA debate
- 18** News: Recreational data – the missing link in managing shared fisheries
- 31** Book review: A master fisherman: *Jack from Bluff* by Ross Cantrick
- 34** Best fish 'n' chips: Happy times at Mr Grumpy's
- 36** Southern Seabirds: Trusting in seabird protection
- 38** MPI: Accurate catch reporting fundamental to Quota Management System success
- 39** From the President: Albacore tuna fishery delivers and conference looms
- 40** Event: Marlborough community mussels-up for the seafood event of the season
- 42** Recipe: Grilled half-shell mussels with lemon, parmesan & garlic butter



EDITORIALS

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In this issue

ISSUE #267:

Welcome to the April edition offering wide-ranging coverage of the seafood sector.

Our cover feature is on the 10-year, \$70 million Sustainable Seas National Science Challenge centred on the marine environment. The Challenge was set up to both develop a holistic ecosystem-based approach to managing fisheries and to stimulate a blue economy. We explore how it is set up and whether it is delivering. We also highlight two of its many projects – measuring the impact of bottom trawling, in conjunction with Fisheries Inshore New Zealand, and the potential of the seaweed sector.

We profile Donald McIntosh, known as Mad Mack, a paua industry pioneer now at the forefront of a far different enterprise.

On the policy front, Seafood NZ senior policy manager Tom Clark argues Marine Protected Areas (MPAs) are not the answer to managing marine diversity.

And the considerable importance and effects of recreational fishing have been ignored for too long, writes Randall Bess on behalf of Fish Mainland, the voice of South Island recreational fishers.

Our news coverage includes Moana's ramping up of oyster production and new designs to avoid runaway mussel floats.

Jack Cantrick, who died earlier this year, is remembered in a book – *Jack from Bluff* – that is rich in anecdotes and historic pictures. Cantrick, who skippered his first vessel aged 15 and fished his beloved boat President Kennedy until aged 86, had the distinction of being the country's youngest and oldest skipper.

The seafood economic review for calendar year 2020 is also included in this bumper issue. Covid-19 impacted on the sector and export earnings are down, but nowhere as much as was initially feared, demonstrating the resilience of the sector and its diverse products and markets.

The best fish 'n' chips column celebrating the country's number one takeaway goes to Foxton Beach to sample Mr Grumpy's, which in fact is anything but.

Check out the seafood recipe, this time a delicious and easy to prepare take on green lipped mussels.

Tim Pankhurst
Editor

From the Chief Executive

Dr Jeremy Helson



This edition we celebrate the contribution Richard Wells has made to the industry and it is timely to also reflect on how far we have come as far as our impact on our environment thanks to trailblazers such as Wells.

Wells was always passionate and forward thinking. This is a quote from this edition, made by Wells in the 1980s;

"We put bits of dead seabirds on the table in front of industry leaders at Seafood Industry House and told them this is the reality. If you can stomach this on primetime TV in Germany where you are selling your fish fingers that's fine but if you want it addressed, we need a plan."

There is little knowledge, let alone recognition, of the enormous amount of effort that has gone on in the past few decades to minimise the seafood sector's impact on seabirds, marine mammals, and the environment. We receive constant and vitriolic criticism from those who would like to paint us as having made little attempt to reduce those effects.

In reality, nothing can be further from the truth.

From the humble, but effective tori lines to the high-tech underwater bait setter trials that are underway, and the use of integrated weighted hooks, hook-shielding devices, and time-depth recorders, the efforts are real and ongoing.

Official data shows that commercial fisheries' seabird captures have reduced for more than a decade. In fact, they have halved since 2002.

As Richard Wells says in this edition;

"Most of what we do in New Zealand, particularly in the primary sector we can do better, and we must do better. But vilifying sectors does not help."

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Moana ramps up oyster production with flip farm method and new hatchery

Nick Palfrey



Production of Pacific oysters (tio) is expected to increase from 1.2 million dozen to two million dozen year-on-year by 2026 as Moana New Zealand – the country's largest Iwi-owned kaimoana and kai ora company – transforms its tio farms across harbours in Northland and the Coromandel.

Flip farming was developed by one of Moana New Zealand's contract marine farmers from Marlborough Oysters, Aaron Pannell. Oysters are placed in baskets and then submerged at various depths to grow, encouraged by the ocean's natural tidal movements.

Flip farming replicates these movements by semi-automating the basket flipping process and simulating different growing conditions without having to move tio to different parts of the farm.

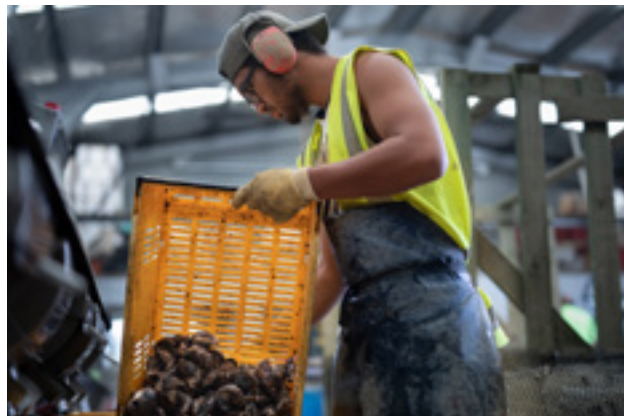
Moana New Zealand general manager of aquaculture, Fiona Wikaira, says this is usually a manually laborious

process requiring skilled workers year-round to turn baskets by hand – no mean feat given oysters' 18-month growth cycle.

"Flipping allows semi-automation and significantly reduces the requirement to work in the mud, meaning we're able to provide better working conditions for our people – which is in line with our value of manaakitanga, or looking after people our way," says Wikaira.

Conversion of Moana New Zealand's existing water space using flip farm technology will provide additional capacity to meet volume growth targets.

For example, if accelerating growth is the objective, tio can be kept submerged continuously for a period. This differs from intertidal tio farming where bags are in a static position. Flipping enables baskets to be turned for drying and minimises fouling without having to bring the bags ashore for drying and cleaning.



Images; Steph Rowe.

Wikaira says the organisation's future focus reflects its core values of kaitiakitanga and whakatipuranga.

"Our role as kaitiaki is to be custodians for future generations and ensure prosperity. We've committed \$21 million to transform our tio operations across five years. Phase one of this plan was commissioning a hatchery in Nelson, due for completion mid-year.

"In stage two of our plan, existing tio farming infrastructure will be removed and progressively replaced with flip farming technology."

Converting Moana's operations to flip farming means removing historic infrastructure, purchasing and constructing flip farm componentry, commissioning contractors and conducting training for staff. To achieve this, teams at Parengarenga, Whangaroa and the Coromandel have begun the process of converting water space ready for baskets to be attached to ropes which sit on the surface of the water between posts. That involves removing older wooden posts.

Moana produces the majority of tio from its own oyster spat grown out at its Nelson site. It is then transported to harbour farms.

"Soon we'll be extending our capability by producing our own spat at our purpose-built hatchery in Nelson,

increasing the volume we're able to harvest and supply year-round. After about an 18-month growth process, our tio make the journey to Wiri or the Coromandel to be graded for sale to domestic and export customers," says Wikaira.

"Our oysters are available live, chilled, and frozen. We've also recently started supplying supermarkets with half dozen and dozen packs where the oysters are in half shells."

Moana New Zealand's recruitment campaign for additional tio farm workers is tracking well, with eight new staff commencing full-time work at Whangaroa and five at Coromandel in a boost for regional employment.

"We're committed to continue delivery of talent pipelines as part of our aspirational oyster plan. We're expecting that additional positions will be created as the project progresses," says Wikaira.



Moana New Zealand general manager of aquaculture, Fiona Wikaira.

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Wells' World – how a farming boy made fishing better



Wells worked with the Guards in the 1970s. He is pictured with Darren Guard more recently.

Last year, industry veteran Richard Wells was awarded the major prize at the inaugural Minister of Fisheries Sustainability Awards. Wells' contribution to the industry runs deep but the journey there took an unusual path. LESLEY HAMILTON reports:

The Wells family had been farming at French Pass in the Marlborough Sounds for generations and straight out of boarding school the young Richard Wells could have expected a life farming the same land he and his ancestors grew up on.

But that was short-lived. The halcyon days of Muldoon's agricultural subsidies were gone. The \$1 billion a year Muldoon was throwing at farmers was wrenched away by Roger Douglas in the mid-eighties and the farming community took a savage hit. Interest rates hit 26 percent, banks withdrew credit lines, land

values halved, and many farmers were pushed into negative equity.

"I marched on Parliament. I demonstrated when the top-dressing planes were there, which was not like me at all," Wells says.

"I was forced to remove myself from the family farm and find another option. There were already another two family members on the farm, and I couldn't borrow enough money to buy a house."

The newly married Wells scoured Christchurch's Press looking for another farm to manage when he saw an advertisement for a degree in fisheries in Launceston, Tasmania at the Australian Maritime College.

"I had never thought about doing anything different from farming, but I had to do something," he says.

French Pass is fishing country and the young Wells, while working on the family farm was fascinated by the lifestyle.

"When I was farming aged 16 to 20 it was a time of a big increase in boats in New Zealand. The *Whitby*, *Fifeshire*, *Mako* and *Resolution* were all there. I got to



Industry veteran, Richard Wells.

know those boats. I knew their sound. I used to ride my motorbike out to watch them go by."

Over the hill from the Wells' farm was a man who was to have a big influence on his life.

"Colin McCauley was looking for a deckhand on his

40-foot trawler *Tequila*. My brother gave it a go for a bit, and I did as well for a year. And I just loved the people, and I loved the way they thought. We travelled all around the Marlborough Sounds. We set-netted off D'Urville, scalloped through the outer Sounds, longlined for school shark in Cook Strait and trawled in Tasman Bay and covered every fishing method you could think of. It was like an immersion course in the culture and the methodology of fishing."

Wells only quit because McCauley moved to Nelson and started fishing out of there.

He went back farming but his time as deckhand had started a passion he holds to this day.

"I was also librarian for our little local bus library, the country library service where a bus drove around delivering books. I started getting all the books there were on fishing in New Zealand. I read them all."

Then Wells saw that ad in *The Press*.

"Thirty years later I still remember what it said. Are you fishing for a career? I applied for it. I only had school cert. But I got in, mostly on the basis that I had done a three-year correspondence course on farming which demonstrated some stickability. The people in Australia were looking for some adult students to calm the young ones down and decided to give me a go," Wells recalls.

He sold his dogs, guns, and motorbikes, packed up his wife and baby and walked away from a fifth-generation family farm.

"My son turned one the day after we got to Australia, so it was a massive emotional leap."

The Australian Maritime College in Tasmania was built specifically for marine and fisheries science, a \$35 million investment by the Australian government.

"It was a shotgun course on everything about fisheries. Not just fishing gear technology but policy, science, and food technologies. We learnt how to make surimi and at the same time we learnt how to build mathematical models on how to calculate yield. It was a broad applied science degree. We did aquaculture so we learnt how to inject goldfish to make them have sex – you name it mate, we covered the lot," Wells says.

The college had merchant ship simulators, towing

tanks for naval architects, and a school of engineering.

"We did refrigeration and hydraulics and naval architecture and learnt how to put 10 metres more length into a crayfish boat and change the propulsion system."

But there was no money to fly back to New Zealand.

"We just dug in and had two more kids while we were there. One is called Tamar, because that was the name of the river outside the house we bought for \$30,000. The back door was out lying on the lawn," Wells says.

After five years, he and the family came home, and at about the same time, someone failed to turn up for a Sealord job.

"That's how I became manager of Sealord's Russian fleet which, in those days, was 10 vessels fishing mostly squid, hoki, hake and southern blue whiting."

Wells says it was a tough induction into corporate fishing and offshore fishing.

"And it was far more than just fishing. All the things I had been taught meant nothing. This was all about customs and immigration and fisheries law and observers and fish quality.

"The first thing we did was poach government observers and get them to be representatives on our boats. We wrote a whole lot of fish quality plans that all had to be translated into Russian. It was a real lesson on communicating with people who do not really want to be communicated with."

He went on to manage Sealord's domestic fleet, starting with Will Watch, which was earning a significant portion of the company's profit with orange roughy in those very different days. He then became manager of Sealord's factories. However, the job took its toll.

"It was a massive workload. I went back and had a look

at my first three years there and there wasn't one period longer than three days where I had not driven through Sealord's gates."

Wells then moved back into the inshore fishery with Moana.

"So, it was all small boats again and the rugged individuals who run them, not corporate types chasing KPIs and bonuses. These



Shearing on his parents' French Pass farm as a teenager.



Wells on Maritime College training vessel *Bluefin* off the east coast of Tasmania holding an orange roughly – the first sign of the fishery to come.

were the independent guys who were out there catching fish because they enjoyed the adventure and the risk and the challenges. For a lot of fisherman that is the game, that is the joy in it," says Wells.

By the time Wells returned to Nelson in the early 2000s, the environmental opposition to commercial fishing was getting noisy with videos emerging of bottom trawling, coral being dragged up in nets and albatross captures in the squid fishery.

"Some promises were made by industry to sort seabirds out in squid trawl, but it was a spectacular failure. We were sending each boat three sides of A4 telling them what to do. In English. To 35 or 40 trawlers whose crew mostly didn't speak English. No tools, no follow-up, no consistency. Nothing."

And this was when Wells decided someone had to do something.

"I co-wrote this paper I called *A Reality Check for Bottom Trawling*. For deep water we just needed a tangible mitigation solution. We want to protect benthos so why don't we just set aside areas where we can't touch the sea floor? I drew the first concept map for what became Benthic Protected Areas (BPAs)."

Then he started on seabirds.

"We put bits of dead seabirds on the table in front of industry leaders at Seafood Industry House and told them this is the reality. If you can stomach this on primetime TV in Germany where you are selling your fish fingers that's fine but if you want it addressed, we need a plan."

At the time, the industry was frequently in combative mode with the Crown but still not achieving the desired outcomes, even if winning in the courts.

"We had a meeting with the big boys at MPI and said why don't we all write down what we want, separately, and bring it back?

"So, we wrote down 10 things and compared them to MPI's list, and they matched. It was like a bitchy

marriage. All the outcomes we wanted were the same but the way we were treating each other we'd lost the ability to talk about things and come to any kind of compromise," says Wells.

"What the industry and MPI had done was just focused on resolving the really difficult stuff and they were constantly head butting. We started talking about the things we could change and fix relatively easily. When you are fixing stuff and meeting each other frequently you start to have candid, trust-based conversations because you want to reach a common goal."

One of those fixes was sea lion captures.

"We were killing 150 of those a year 25 years ago. Now on average we are catching one a year. The industry deserves an award the size of a frying pan for it. We found out what the problem was, communicated with the fleet, sat there playing them video about how to use the Sea Lion Exclusion Devices (SLEDs) correctly, and audited them. It needed to happen," Wells says.

He says there is still work to do on seabirds.

"We fixed the problem of warp captures with offal control but now the birds are getting caught in the net. To put it simply, we got the bears out of the rubbish bin so now they are turning up at the tip."

"Even so, we've made really significant progress both in terms of reduced mortalities but also in adoption of risk management strategies by the fleets and individual fishermen."

Wells shows no sign of slowing down. He says public antagonism towards commercial fishing is not new, but he is equally harsh on the industry players who will not change fast enough for his liking.

"Most of what we do in New Zealand, particularly in the primary sector we can do better, and we must do better. But vilifying sectors does not help. All primary sector industries have impacts on the environment but showing them how to do better through encouragement and support is how to get a result."

Wells has been doing that for decades.



Tequila, the vessel that began the fisheries journey.

The big MPA debate

Tom Clark



Goat Island marine reserve.

There has been significant, ongoing disagreement between conservationists and fishing groups as to the intent, role, efficacy and need for no-take Marine Protected Areas (MPAs) as a tool for managing marine biodiversity.

It is a debate spanning more than two decades and one that appears will not be resolved in the near future.

At the heart of the issue lies an absence of recognition of the sustainability drivers in New Zealand's existing regulatory powers to protect our marine biodiversity plus the adoption of an international standard that is out of context.

There are many tools available to protect marine biodiversity. They may range from no-take closed areas, to a framework where environmental bottom-lines are set to control the level of impact. New Zealand has a complex management regime for its marine environment, with numerous acts which apply in some way to protect it. The Fisheries Act (1996) is but one piece of legislation. It is focused on the sustainable utilisation of marine resources with a legislated obligation to ensure the sustainability of the marine environment.

The seafood industry is strongly in favour of protecting marine biodiversity. Its very future depends on healthy ecosystems. It is the choice of measures and the degree of protection where the debate rages.

Measures used to achieve marine biodiversity must be appropriate for New Zealand and consider the country's interlocking suite of regulatory provisions. Measures used elsewhere in jurisdictions without that level of protection are not an appropriate policy response in the New Zealand environment. Our fisheries management system set out in the Fisheries Act protects our aquatic life and with other discrete government processes such as Threat Management Plans and quality risk assessments, sets bottom-lines for environmental impacts. MPAs are not needed for fisheries management purposes.

If there are areas where marine biodiversity protection could be improved, it is in protecting the marine environment from terrestrial impacts such as sedimentation and outstanding examples of vulnerable marine ecosystems. NIWA, for example, has estimated that annual sediment deposition in the Bay of Islands averaged approximately 500,000 tonnes per year for

POLICY

the last century. The bulk of that occurred in the last 30 years. As users of the sea, fishers know where the sensitive habitats lie and voluntarily avoid them, a point not recognised by many critics.

The industry does not oppose more marine protection where it is justified and necessary. But we do oppose closures to meet an inappropriate international best practice measure that ignores our existing levels of protection. Industry's position on marine protection is as follows:

- The objective of a marine protection policy should be to protect marine biodiversity (not to be used as a wider spatial marine management policy)
- Current levels of marine biodiversity protection afforded by the Fisheries Act 1996 should be recognised
- Adopt a scientific, best-information approach for risk-based identification of habitats/ecosystems needing priority or additional protection
- Develop a clear statement of the ecosystem components to be protected

- Implement marine biodiversity on a national, not regional scale
- Rare, highly vulnerable areas, or those with outstanding examples of ecosystems, should be prioritised and protected by tools that provide an appropriately high and holistic level of protection
- In selecting habitats intended to protect representative habitats, least-valued areas should be the prime target against areas of value to the industry
- The process should be nationally managed and co-ordinated
- Tool selection should be appropriate to the ecosystem component and level of additional protection it requires
- Assurance of rebalancing and compensation where utilisation rights are significantly impacted.

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Paua industry pioneer cultivating a different crop



Mack in a sea of industrial hemp, pioneering a different industry.

Mad Mack, a legend in the paua industry, has led a riotous life that now centres on hemp farming. TIM PANKHURST reports:

It was a mighty comet that raced across the sky with dollar bills flying off it.

Such was the impact of Donald James McIntosh – “Mad Mack” – the father of New Zealand’s modern paua industry, according to Paua Industry Council chair Stormalong Stanley.

Mack is revered by industry leaders like Stanley for having the vision and the sheer bloody mindedness to crack open a paua licensing cartel and get a fair deal for divers.

He lobbied politicians in the protectionist 1980s to permit lucrative paua exports, helped convince Maori to allow paua in to the Quota Management System and then pursued another crusade – the licensing of industrial hemp growing.

Like other noted adventurers, Mack took a magpie approach to the world with an instinctive avoidance of anything dull.

When Stanley gave a presentation on the history of the New Zealand paua industry to a trans-Tasman conference in Hobart, Mack featured as the brightest in a firmament of hard case characters.

He was a millionaire who went bust three times over, drove a jet-black high-performance Trans Am, dived from garishly painted boats prone to sinking and flew paua out of a remote Fiordland camp in a grossly overloaded Piper Cub.

When he tired of that, he moved to Wellington to lobby for a new passion, the legalisation of hemp as a prime crop in a country dependent on agriculture.

“Before I go into the ground, I’ll be able to say I’ve been there and done most of that,” Mack, 71, says with a wheezy laugh from his back of beyond hemp farm in the Catlins in south Otago.

Despite his backwoods manner and straight talking, Mack is the most effective lobbyist he has ever seen, Stanley says.

“The politicians all instantly liked him.”

That skill was developed in the early 1980s after Mack took up the then fledgling paua diving pursuit on Stewart Island following an unhappy stint in the Navy.



Industrial hemp pioneer and paua industry "father", Donald McIntosh, aka 'Mad Mack'.

The price was low, just 80c a kilo, and he eked out a living for several years and took a year out to shoot deer for the Forest Service.

In pre-internet days, communities were relatively isolated and the paua divers were unorganised, with no national voice.

Mack set about changing that after he went to Australia and Hong Kong and saw divers there

getting as much as \$30 a kilo for a similar product.

That answered his question: How come you guys are driving around in Lamborghinis and we're on the bones of our arse?

"The more I investigated it, the more I realised we were getting screwed big time.

"People think my nickname means I'm mad. It doesn't, it means I get bloody mad."

Paua processing and export at that time was controlled by a cartel of three firms – Sealord, Wattie's and Salmond Smith Biolab, none of which are involved in the sector today.

Mack engineered a meeting with then Fisheries Minister Colin Moyle and told him he had a contact in Taiwan that would pay \$30 a kilo for New Zealand paua "and you won't let us do it – it's not a level playing field".

Moyle relented to the extent of a two-tonne trial to see if Mack's claims were true.

Mack duly delivered and used the returns to establish a divers' co-operative, although an initial meeting at Christchurch's Travel Lodge was a wild affair.

"Our guys were carrying fridges full of mini bar spirits from their rooms to our unit. I was apologising to the manager and said we'd make good any damage.

"Bruce Skinner, a well-known paua diver from Stewart Island, who was as straight as an arrow, asked how can we action anything with this shower?

"I said just because they don't live like you doesn't mean they can't do something extraordinary."

At a subsequent meeting with the United Maori Council, Mack argued for the introduction of paua to the Quota Management System.

"I met a lady lawyer and she said we've been waiting 150 years for justice and I grinned at her and put my hand on her shoulder and said, gee, you look good for your age.

"She was in two minds – to haul off and punch this

cheeky bastard, or to laugh. In the end she laughed.

"Tipene O'Regan was there and I said 'look, some of our guys are your guys and two wrongs don't make a right'.

"This went on for four or five hours and Mat Rata (Maori Affairs Minister) had gone to sleep, well he looked like he had, but he woke up and said something and I thought, you've been listening to everything.

"Anyway, Tipene said we're going to see Justice Grieg, we're going to let you have your quota and they agreed."

With a property right secured and top dollar being paid, the money flowed.

After some paua prospecting, Mack set up camp at Spit Island, a tiny full stop of dry land at the head of Puysegur Sound in southern Fiordland.

The paua were prolific and Mack chartered light planes to fly the catch out.

After spending \$38,000 in four months, he bought his own plane, a Piper Super Cub for \$32,000, and learned to fly at Otago's Taieri Aero Club.

Its load capacity was 210kg but Mack pushed that to a tonne.

He had a long beach runway when the tide was out and the little plane would struggle into the air, barely making headway at about 30 miles an hour.

"I had lots of hairy experiences," he says. "The battery melted and set the plane on fire."

But he somehow survived. He later learned the local fishing fleet had a betting pool on which trip would be his last.

Conditions were harsh, eternally cold, wet and windy, none of which deterred the hordes of biting sandflies.

"Bloody horrible little beasties. In 40 knots of wind, how were they flying against that?"

Clouds of them descended on their food as they ate and Mack counselled his companion Little Dave Malley to regard them as protein and eat any that accompanied a mouthful.

"And he held a sandfly on the end of his knife – a dead one – and he said 'yes, but this one could have been the one biting your arse when you were on the beach having a crap and I'm not eating it'."



Mack's Piper Super Cub 'Sweetie' that staggered into the Fiordland sky, grossly overloaded with paua.

On another trip a manager at Sealord in Invercargill, Brian (surname forgotten) persuaded Mack to take him on as a partner.

"He thought this was the last great adventure. I said that's easy to say when you're leaning on the bar at the aero club and it's quite different in there.

"He did come in with me and he really started complaining. We had a tent with a whole line of little volcanoes and that was the mouse holes. He was having a cup of cocoa and a chocolate biscuit lying in his bed at night and the mice would come in and pinch his biscuits.

"I'd flown out two loads this day and I said look Brian, you came in because you're a pilot, I can't do all the diving and the flying.

"People think my nickname means I'm mad. It doesn't, it means I get bloody mad."

– Donald James McIntosh

"I knew he was nervous but I didn't realise how nervous and he flat out refused.

"I said if I take the load out, I won't get back before dark and you're going to be here on your own.

"And a storm blew up and I couldn't get back for three days.

"A guy landed in there to check his live capture deer pens and Brian came galloping out of the bush with his suitcase in hand begging to be taken out."

He cackles at the memory, hardly pausing to draw breath in a stream of anecdotes from a riotous life.

Mack moved to Wellington in the mid 90s to be closer to the Beehive in pursuit of licensing of industrial hemp growing.

He expected it would take two years. The reality was nine years.

"Politicians are the same everywhere, they build bridges where there are no rivers. Bureaucrats are the same. They are coming to get your views but you get to the meeting and they've already decided what they're going to do, they're just telling you.

"Why would an agricultural country turn its nose up at hemp?" he asks.

"It has been used throughout history. The British Navy wouldn't have been what it was without it (used for ropes or cords, especially in a ship's rigging).

"New Zealand's a country of feast or famine. The kiwifruit's either up or we're out. Wool's the same. Yet look at all the end uses for this plant and you haven't got all your eggs in one basket.

"It was alright talking to politicians but the moment you said it was cannabis sativa this blood red haze came over their eyes.



Mack during his diving days, collecting a bounty of paua on the Chatham Islands.



Unloading the Stewart Island catch, 1987.



Mack's beach 'home' for eight months in Purakaunui Bay, Catlins.

FEATURE

But he found an ally in Alliance MP Phillida Bunkle, who was Customs Minister in the Helen Clark-led coalition.

Mack and his then wife had supported Bunkle in a free breast screening campaign and she promised that if she was ever in a position to help him, she would.

"A year later she was Minister of Customs and she rang and said 'right, let's get this hemp thing going'."

Industrial hemp does not contain tetrahydrocannabinol (THC), the principal psychoactive constituent of cannabis.

Mack and his third wife Chris drink hemp tea daily.

"It takes care of our aches and pains, it's very good for you. There's no THC in it, you don't run around laughing like an idiot, or anything like that."

And has he ever inhaled?

Long pause. "I'm 71, I grew up in the hippie era. Next question."

He did vote for cannabis reform in the October referendum but has long sworn off alcohol.

"The paua divers were essentially a bunch of really wild men. Something I admired and was a bit scared of with fishermen, they sure as hell knew how to drink.

"Whereas I realised very early on, me and alcohol were bitter enemies. I was an instant arsehole, just add alcohol. I would drink Drambuie by the pint. I was alright for the first half hour. I'd get hangovers that lasted two weeks. That's not normal."

While his wild, paua diving days long gone, Mack's

contribution is not forgotten and he is thankful the resource is being conserved.

"Other abalone fishers around the world are reduced to counting their catch in dozens. I always wanted to take my kids down to the beach and show them a paua, not tell them there's none left now, never mind it was a good thing but it's over now."

The paua are still there, although nowhere near as thick, and the modern-day divers are careful conservationists, mindful of protecting a precious resource.

Many can still drink their share – and then some – but these days they are more likely to take an Uber home rather than park an American muscle car in the neighbour's hedge.



Early hemp days (1996).

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SEA INTO THE FUTURE

SEAFOOD NZ CONFERENCE | 19-20 AUGUST 2021
RUTHERFORD HOTEL, 27 NILE STREET, NELSON

This year, the conference will be held on the 19 and 20 August in Nelson, home to some of New Zealand's largest seafood producers and research science organisations.

The conference brings the technical day and main plenary together into a two-day event that explores the theme Sea into the Future. It will look at how the New Zealand seafood sector will continue to adapt, grow and thrive in the ever-changing environment of the 21st century.

There will be five key topics, each including a mixture of keynote presentations, technical content and Q & A panel

discussions. Speakers will include key politicians, industry leaders and technical experts.

We will celebrate our Seafood Stars at the end of day one and will unwind at the ANZ cocktail function at the conclusion of the event. As always, we will enjoy the very best seafood.

Details of the full programme will be available soon on the Seafood New Zealand website www.seafoodconference.co.nz. Registrations will open late April.

Calling all seafood industry stars



Excellence and innovation in the seafood industry are again being rewarded with the Seafood Stars Awards.

"The awards are a great way to celebrate innovation and excellence within our industry and tell stories about our seafood, our people and our ongoing commitment to producing the best seafood in the world," says chief executive Jeremy Helson.

"We are seeking nominations now and urge you to select your star achievers and tell us why you think they are the best choice."

The Seafood Stars Awards will run across all facets of the industry and will be presented to those who have made a significant contribution to the seafood industry:

- Future Development Innovation Award - presented to the entity that has developed a new technology that does one of the following;
 - Reduces waste by adding value to by-products or waste, or
 - Reduces adverse impacts on the marine environment of fishing or farming seafood, or
 - Reduces adverse impacts of fishing or farming

seafood on protected species, or

- Increases the efficiency of production of seafood, or
- Makes a significant contribution to health or science
- Young Achiever Award - presented to a person, 35 years of age or under, who has demonstrated that he or she has made a positive difference to the seafood industry and has the potential to continue to develop as an effective and respected seafood industry leader or role model.
- Longstanding Service Award - presented to a person who has demonstrated that he or she has made a substantial positive difference to the seafood industry over many years, and who has been a highly effective and respected seafood industry leader.

Nominations close on June 30. Winners will be announced at the Seafood Conference in Nelson and in the Seafood magazine.

Nomination forms can be downloaded at www.seafoodnewzealand.org.nz/industry/seafoodstars or requested from Karen.oliver@seafood.org.nz.

Recreational data – the missing link in managing shared fisheries

Randall Bess



Fish Mainland director Alan Key, pictured here speaking at a Te Anau hui convened by the Fiordland Marine Guardians.

An article in the February issue of the Seafood magazine, *The recreational catch – blunt views from a master fisher*, showed how the Tindale Marine Research Charitable Trust is using citizen science to educate recreational fishers and improve shared fisheries. It highlighted other ways that citizen science can be used for these same purposes and for the benefit of all sectors.

Globally, there is increasing recognition that, for too long, the considerable importance and effects of recreational fishing have been ignored. With this

recognition comes growing awareness that policy makers and fisheries managers should address their recreational fishing sectors by rethinking management objectives.^[1]

Those who have been involved in New Zealand's fisheries can readily recognise that successive governments' objectives have focused predominately on commercial fisheries and settling Treaty-based claims to fisheries resources. These objectives include clarifying roles and involvement in management processes and developing organisations to represent



Fish Mainland founder,
Dr Randall Bess.

their interests.

However, the public right to fish has remained poorly defined compared to the rights associated with quota holdings and Maori customary fishing rights.

There is increasing recognition that recreational

fishing is too important to be continually ignored and disadvantaged.

Fish Mainland Inc was recently established to fill the void caused by there being no effective voice for South Island recreational fishers. Effective, professional representation of recreational fishing interests is needed to address the imbalance in management objectives and inevitable problems in shared fisheries.

The reason is that sources of inter-sectoral tensions and conflicts, if allowed to worsen, could adversely affect the management of fisheries to the detriment of all fishing sectors. Fish Mainland is well supported due to the realisation amongst the South Island fishing sectors that they are better off cooperating to improve fisheries than continuing to be rivals.

A primary concern of Fish Mainland and its supporters is the dearth of data on recreational fishing. Data is currently collected via the expensive and infrequent National Panel Survey (NPS) and a few other research methodologies. Their overall aim is to estimate total catch. While the NPS and other methodologies provide valuable data, there are challenges in their use, particularly in several South Island fisheries.

Blue cod is the largest shared fishery in South Island waters. It is the most popular recreational fishery and so a significant portion of fishers' annual expenditure can be directly attributed to it. The estimated annual value of the South Island commercial fishery is \$6.5 million. It also holds significant value for Maori customary fishers.

More reliable, fine-scale recreational fishing data is the missing link to improving the management of this iconic fishery. For this purpose, Fish Mainland is working with Ministry for Primary Industries (MPI) officials to develop what they consider to be the next step in the evolution of the National Blue Cod Strategy.

While the strategy introduced a traffic light system (e.g., colours change as available data suggest the

state of the fishery is improving or declining), it did not specify the data needed to legitimise colour changes across management areas.

The veracity of any colour changes and associated changes to bag limits, will be critical to gaining recreational fisher buy-in for the traffic light system. An effective way to gain buy-in is through citizen science (e.g., self-reporting).

Fish Mainland applied to MPI's Sustainable Food and Fibre Futures fund to provide financial support to develop and implement a system for recreational fishers to self-report their data on targeted blue cod and bycatch in South Island waters.

The application was approved. The system will collect data that provide broad signals, or indicator statistics, regarding trends in catch and effort, as do potting surveys, that will help legitimise colour changes.

Fish Mainland director Alan Key has been involved in the blue cod fishery for over 30 years. During that time, there has been untold amounts of discussions but no real action outside of Fiordland, he says.

"What Fish Mainland is doing with MPI is the most comprehensive change I have seen to date," Key says. "There is no question, better data is the basis to improving the management of this fishery."

"Besides, the self-reporting system provides the opportunity to address some of the 'unintended consequences' of the Blue Cod Strategy, namely problems arising from landing blue cod in a measurable state and the inability to transit through an area with a larger bag limit taken in another area."

Key says that once the teething problems in the blue cod fishery are addressed, the self-reporting system could be expanded into other South Island fisheries.

"The real value in this system will be our ability to share data, which will further entice all sectors to work together."

^[1] <https://sustainablefisheries-uw.org/managing-recreational-alongside-commercial/?fbclid=IwAR3PeJffMfQVY7jViR175kz6gQtQz1cdnL119B-e-rMNZ9HSeJTCroQtpnw>



COVER FEATURE

Sustainable Seas seeks to essential to New Zealand's

The country's most ambitious science programme aims to develop the marine economy, while protecting the environment. How is it set up and is it delivering? TIM PANKHURST reports:

deliver marine research health and wealth



Groundtruthing drone data gathered for marine environmental monitoring to inform kelp recovery management in Kaikoura.
Image; Dave Allen, Sustainable Seas Challenge/NIWA



Proof-of-concept research. Using drones following the 2016 earthquake for environmental monitoring of the uplifted rocky reef in Kaikoura. Image; Dave Allen, Sustainable Seas Challenge/NIWA.

The country's single largest marine research investment with a \$70 million 10-year scope – titled Sustainable Seas – is more than halfway through its life. Yet it has received little publicity and public comment.

The programme has engaged hundreds of researchers in virtually every scientific and tertiary institution across multiple disciplines on multiple projects throughout the land.

Is it delivering, or is it a bonanza for academics, an opportunity to pursue pet projects at public expense?

Such an assessment is not easy to make.

Wading through scientific jargon, dense reports, graphs, charts, projections is heavy going, like crossing a silt-filled estuary, and in any case, what is the measure of success?

The Challenge is required to report annually to its funder, the Ministry of Business, Innovation and Employment (MBIE).

One of many key performance indicators include two innovative products being delivered to industry annually in Phase I, stepping up to three per annum in the current

Phase II developed to support industry and policy development decision making and resource utilisation.

Industry is defined as all marine users, including fishing, aquaculture, oil and gas, tourism, mining, ports, shipping.

The first KPI report in 2016-17 lists these as "The Ecosystem Connectivity project, in conjunction with NZ King Salmon, sampled around mussel farms and set up mesocosm experiments to test how artificial feed flows through organisms and mussel farms".

Also listed was "defining parameters for the Tasman/Golden bays Atlantis model". The latter was done in conjunction with Southern Inshore Fisheries and Challenge Scallop Enhancement Company and is described as "an end-to-end ecosystem modelling tool, it encompasses everything from sunlight and nutrients through to predators and fisheries".

The Atlantis model gets another rating in 2017-18, this time for its completion and presentation and workshops and stakeholder meetings.

The second year this KPI achievement is "decision support tools that can be used to optimize utilisation in multiple use areas of the seafloor being well socialized among stakeholders".

In 2018-19 the successes are listed as "co-developing methods for extracting three bioactive compounds from



Dr Julie Hall is the NIWA-based director of Sustainable Seas Challenge.

kina with Hikurangi Enterprises" and "rapid assessment tool for power output for tidal farm scenarios proof of concept development collaboratively with MetOcean Solutions and Cawthron Institute".

Moving to the stepped-up Phase

II in 2019-20, the three Innovative products developed to support industry and policy development decision making and resource utilisation considered to be met are:

- **Mountain to sea forecasting near real time of bacterial contamination in Tasman/Golden bays operational on MetOceanView portal allowing aquaculture industry, regional councils and public to visualise coastal contamination events.**
- **System maps developed for marine ecosystem stressors in Hawke's Bay and Tasman/Golden bays to test systems mapping methodology.**
- **Ecosystem service maps of nutrient processing by shellfish in Hauraki Gulf and Marlborough Sounds identifying critical habitats needed to support ecosystem health.**

"EBM must take into account existing rights and legislation and we have put more focus on this in Phase II in the Enhancing EBM Practices theme."

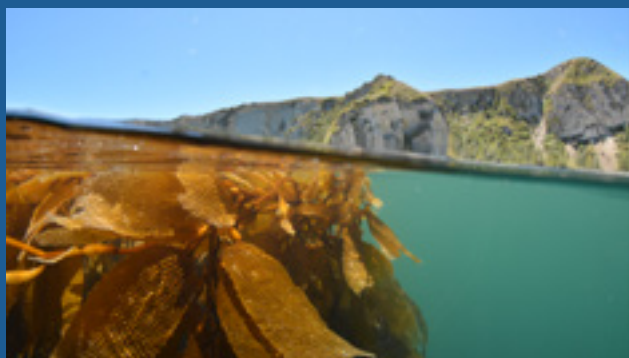
– Dr Julie Hall

In its 2020 annual report to MBIE, the Challenge highlights focus on cumulative effects, providing a better understanding of how multiple stressors interact and tools to aid decision making.

"Findings from a number of projects – ranging from a framework for collaboration between government agencies to the practicalities of data collection for environmental monitoring – have been used by the Ministry for the Environment, Resource Management Act reform panel and the Parliamentary Commissioner for the Environment and regional councils."

It references an open access interactive model (www.oceansplasticsimulator.nz) that shows how floating plastic waste moves around the coastline. "Its purpose is to introduce ocean connectivity to school students, as a route to raise public awareness of the issues around marine management. It includes a section about the importance of the ocean to Maori and their connections with the moana." The underlying mathematics of this model are now being used to undertake impact

Helping to build New Zealand's seaweed sector



Rimurimu (seaweed) has huge potential to contribute to Aotearoa New Zealand's blue economy. Image; Leigh Tait, NIWA.

Rimurimu/seaweed has huge potential to contribute to Aotearoa New Zealand's blue economy.

Seaweed is used commercially for food, animal and human supplements, cosmetics, and fertiliser replacements. In 2018, the global seaweed sector was valued at more than US\$13 billion and grew 8 percent from 2016 to 2018 (fao.org). Global seaweed production has more than doubled in the last 20 years, exceeding natural supply, with the result that seaweed is now more than 30 percent of global aquaculture production volume.

Successful seaweed sectors overseas have hatcheries, large- and small-scale farming operations, processing capability and established seaweed-based products that supply markets. These are assisted by on-going research and development, and workforce support.

Aotearoa New Zealand has more than 900 native

COVER FEATURE

assessments for aquaculture and tracking the origins of mussel spat.

Other projects include mitigation of ocean acidification around mussel farms; aquaculture social licence to operate including changes in wording to send more empowering messages; habitat provision in Queen Charlotte Sound; nitrogen removal potential in Whitford estuary; testing efficacy of natural fibres to grow mussel spat; and a newly announced giant community artwork made from rope which was funded under a \$920k navigating marine socio-ecological system project that sees "art as a powerful communicator of science"

"Progress towards ecosystem-based management approach is a priority."

– David Parker

Sustainable Seas is one of 11 National Science Challenges established in 2014 by the Key Government with a massive total \$680 million funding over 10 years aimed at "tackling the biggest science-based issues and opportunities facing New Zealand".

They also encompass: a better start; ageing well; building better homes, towns and cities; healthier lives; high value nutrition; New Zealand's biological heritage; our land and water; resilience to Nature's challenge; science for technical innovation; the Deep South.



The late Sir Rob Fenwick - chair of the Sustainable Seas Governance Group.

The marine-based Challenge does issue regular public reports in various formats but could benefit from more accessible, targeted updates on progress, equally to herald its successes, to keep all those concerned focused and up to

the mark and to allay suspicions that some of the work is too esoteric to be of value.

The same no doubt applies to all of the Challenges, where so much public money is committed.

The stated aim of the National Science Challenges is "to take a strategic approach to the Government's science investment by targeting a series of goals which will have major and enduring benefits and will answer questions of national significance to New Zealand".

It continues: "The Challenges provide an opportunity to align and focus New Zealand's research on large and complex issues by drawing scientists together from different institutions and across disciplines to achieve a common goal."

What are those questions of national significance and common goals?

For Sustainable Seas, moving to a holistic ecosystem-

seaweeds, a third of which are endemic. Examples of domestic species of particular commercial interest include:

- **Asparagopsis** – Has potential to reduce agricultural methane emissions from livestock when added to feed as a supplement
- **Karengo** – Of interest for the same reasons it was traditionally an important Māori winter food – it has high nutritional value, being up to 30 percent protein and rich in vitamins and iodine
- **Ecklonia** – Already widely used in the agricultural and horticultural sectors in cattle feed, as a fertiliser, and as a nutritional product in apiculture (bee cultivation and products)

The seaweed sector in Aotearoa New Zealand is fledgling but highly dynamic. It is operating at small scale, and many gaps and barriers exist, limiting the

potential growth.

The Sustainable Seas National Science Challenge is working with Māori, stakeholders, industry, researchers, and government agencies that currently, or plan to, operate in the sector – either as farmers or as users of seaweed products – to co-develop a Seaweed Sector Framework grounded in blue economy and holistic, ecosystem-based management (EBM) principles.

The *Building a seaweed sector* project is led by Serean Adams (Cawthron Institute), and the academic-industry research team come from EnviroStrat, Cawthron Institute and University of Waikato. Its duration is from November 2020 to June 2022.

This project is:

- **Reviewing the current state of the seaweed sector**
- **Co-developing a Seaweed Sector Framework for Aotearoa New Zealand, incorporating holistic EBM principles**

based management (EBM) approach to marine management and stimulating a blue economy are the aim.

"There are many and growing uses of New Zealand's marine environment – some of which are competing," the Challenge says. "How can we best develop our marine economy, while protecting the taonga of our marine environment."

How indeed?

Does that pre-determined EBM aim not risk compromising existing rights and legislation?

Absolutely not, says Dr Julie Hall, National Institute



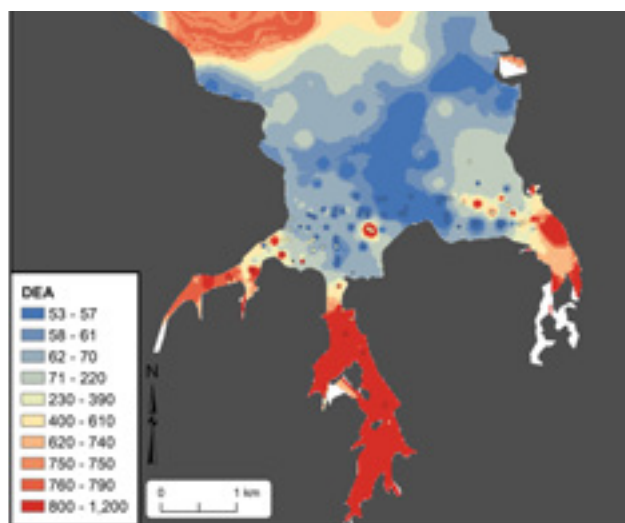
Coasts are at the 'end of the pipe' for discharge from local rivers and streams, so seawater quality is sometimes compromised by bacteria from land-based activities, affecting the revenue of shellfish growing areas like Tasman and Golden Bays. Image; NIWA.

of Water and Atmospheric Research-based Director of Sustainable Seas.

"EBM must take into account existing rights and legislation and we have put more focus on this in Phase II in the Enhancing EBM Practices theme."

She refers to the 2015 business plan at the inception of the project that states the objective set by MBIE for Sustainable Seas is "to enhance utilisation of our marine resources within environmental and biological constraints".

"The research and activities of the Challenge are



This ecosystem service map of Whitford estuary shows areas where nitrogen removal by soft-sediment seabed is predicted to be high.

- **Testing the framework using case studies to understand how it can effectively operate across different scales – e.g., local, regional, national and small to large businesses**

Part one of the sector review is almost complete. This identifies future market opportunities and priorities, relevant regulation and legislation, and includes information drawn from industry interviews conducted by the transitioning to a blue economy project.

Part two of the sector review is also in progress. This has a broader focus, including assessing what research is underway in NZ and internationally, what species have characteristics of commercial interest, ecosystem services provided by seaweed, and the environmental effects (both positive and potentially negative) of seaweed farming.

The team is also helping to inspire the next generation of consumers, industry innovators and employees. Researcher Rob Major (Cawthron Institute)

was the 'marine expert' in the Challenge's annual LEARNZ virtual field trip, this year's topic was *Seaweed – oceans of opportunity*, which took place during Seaweed 2021 (6–14 March). These free educational resources and videos remain online (www.learnz.org.nz/seaweedaquaculture211) for posterity to enable primary



Cawthron aquaculture group manager Serean Adams is leading the seaweed sector project.

schoolchildren to explore the role seaweed plays in ecosystem health, and its potential as the basis of a novel, sustainable marine industry.

To see the detailed research proposal or for updates on this project, visit sustainableseas.challenge.co.nz or subscribe to the Challenge's newsletter.

COVER FEATURE



Field testing techniques to mitigate ocean acidification around mussel farms to improve shellfish growth. Image; Louis Olsen, Sustainable Seas Challenge.



Researcher Sorrel O'Connell-Milne collecting invertebrate and seaweed data for the Ecosystem Connectivity project. Image; Lana Young, Sustainable Seas Challenge.



Three bioactive compounds were extracted from kina, in partnership with Hikurangi Enterprises. Image; Leigh Tait, NIWA.

focused on the development of an ecosystem-based approach to the management of our marine resource," the plan says.

"EBM is a strategy that integrates management of natural resources, recognises the full array of interactions within an ecosystem, including human, and promotes both sustainable use and conservation in an equitable way.

"Successful implementation of EBM will enhance the sustainability of New Zealand's marine resource and add value to the marine economy through a variety of pathways including product certification and provenance, increased investment, enhanced diversification and an increased social licence to operate. The Challenge will also develop a blue economy capability to generate short and long-term benefits for investors."

Under the Phase II (2019-24) document "one of the measures of success is a vibrant blue economy, which is developing regionally and nationally, enabled by Sustainable Seas research".

In Phase I the research was broken into seven programmes – valuable seas; tangaroa; dynamic seas; enabling EBM; managed seas; vision matauranga; our seas.

The descriptions of each are broad, with few specifics.

For instance, the valuable seas strand aims to "develop ways to incorporate economic, social, environmental, spiritual and cultural marine values in decision-making and identifying innovative ways to add value to the marine economy".

The Our Seas programme is equally abstract, its purpose to develop "ways to enhance engagement and participation across all sectors of society, resulting in more efficient and effective decision-making".

"There is much stronger focus in Phase II to make the research more accessible," Hall says.

That research has been refocused into six 'issues-based' research themes, reflecting (i) the real-life interdisciplinary situation and (ii) input from Maori partners + Stakeholders during our consultation around developing Phase II strategy.

These themes are:

- **Tangaroa**
- **Blue Economy**
- **Degradation & recovery**
- **Risk & uncertainty**
- **Enhancing EBM Practices**
- **EBM and BE in Action**

A perceived lack of emphasis on the Fisheries Act 1996, which has the fundamental aim of providing for the utilisation of fisheries resources whilst ensuring sustainability, or the Quota Management System that underpins the fisheries regime, provoked some concern

within the commercial fisheries sector.

Those rumbles led to a meeting of fisheries sector groups with Julie Hall and the chair of the Sustainable Seas Governance Group Sir Rob Fenwick, who died last year, in Auckland in 2018.

Fenwick was receptive to industry concerns.

**"If the fishing industry feels it is being left out, it will be counterproductive."
– Sir Rob Fenwick**

"If the fishing industry feels it is being left out, it will be counterproductive," he said.

"We do need to keep you happy. You are our customers."

The upshot was a change to the blue economy Innovation Fund focus to more specifically support partnerships between Maori/industry and researchers. and encouragement for the seafood sector to submit research proposals (see sidebar). It was also agreed better communication and more specifics about outcomes and economic benefits were required.

There are now eight projects under an Innovation Fund umbrella with implications for the seafood commercial sector:

- **Patangaroa hua rua – the economic potential of collagen and bioactives from eleven-armed seastar which is a nuisance species in some harbours**
- **Kohunga kutai –use of natural fibres to reduce mussel spat loss from lines and drawing on matauranga Maori**
- **Preventing sun-induced skin damage with New Zealand algae-derived bioactives**
- **Whakaika te moana – a hapu approach to aquaculture**
- **Sustainable future for toheroa aquaculture; biology and engineering**
- **Growing community wellbeing with patiki totara (yellow belly flounder) aquaculture**
- **Applying tikanga Maori practice in iwi fisheries**
- **Quantifying and reducing interactions between commercial fishing gear and the seafloor**

The Innovation Fund sits under the Blue Economy theme, which has five projects:

- **Transitioning to a blue economy**
- **Encouraging restorative economies in New Zealand marine spaces**
- **Indigenising the blue economy in Aotearoa which has a strong focus on fisheries**

Measuring the impacts of bottom trawling

Trawling is highly effective in catching fish but faces increasing pressure from those concerned about the effects of its impact on the organisms living on the sea floor. Trawling is the key method that has been deployed for generations in New Zealand and is the method that catches most of our finfish.

Fisheries Inshore New Zealand's response is to promote an innovative project to develop a methodology for empirically measuring bottom contact for small vessels and commence looking at a range of mechanisms that could be deployed to mitigate the interactions where appropriate.

The project has been accepted under the Sustainable Seas Blue Economy innovation fund, with the pilot based in Hawke's Bay due to begin later this year.

To understand the effects of mobile bottom fishing on benthic habitats it is necessary to have knowledge about the habitat, the amount of interaction by gear and component (e.g., trawl doors) and the extent to which such methods are used in each habitat, the proposal summary states.

**"What we are proposing is a new data stream to support decision making."
– Oliver Wilson**

"Towed fishing gears and their components contact the seabed but the level of any effect due to this contact will depend on the type of trawl doors and the ground gear used, the way the gear is rigged and the physical and the biological characteristics of the seabed habitats in the fishing grounds."

"What we are proposing is a new data stream to support decision making, not only for fisheries managers but for operators and net makers as well," project leader Oliver Wilson says.

"We intend to demonstrate how collecting data on current gear use can better inform modifications and improvements to reduce contact where appropriate. Net makers, technologists and fishers can better understand how their fishing gear operates and make modifications accordingly.

"This can also have added benefits to the operator in minimizing fuel consumption, consequently reducing the carbon footprint, and reducing the risk of lost or damaged fishing gear."

The project is based on sensors attached to the trawl

COVER FEATURE

- Growing ecotourism
- Building a blue economy sector – seaweed

In total, Sustainable Seas encompasses around 250 researchers, 37 different organisations and up to 32 projects in Phase II.

"It's a big beast alright," Hall says.

Dogged and determined, Hall is undaunted by its scale.

"It is challenging and complex. Leadership is about developing a strategy and research programme with Maori partners and stakeholders to address the Challenge Objective and ensuring the research has impact.

"It goes across disciplines – research, policy, legislation and matauranga Maori – and that is world leading. We have an independent science review panel from outside New Zealand and the message from them is this is the strongest inter-disciplinary project they've seen."

In 2015, Hall, then a NIWA regional manager for Wellington, applied for the role of Sustainable Seas Challenge Director.

Her PhD is in microbiology, measuring copper and zinc toxicity to algae in freshwater, and she had leadership experience chairing an international research programme on the impact of global change on marine ecosystems.

So, in 2025 when the 10-year project wraps up and \$70 million has been spent, what will be the measure of success?

Hall says full value will only be realised if the Challenge delivers results greater than the sum of the individual research projects.

"Leadership is about developing a strategy and research programme with Maori partners and stakeholders to address the Challenge Objective and ensuring the research has impact."

– Dr Julie Hall

She envisages a blue economy delivering new ways of thinking and working, stimulating new initiatives from tourism to seaweed.

And that a holistic EBM approach will influence legislation, incorporated in policy and regulations.

That approach is supported by Oceans and Fisheries Minister David Parker, who says "progress towards ecosystem-based management approach is a priority".

gear that will transmit data wirelessly, via Bluetooth or the like.

Fisheries Inshore is looking to involve Nelson-based ZebraTech, which has also developed sensors for the measurement of ocean temperatures that are attached to fishing gear under MetOcean's Moana project, to assist to provide the technology.

Fifteen low cost, easy-to-use sensors will be developed and deployed on the footrope, sweeps and doors to collect data on the contact points of standard trawl gear over multiple fishing events. A technician will work on board a chartered vessel to ensure the sensors are operating correctly and to provide field work support and technical oversight.

Fisheries Inshore is working collaboratively with Ngati Kahungunu on the project.

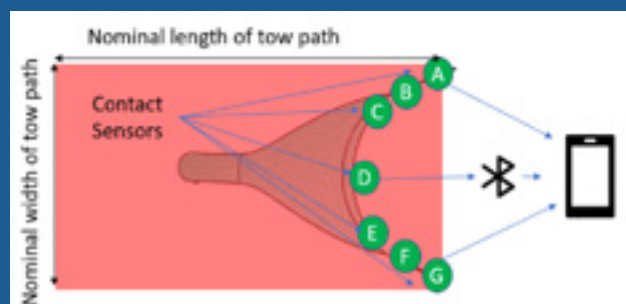
The project is consistent with Fisheries New Zealand's draft inshore finfish fisheries plan and its Fisheries Change programme, which seeks to promote improved monitoring and verification of fisheries.

It also aligns with the Hawke's Bay Marine Advisory Council's Sustainable Seas project on enhancing implementation of ecosystem-based management.

"This work will look to compare commonly used gear with modified gear to demonstrate the effectiveness of these sensors to record changes in bottom contact. This will create data to support fishers when making changes to their fishing gear," Wilson says.

"Fishers are already employing a variety of different gear configurations on their boats, but we don't have the data to be able to quantify what this does to the impact of any interactions. We are therefore wanting to test whether our methodology will measure the changes in 'footprint' from these different gear configurations.

"This work forms the basis for providing reliable data collection methods to support future innovation. Industry is looking to undertake a much more extensive programme over several years to trial, innovate and introduce better gear technology to address bottom impacts."



A project diagram of the proposed sensors, positioned to collect data on potential contact points of trawl gear. Data will then be sent via Bluetooth to a deck unit onboard the vessel to be analysed by the project team.



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Respect the Cable Protection Zone (CPZ)

If you are fishing or anchoring near the CPZ, know your exact location by checking the relevant charts. These include: NZ 463, NZ 6212 and NZ 615.

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Instead, record your position, abandon your gear and advise Transpower's patrol vessel ("Seapatroller", Channel 16 or cellphone 0274-442-288) or Transpower of the situation immediately.

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Under the law, any vessel of any size, fishing or anchoring in the CPZ may be subject to significant legal penalties. These sanctions cover any equipment that may be used for fishing or anchoring deployed over the side of a vessel in the CPZ.

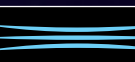
Penalties apply to both the master and vessel owner, including fines up to \$100,000 for fishing or anchoring, and up to \$250,000 for damaging a submarine cable. In addition the Court may order forfeiture of the vessel and Transpower may take legal action to recover repair costs, which could exceed \$30-\$40 million.

Don't take chances. Refer to the publication Cook Strait Submarine Cable Protection Zone. This is located on the Transpower website www.transpower.co.nz

Alternatively contact 0800 THE GRID or 0800 843 4743.

Catch fish... not cables

TRANSPOWER



New design aims to avoid runaway mussel floats



A Tasman-based company has begun a one-year research trial aimed at reducing the number of mussel floats that get lost at sea each year.

Aquaculture float specialist SS Floats is partnering with the Ministry for Primary Industries (MPI) to devise an improved float and attachment method for longline mussel farming. MPI is contributing \$72,500 towards the \$145,000 project through Sustainable Food & Fibre Futures.

The new design must be able to withstand the unpredictability of open waters better than the existing floats.

"Mussel farming in New Zealand began in sheltered bays in the Marlborough Sounds, so the old design, which has been used for the past 40 years, worked pretty well," says Paul Smith, the lead designer for SS Floats. "However, the industry's move to more exposed waters has driven our need to come up with a new design."

Currently made of plastic, mussel floats can occasionally come loose due to adverse weather or tidal conditions.

"Appropriate buoyancy is a critical element of longline mussel aquaculture and requires a delicate balance. Too much flotation and crops are shaken by wave energy at the surface; too little flotation and lines can sink. Both can result in crop loss."

Smith has been researching this issue for some time, so quickly had a prototype solution ready to test once funding was approved.

"We've already got trial floats in the water locally, which are working really well," he says. "We now need to test them in different parts of the country with more exposed waters."

This supports the government's Aquaculture Strategy objective to extend marine farming into the open ocean.

Ned Wells, general manager of the Marine Farming Association, which is supporting the research project, says floats that get loose are generally recovered.

"Despite that, it's an expensive exercise for companies to go round and collect them."

Data collected over the last 10 years shows between 500 and 1500 floats are lost from top of the South mussel farms each year, with an annual cost of at least \$500,000.

"If this project is successful, it will mean one less source of plastic in our marine environment," says Steve Penno, director of Investment Programmes at MPI. "This could help the mussel industry with another step towards boosting its sustainability, while saving time and money."

The new floats will be tested in the open waters of Golden Bay, Tasman Bay, Pegasus Bay and off the coast of Coromandel.



A master fisherman: *Jack from Bluff* by Ross Cantrick

Tim Pankhurst



Sea Rover at Dunedin wharf.

Jack Cantrick has a rare claim to fame in New Zealand's rich fishing history.

As a 15-year-old fresh from school he skippered a fishing boat at Bluff and over 70 years later he was still fishing, in his own boat chasing tuna off the west coast.

That almost certainly made him both the youngest and the oldest skipper of a fishing boat in this country.

Cantrick's remarkable story is detailed by his cousin Ross Cantrick, who has done the fishing industry a service in capturing characters and a way of life before they faded from memory.

Jack Cantrick lived to see his story published but died in Nelson Hospital on February 16, aged 88, after battling cancer for the past two years.

Young Jackie Cantrick first went to sea when he was

14, crewing aboard the Urwin and Company Ltd vessel *Elloenai* skippered by his father, Jack senior.

If the weather was bad, Jack junior went to Bluff School.

If the forecast was good, he went fishing with his dad.

His first boat was *Sea Rover* in 1947, trawling for flounder and catching crayfish in what was then a fledgling industry.

The price for crays was three pence a pound, about \$1 in today's currency, and only the tails were kept.

One of Cantrick's jobs was to collect the unwanted cray bodies that were piled in an old coal bin and dump them at sea clear of Bluff harbour.

He then crewed on a number of boats mainly in

BOOK REVIEW



Jack Cantrick on board his boat, *President Kennedy*.



Sandra Kay, the first boat that Jack owned.



A young Jack on *Sea Rover*.

Foveaux Strait and around Stewart Island before venturing into southern Fiordland catching crayfish.

He achieved his life's ambition in the mid 1960s in owning his own fishing boat, Bluff-built *Sandra Kay*, named after the second Christian names of his two daughters with wife Bernice.

"I take my hat off to Jackie and the many other fishers who have experienced the ferocious weather and notorious oceans that can so often batter the rugged southern coastline, catching fish from pristine waters, doing the job they love."
– Barbara Urwin

The perils of the southern waters were such that over 100 fishing boats and 32 fishermen were lost up to the mid 1980s. Cantrick retrieved bodies and salvaged boats in that time. "If the engine stops then we get shipwrecked and you drown," he observed.

Getting through the western approaches of Foveaux Strait and around Puysegur Point could be very challenging. Round-the-world yachtsman Peter Blake told Cantrick this area was one of the roughest stretches of water he had ever encountered.

The cray boats generally worked out of Milford Sound, with the crays being tailed at sea and stored

in a freezer on board. They were transferred back to Bluff by truck or ute, thawed at the Urwins factory, graded and packed into 20-pound boxes, refrozen and shipped to the US.

Cantrick owned two further boats – *Renown* and *President Kennedy*, the latter named with the approval of the Kennedy family in two letters that have been preserved.

Jack and Bernice moved from their beloved Bluff to Nelson in the 1970s but he would still commute with fast overnight driving the length of the South Island in his prized Jaguar.

Despite his success and experience, Cantrick missed out on owning quota.

When catch shares were allocated in 1986 with the advent of the Quota Management System, Cantrick

had sold *President Kennedy* – he later repurchased it. He had leased *Nimbus* from Urwins and while catching many tonnes of crayfish, it was Urwins as owners who got the valuable quota, subsequently to fetch \$1 million or more a tonne, rather than the man catching it.

Once based in Nelson, Cantrick



'Jack from Bluff' author, Ross Cantrick.



focused on tuna fishing off the west coast with *President Kennedy*. He later became concerned at possible over fishing of this valuable resource.

"The Government hasn't yet introduced quota for albacore tuna, the most fished tuna species," he said. "You

will fish them to death. You used to have a whole lot of people running around the hills in Central Otago with pick and shovel looking for gold. They came from everywhere and how many find gold in those hills now?"

He supplied his tuna to Talley's and built a close personal and business relationship over 40 years.

That friendship along with his knowledge of Fiordland and his seafaring skills led to a command of a different sort – skipper of Peter Talley's luxury launch *Margaret Anne*, navigating the Sounds from Milford to Dusky.

He had come a long way from those early days when he and other fishermen from Bluff were "frighted" to go round to Fiordland. "That was out of bounds; might drown ourselves," Jack said.

But he got to captain the launch because "I know my way round Fiordland".

Jack Cantrick finally gave up commercial fishing in 2018, at the age of 85.

The author, who retired as deputy principal of Motueka High school, modestly states he is a mere scribe but he has done valuable research in listing and picturing all 21 vessels Cantrick worked on and in what capacity.

Barbara Urwin, a director of the fishing firm the Cantricks were closely linked with, is full of admiration.

She writes in a foreword: "I take my hat off to Jackie and the many other fishers who have experienced the ferocious weather and notorious oceans that can so often batter the rugged southern coastline, catching fish from pristine waters, doing the job they love."

Copies of *Jack from Bluff* can be obtained from the author at rcantrick@gmail.com

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FISHING TOWARDS THE FUTURE

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Happy times at Mr Grumpy's

Tim Pankhurst



When Glen Hitchcock opened a fish and chip shop at Foxton Beach, he wanted a distinctive name.

On a phone call to a cousin, the four-year-old who answered yelled out to his dad that the gruff-sounding caller was Mr Grumpy.

Hitchcock laughed and his shop name was born.

That was 20 years ago.

To most people Foxton is little more than a windmill and an eyeblink on State Highway 1 as they speed north or south.

But turn west towards the town and Foxton Beach behind and there is a surprising amount of development.

The imminent opening of the 27-kilometre-long Transmission Gully, soaring Wellington house prices and the availability of land – the council is releasing 200 section sites – are making once moribund coastal

communities like Foxton far more attractive.

Business is booming at Mr Grumpy's and is set to get busier.

The tiny shop employs 12 staff and serves 3-400 fish and chip meals on a busy weekend day, with a wait time of up to an hour at peaks.

The meals are good value, with hoki the flag bearer at \$3.60.

There is a wide range of fish on offer, ranging from tarakihi, gurnard and lemonfish in the \$4 range, orange roughy (\$5.30), snapper (\$6.80) and blue cod at a premium \$7.30.

About 150kg of hoki, sourced from Talley's and Sanford, is sold per week.

Mr Seafood in Palmerston North and Whanganui Seafoods are the main suppliers.



Serving up patrons their fish and chip feed at Foxton Beach's Mr Grumpy's.

The menu is extensive and adventurous, including such exotics as blood-n'guts chips (served with sour cream, tomato sauce and grated cheese); BBQ Bomb (pork riblet in a roll with bacon, onion, cheese and barbecue sauce) cheesy weezy's (chips with tartare sauce or mayonnaise and grated cheese); and ostrich burgers.

Battered and deep-fried Moro or Milky bars are also popular, an option I have never been game enough to try and have no intention of doing so.

There is a Mrs Grumpy, Hitchcock's wife Colleen, who also features on the menu as a hamburger option.

The couple were Taranaki farmers before shifting to the Manawatu 20 or so years ago.

They bought the Longburn Store in Palmerston North, which also sold fish and chips, before establishing in Foxton.

Hitchcock, 70, who prefers campervanning to standing behind the counter these days, is happy to leave day to day management to Bridgette Fricker.

She has managed the shop for 14 years. Her mum owns the nearby motel and a perk for staying there is a free scoop of chips.

"In the summer we're so busy," she says. We work our butts off; we try our best and we try to keep a smile on our faces."
– Bridgette Fricker

Fricker started working in a fish and chippery while still at school, aged 13 and runs a tight ship.

"In the summer we're so busy," she says. "We work our butts off; we try our best and we try to keep a smile on our faces."



"Fish and chips are a cheap meal – you can feed a family of four for \$22."

To the rare complainant – and there is always one – she says, "ring and let us know, let us fix the problem, don't be a keyboard warrior".

Despite serving delicious seafood all day, Fricker cannot eat it.

She puts that down to staying with a grandmother who had been kicked in the nose by a horse and had no sense of smell.

"She served some fish that didn't smell right – she couldn't smell it, but I could – but told me to eat it anyway and I got food poisoning and I can't eat fish since."

And is Mr Grumpy grumpy?

"No," she laughs, "he's not."



Mr Grumpy's owner, Glen Hitchcock.

Trusting in seabird protection

Janice Molloy



Image; Tamzin Henderson.

Twenty years ago, 35 people sat in a room in Nelson for two days talking about seabird bycatch. It was a new and slightly nerve-wracking experience.

For the first time, fishers, environmental Non-Governmental Organisations (NGOs), company managers, ecotourism operators, fishing school trainers, seabird researchers, Maori fishing interests, rubbed shoulders and explored how much common ground we had. It turned out, a lot. Of course, no one wants seabirds to die, and there was a keen interest in working together. So Southern Seabird Solutions was born, the title now shortened to simply Southern Seabirds.

I was working for the Department of Conservation (DOC) at the time. We had called the meeting to see who might want to help work with international fishing fleets that encounter our seabirds when the birds migrate outside our EEZ. But industry participants at the meeting argued that we needed to continue "cleaning up our back yard" as well as working internationally.

The Trust had a dual focus for the first decade, and more recently, working with the recreational fishing sector has been added to our mandate.

Southern Seabirds is guided by a Trust Board made up of CEOs and directors from DOC, Fisheries NZ, Seafood NZ, Te Ohu Kai Moana and WWF-NZ, with

an independent chair. Our Patron is HRH The Prince of Wales who developed a passion for albatrosses during his naval days. The engine room of the Trust is our management committee; these are the operational people who guide our work and help deliver projects.

There is a general understanding in the Trust that we may not agree on all marine issues, and in fact parties at times may be taking opposing views in court. As far as Southern Seabirds is concerned, we leave our swords at the door and work in a collaborative and open manner.

The Trust's projects all revolve around fishers, and focus on education, training, mitigation research and very importantly celebrating successes and leadership to

do with seabird bycatch.

While we're talking about celebrating success, we will be holding our Seabird Smart Awards again this year, so it would be great if you could start thinking about people in the industry you know who are going the extra mile to look after our precious seabird cargo.



Southern Seabirds convenor
Janice Molloy.

Too tired to fish

#1

JANGLE JIM ALWAYS MADE SURE THAT HIS CREW GOT SLEEP, BUT NO NOT HIM. AFTER ONE REALLY ROUGH TRIP, JANGLE SENT THE CREW TO GET SOME SLEEP AND KEPT WATCH.

BUT HE HAD AN AUTO PILOT, RIGHT?

THEY'RE NOT ALWAYS RELIABLE IN FLOOD TIDES. NEITHER ARE TIRED SKIPPERS. BUT ROCKS ARE. AND SO WAS THE AWFUL JANGLE SOUND WHEN HE SMASHED INTO THEM. THEY COULDN'T FISH FOR WEEKS.



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www.maritimenz.govt.nz/fatigue

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Accurate catch reporting fundamental to Quota Management System success

Steve Ham

Steve Ham has been MPI's national manager of fisheries compliance for three years.

During his watch over the past 12 months, he has contributed to the implementation of a new electronic reporting regime which he believes strengthens and complements the Quota Management System (QMS). The QMS is considered the cornerstone of New Zealand Fisheries Management. Under the QMS a yearly catch limit – the total allowable catch – is set for every fish stock (a species of fish, shellfish, or seaweed from a particular area). By controlling the amount of fish taken from each stock, the QMS helps keep New Zealand fisheries sustainable.

Before the QMS, the ability to stop fish stocks from being overfished was limited. Offences and penalties were also geared towards a "high consequence: low probability of detection" regime, whereby it was recognised by the courts that there were difficulties in proving fisheries offences.

This new data system allows fishery officers to get a gauge on commercial fishing as it happens and thereby focus efforts on operators who need further education before problems arise.

The QMS is an effective fisheries management system and has led to much healthier fisheries. But like all systems, it is dependent on precise and accurate reporting.

The rollout of electronic catch and position reporting is a game changer. It enables us to track the position of the entire commercial fleet in real time and get daily information on fish catches. We've never had this level of accuracy and it will certainly lead to better compliance and healthier fisheries.

The information can also be used to inform the public. As an example, over the summer months, MPI received numerous calls from the public to report commercial fishing vessels who were fishing in what they believed were restricted areas. Ninety five percent of these calls could be ruled out immediately and the caller was

informed of the appropriate rules for commercial fishers in the area they were concerned about. The new system provided real time accurate information that means there was no need for the team to follow up and do hours of enquiry work that can often be disruptive for a fisher.

Our job is to protect all New Zealand fishing resources and ensure a level playing field so the resource has future we can count on. This technologically driven system is one of the best tools we now have, to meet these objectives.

In more recent times, the NZ Rock Lobster Industry Council (NZ RLIC) has arranged reporting workshops for fishers which are being held over the next three months throughout New Zealand. The first workshop was held in Invercargill on March 15. The workshops involve fishers, NZ RLIC, MPI compliance staff and Fisheries New Zealand, along with electronic platform providers. The workshops aim to collectively improve a consistent understanding of reporting electronically and the correct usage of codes for their fishery.

This has been a great example of the industry

recognising the importance of what good reporting practices look like and taking steps to improve and educate their sector where possible for the greater good of the fishery.

I firmly believe this system is the way forward. It's a win, win situation for the fishing industry if everyone gets it right.



Steve Ham is national manager of fisheries compliance at the Ministry for Primary Industries.

Albacore tuna fishery delivers and conference looms

Doug Saunders-Loder



Doug Saunders-Loder is president of the NZ Federation of Commercial Fishermen

Well, here it is April. One third of the way through the year and where the hell did that go?

Uncertain times like we have experienced the last 12 months allowed us some time to reflect and to make plans for the future. However, it seems that we have adjusted

to the world of Covid and just altered the way we do business, certainly not slowed it down. Whilst that seems frustrating at times, it is what it is and we must work with what we have in front of us.

Contrary to regular media reports, fishing is generally very good throughout the country and it is these positives that we must embrace. The market still throws up some challenges but is improving every day and with the roll-out of the Covid-19 vaccination both here and overseas and hopefully some relaxation at the borders, this situation is likely to get even better.

The annual Albacore troll season has been successful with boats from all around the country converging on the West Coast over recent months. The weather has proven to be much more favourable than past years which has meant better access over the notorious Westport and Greymouth bars and the fish has been plentiful. Yes, there have been times that the boats have had to avoid the weather but overall, the fishing has been very steady.

At a time where we seem to deal with continuous negative rhetoric this really is a good news story that consists of harvesting a non-quota, highly migratory stock in good volumes for good return. The cost of fishing is low because the wear and tear on vessels is typically less, the cost of fishing gear is low, the fishery is close to available ports and processors and in addition to that, the environmental impacts within this fishery are zero. No marine mammals and no seabirds have ever

been caught by Albacore troll lines. It's been great to see and to hear from so many fishermen that have taken the opportunity this year and enjoyed it.

I can confirm that the Federation's Annual Conference and AGM is on again and is scheduled for June 3 and 4. It will be held in Dunedin at the Distinction Hotel. We intended this last year but had to cancel as a result of the Covid lockdown, so we really are delighted to be able to regather this year. The circumstances last year were clearly beyond our control, but you did not hold back on telling us how disappointed you were that it didn't fly. It is clear that many of you make this conference an annual pilgrimage and be rest assured, as long as the circumstances allow, we will certainly aim to please. Jump on the website www.nzfishfed.co.nz and get registered as soon as you can.

The programme will be as varied as always and something I'm sure you'll all enjoy. We have extended an invitation to our newly appointed Oceans and Fisheries Minister David Parker, and subject to his availability look forward to his view on our Industry and your businesses. We will have updates from FNZ and MNZ and key issues like MarineSAFE, Fisheries Inshore NZ updates, Science presentations from NIWA and the Moana Project will all be discussed. The famous Shipwreck Auction will be held on the Thursday night and on Friday we will run the AGM whilst the partners embark on a popular Dunedin adventure. On Saturday night we enjoy a few drinks and nibbles in the company of the popular TV celebrity Matt Chisholm. Look forward to seeing you there.

In February I promoted the MarineSAFE initiative and I take the opportunity of reminding you again. Please log on to the website info@marinesafe.nz and look to complete the training modules provided. These are a resource that cost you nothing but a small amount of time. They are designed by you, for you and have taken a huge amount of time and energy to create. We are disappointed thus far with the uptake yet continue to hear from those that have done it what a great initiative it has been.

We know it is difficult to find time for most things but please take a minute to investigate these and see for yourself how effective they can be.

Marlborough community mussels-up for the seafood event of the season

Emily Pope



The Talley's tent served up its famous marinated mussels at the March event.

Online ticket sales for the annual Havelock Mussel and Seafood Festival were triple that of previous years, with gate admissions pushing attendance past 4,000 festival-goers.

A literal "event of the season", it was the first major seafood festival to be held since the Covid-19 lockdown.

Marlborough mayor and judge for the day John Leggett said it was great to see the region's aquaculture industry and delicious seafood showcased despite the lead-up uncertainty from changing alert levels.

"People are gagging to get out and into events like this, so it's great to see everybody rolling in here," Leggett said.

Seafood was the star of the 42-stall-spread.

New Zealand King Salmon and Sanford were busy on the barbecue, cooking fresh salmon fillets and hot-smoked salmon tacos. Collectively, the two companies raised nearly \$10,000 for the Graeme Dingle Foundation, helping the organisation to support up to 3,000 youth in the Marlborough region

through their Kiwi Can school programme.

Freshly shucked oysters, harvested from Croiselles Harbour in Marlborough, earned Paradise Oysters the title of Best Seafood Dish and Sanford's general manager of aquaculture Ted Culley pleased the crowd with his delicious Thai red curry mussels, taking out the title of Best Mussel Dish.

Other tasty fare included marinated mussels from the Talley's tent, Mill's Bay steamed mussels, local honey, smoked meats, whitebait fritters and ice cold gin and tonics from the Roots Gin team who served the crowd for a solid eight hours.

Competition was hot at the mussel shucking contests too.

Kono employee Angela Huntly defended her mussel title, winning the Open Mussel Shell Shucking competition for another year and maintaining her Guinness World Record of opening 100 mussels in 1 minute, 55.28 seconds.

Contestants were limbered up for the Mills Bay Celebrity Mussel Shuck. Grant Boyd from Sanford gave Sea Flux director Vaughan Ellis a good run for his money, but ultimately Ellis took out the title of Mussel Shucking Champion of the Day.

Ellis, who has shucked tens of thousands of mussels in his 30-year career in the seafood sector, said he was delighted by the win.

"These guys put on such an amazing event every year, and they deserve all the accolades they receive."

Salmon pin boning and filleting demonstrations, live cooking with celebrity chef Michael Van De Elzen and music performances from the likes of Eden Kavanagh and the Brothers Grimm, were just some of the festivities topping the day's atmosphere.

The Havelock mussel and seafood festival has returned more than \$200,000 in grants to the community since its inception, including support of non-profit organisations such as the Rescue Helicopter Service.



Grant Boyd of Sanford and his fellow contestants took part in the Mills Bay celebrity mussel shuck won by Vaughan Ellis.



Nelson honey mussels.



Festival-goers geared up for the day, donning their greenshell mussel hats.



Sanford's Thai red curry mussels took out the title of the best mussel dish.



The Sanford team served up hundreds of seafood dishes at the festival, contributing, with NZ King Salmon, nearly \$10,000 for the Marlborough Graeme Dingle Foundation that helps support youth around the region.



Mel Shirley, marketing manager for Aquaculture NZ, was on site to hand out some of the festival goodies.



Paradise Oysters, grown in Croiselles Harbour, were a popular hit.



Grilled half-shell mussels with lemon, parmesan & garlic butter

Serves 4

Ingredients

1 dozen fresh live mussels
100g butter, softened,
Juice and zest of ½ lemon
1 tbsp parmesan cheese, grated
1 tbsp parsley, finely chopped
2 cloves garlic, finely chopped
¼ c panko breadcrumbs
Sea salt
Freshly ground pepper

Method

Preheat the oven grill to 230°C.
To shuck the mussels; use a thin, blunt knife. Remove the beard, then over a bowl, hold the mussel firmly in your hand and insert the knife between the top and bottom shell. Work the knife around to cut through the hinge muscle.

Slide the knife under the mussel to fully remove it from the shell. Discard the top shell and place the half shell mussels onto an oven tray.

Combine the butter, lemon zest and juice, parmesan, parsley, garlic, salt and pepper. Spoon the butter mixture onto the mussels and sprinkle with panko breadcrumbs.

Place under the hot grill for 4 – 5 minutes, or until the topping turns golden brown.

Sprinkle with fresh parsley and serve hot with a slice of lemon.

Recipe courtesy of Mills Bay Mussels.

Marine Stewardship Council makes a splash in ocean education

A new science-based ocean-centric learning programme *Te Kawa O Tangaroa* is set to reach hundreds of Kiwi schools nationwide.

The nine-topic resource was launched in early March by the Marine Stewardship Council and the National Aquarium of New Zealand.

Designed by teachers for teachers, the resource is aligned to New Zealand's secondary school curriculum and targets years 7-10 on themes including sustainable fishing, ecology, fishery management and the seafood supply chain.

A series of free teacher training workshops will also be held to equip teachers with the tools to engage students on ocean-topics through presentations, hands-on activities and lab-based experiments.

Prime Minister Jacinda Ardern attended the event in Napier where she spoke of the importance of every child receiving an education on how to care for our oceans.

"Anything to do with the oceans and I'm there!" said Ardern.

The Prime Minister's chief science advisor, Dame Juliet Gerrard, delivered a video address to attendees, commending the new programme.



"I'm really excited at the depth and action focus of the resource," Gerrard said.

"It's really fantastic to have such a comprehensive portal that teachers and young people can go to really get inspired and redefine their relationship with the ocean and understand

the actions that all of us can take to really make a difference for our mokopuna's mokopuna."

Guests, who also included Minister of Economic Development Stuart Nash and Napier City Mayor Kirsten Wise, were treated to a special take on MSC-certified hoki fish fingers donated by Sealord. Napier chefs James Beck and Luke Smith shared their take on how to make fish the hero of a dish.

The full resource, including teacher workshops and virtual classroom events can be found at www.msc.org/tangaroa.

Kuntzsch named new Cawthron chief executive



Cawthron Institute's newly appointed chief executive Volker Kuntzsch officially commenced his new role on March 1.

Previously head of New Zealand's biggest seafood company Sanford for seven years, Kuntzsch replaces Prof Charles Eason, who retired at the end of 2020.

Chair Meg Matthews says Kuntzsch joins Cawthron at an exciting time, as the organisation celebrates 100 years of delivering world-class science this year.

"For 100 years Cawthron has built an international reputation for impact and excellence, bridging the

gap between science and industry," Matthews says. "Former CEO Professor Eason did a great job growing the organisation to where it is today, and we are now entering an exciting new phase looking ahead to the next 100 years of ground-breaking research.

"We believe Volker is the perfect fit to ensure our research programmes continue to support New Zealand's sustainable economic growth, thanks to his proven track record in delivering strong commercial performance coupled with his environmental and sustainability focus.

"He is a leader who is passionate and supportive, values driven, has deep integrity and a love of science".

Kuntzsch says he is excited about moving to Nelson with his family and looked forward to leading New Zealand's largest independent science organisation.

FV Te Runanga joins West Coast fleet



A 26-metre, six-million-dollar longline vessel is set to provide up to 25 new jobs for the West Coast fishing industry and more during its construction, Stuff reported.

Designed by marine architects Oceantech NZ and built by Aimex Service Group in Nelson, the new vessel Te Runanga will be one of only two longliners ever built in New Zealand and the latest addition to Westfleet (jointly owned by Sealord).

It will also be the biggest longliner by nearly 10 metres and have a fish hold that is almost twice as large at 110 cubic metre capacity. The larger hold will mean the target species (ling)

can be stored on ice in 660 litre insulated containers at sea, reducing handling during unloading.

Te Runanga will also be better equipped than the older longliners, robust enough to endure Southern Ocean conditions, and carry a maximum crew of eight.

"Some might think it'll be too small to venture there [the Southern Ocean] but this boat is built like a tank," says Westfleet managing director Craig Boote.

Special consideration had been given to the crew's working and living conditions to prioritise staff wellbeing. Living areas on the top level will have 360-degree views and be placed alongside the wheelhouse to promote more engagement between the skipper and crew. Below deck, each bunk will have its own screen with Wi-fi

"I've tried to design it so that when the crew 'go home' to their accommodation at night it's like going into an upmarket townhouse," Boote says.

Sealord chief executive and Westfleet director Doug Paulin says the level of investment made by Westfleet was testament to Boote's belief in the West Coast fishery and would also be beneficial for the long-term future of the region.

Rock lobster fishery pots new manager

Newly appointed NZ Rock Lobster Industry Council chief operating officer James Robertson says his role in the seafood industry fits his love for the ocean.

Born in the US and raised on Auckland's North Shore, Robertson spent much of his time out on the water, surfing, free diving and volunteering his time as a surf lifeguard.

Completion of a Bachelor of Science in biological sciences, followed by a Master of Science in Marine Science at the University of Auckland, led Robertson back down the fisheries route, with several scholarships landing him the opportunity to work at the Goat Island Marine Laboratory.

Here, Robertson undertook research on how the application of anaesthetics affected the physiological condition of NZ rock lobster under transport conditions.

It was a hands-on project, requiring total immersion in the industry, he says.

"I had to understand every aspect involved in the capture and transportation of rock lobster that aims at providing the highest quality product to the consumer.

"This involved being out on boats, experiencing for myself how local fishermen harvested and handled their catch, and in Leigh Fisheries, evaluating large scale aquatic systems and environments for storage and transportation methods.

"I caught rock lobsters, held them in the Goat Island lab for several months, sedated and transported them myself as part of this research."

After a stint working overseas, Robertson was an operations manager in New Zealand's retail and manufacturing industry prior to joining NZRLIC.

Robertson will be transitioning into the role undertaken by his predecessor, Daryl Sykes. Robertson says it is great to be on board, engaging in the stock assessment work and the ongoing aspects of managing the nine quota management areas that make up the rock lobster fishery.

"Joining NZRLIC in the middle of the fishing year and at the end of the stock assessment process has been a real learning experience," he says. "It's been flat-out from the moment I got to Wellington.



Newly appointed NZRLIC chief operating officer, James Robertson.

"I am looking forward to continuing my work with such a dynamic industry to make a meaningful difference in the management and sustainable use of such a highly-valued species."

Seafood industry welcomes report from PM's chief science advisor

Seafood New Zealand welcomes a new report into New Zealand's fisheries management.

The report, *The future of commercial fishing in Aotearoa New Zealand*, was prepared by the Prime Minister's chief science advisor Dame Juliet Gerrard and published in mid-March.

Gerrard headed an expert panel whose aims were to:

- Reduce the gaps in data and knowledge, and improve data accessibility, in the commercial fisheries sector
- Identify ways to help ensure that fishing is being undertaken sustainably
- Consider the wider environment, ecosystem, and its inhabitants; and
- Help Aotearoa New Zealand commit to a more integrated approach to fisheries management.

The report offered a comprehensive suite of recommendations.

Seafood New Zealand chief executive Dr Jeremy Helson says the industry acknowledges there will be challenges in meeting some of those, however the sector looks forward to engaging constructively with government on solutions.

"We welcome an independent look at our fisheries management, which whilst acknowledged as one of the best in the world, can always improve," Helson says.

"We thank Dame Juliet and the panel for a comprehensive and considered report."

Read the full report here: <https://www.pmcsa.ac.nz/topics/fish/>

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Economic review

of the seafood industry December 2020

Welcome to the latest update on the economic performance of New Zealand seafood. This edition provides provisional data for the year ending December 2020.

KEY RESULTS FOR THE PERIOD:

- The global COVID-19 pandemic has impacted seafood exports, with an overall decrease of 11 percent in value and 9 percent in volume when compared with 2019
- Seafood export value for 2020 was \$1.804 billion compared with \$2.024 billion for the same period in 2019
- There were significant drops in export value to our top two trading partners China and the United States
- Rock Lobster bounced back from the half year position where exports were down 41 percent to an overall reduction in exports of 3 percent.

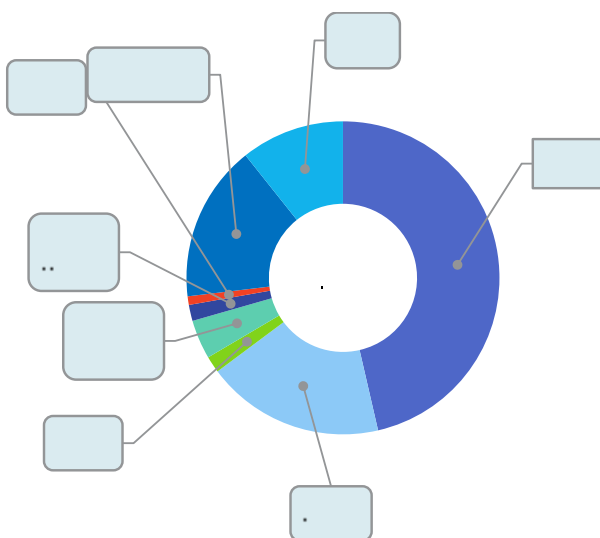
EXPORT STATISTICS

EXPORT NZ\$FOB*

All figures in this section are based on export data provided by Statistics New Zealand and analysed by Seafood New Zealand for the year to December 2020.

Seafood exports to the end of December 2020 totalled NZ\$1,804 mil with 256,019 tonnes exported.

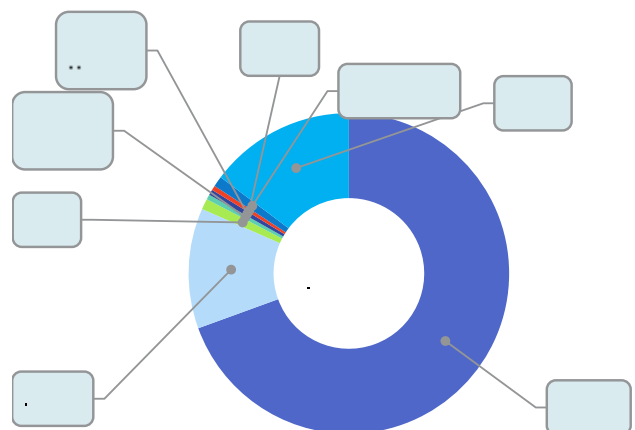
Export value (YTD to December 2020) = NZ\$1,804 mil



EXPORT TONNES

Finfish species accounts for 69 percent of export volume, a reduction of 22,000 tonne on 2019. A number of categories saw a significant drop in export quantities, however rock lobster exports remained similar to 2019 levels despite the early impact of COVID-19.

Export volume (YTD to December 2020) = 256,806 tonnes



Source: Export data, Statistics New Zealand, Seafood New Zealand.

FOB = Free on board. The value of export goods, including raw material, processing, packaging, storage and transportation up to the point prior to loading on board ship.

EXPORTS BY COUNTRY

China, United States and Australia are still in the top three positions, however all have seen a decrease in export value. Exports to Spain, Canada and Vietnam increased significantly over the reporting period.

Top 10 Export Countries by Value (YTD to December 2020)

Rank	Country	2020	2019	% Change
1	China	1,000,000	1,100,000	▼
2	United States	800,000	850,000	▼
3	Australia	700,000	750,000	▼
4	Spain	500,000	400,000	▲
5	Canada	400,000	300,000	▲
6	Vietnam	300,000	200,000	▲
7	Japan	200,000	250,000	▼
8	South Korea	150,000	180,000	▼
9	France	100,000	120,000	▼
10	Germany	80,000	60,000	▲

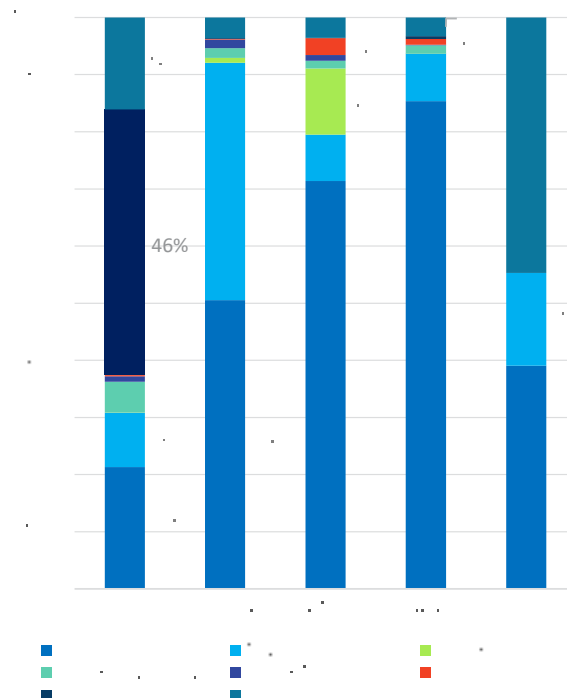
EXPORTS BY SPECIES

The export value of rock lobster decreased by 3 percent, for the year to December 2020 despite the significant disruptions resulting from COVID-19 restrictions early in the year. Squid, hoki, salmon and ling saw significant decreases.

TOP 10 EXPORT VALUES (NZ\$)

Species Name	2020	2019	% Change
Rock Lobster	1,000,000	1,030,000	▼
Squid	800,000	850,000	▼
Hoki	700,000	750,000	▼
Salmon	600,000	650,000	▼
Lingcod	500,000	550,000	▼
Crab	400,000	420,000	▼
Shrimp	300,000	320,000	▼
Sea Urchin	200,000	220,000	▼
Molluscs	150,000	180,000	▼
Other	100,000	120,000	▼

Composition of Exports to Top 5 Trading Partners (YTD to December 2020)



EXPORTS OF MAIN COMMODITIES

Exports of the main commodities for the year ended December 2020 saw total exports remaining the same as 2019. Fish, crustaceans and molluscs decreased by 12 percent. Fruit and wine exports increased compared to the same period in 2019.

Commodity Name	2020	2019	% Change
Fruit	1,000,000	900,000	▲
Wine	800,000	700,000	▲
Fish, crustaceans and molluscs	600,000	680,000	▼
Other	400,000	420,000	▼
Total Exports	2,800,000	2,800,000	0

Exports of the main commodities for the year ended December 2020 saw total exports remaining the same as 2019. Fish, crustaceans and molluscs decreased by 12 percent. Fruit and wine exports increased compared to the same period in 2019.



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GAR1, GAR8
GMU1
GUR1, GUR8
HPB1, HPB5, HPB7, HPB8
JDO1, JDO3
KAH8
LIN1, LIN3, LIN4, LIN6
PAR1, PAR9
RSK1

SCH1, SCH5, SCH7, SCH8
SPD1, SPD3, SPD4, SPD5,
SPD7, SPE8
SPE3
SPO1, SPO8
SQU1J, SQU1T, SQU6T
SSK1, SSK8
STN1
TRE1, TRE7
WWA3, WWA4, WWA5B
YEM1, YEM9

QUOTA SHARES FOR SALE

FLA3 PAD2 PAD7 LIN2

ACE FOR SALE BY TENDER

1. CRA8 - 1 tonne
2. CRA8 - 1 tonne
3. CRA8 - 1 tonne
4. CRA8 - 1 tonne
5. CRA8 - 0.230 tonne

TENDERS CLOSE 15th APRIL 2021 at 6PM (NZST)

BOATS FOR SALE

- 5m Allenco dory - Honda 60Hp - 20Hrs, GPS/Sounder, Alloy trailer - \$30,000 + GST
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- 13.71m steel cod/cray, Doosan L136 - 118Kw - \$350,000 + GST

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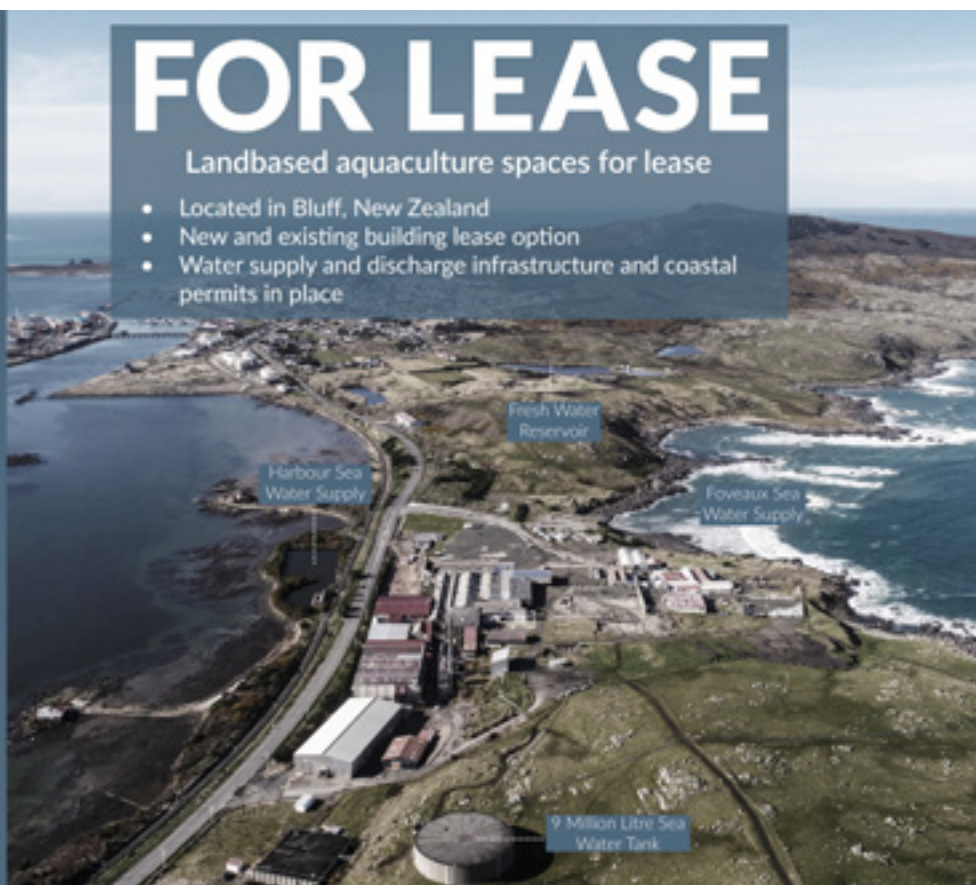
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5226 WESTCOASTER TUNA LINER L 18.6m x B 5.95m
Main Cummins N14 400hp
Cummins 35kVA alternator
Fuel 8,000 litres
Fish holds 10 tonnes (were brine tanks) 3t bait freezer
32 mile tuna drum & spare drum (bottom lining)
Survey to October 2022
VERY WELL PRESENTED VESSEL

\$850,000



5230 BOTTOM LINE, TUNA TROLLER, POTTER
LOA 18m x DB 5m x D 2m
Built Carey's boat yard 1987
Scania D512 new 2005
Fuel 5,000 litres. 12/8 knots
3 x Fish holds = 11 tonnes
Good accommodation & electronics. Offshore Survey
WELL PRESENTED & A GOOD HISTORY

\$450,000



5232 LONG LINER, TUNA TROLLER. Autoline system
LOA 19m x B 6.4m x D 2.75m
2 x 15t = 30 t fish hold
Cummins KT 19 main 425hp
Genset. Fuel 22,000 litres
Good accommodation & electronics. Offshore survey to May 2025. A BIG 19M VESSEL

POA



5224 DEEP SEA AUTOLINER
LOA 21.85m x B 6.71m
Caterpillar D353 425hp
Cummins & Caterpillar aux.
54kVA alternator
65 tonnes ice hold
BFG autoline 7,000 hooks
Good electronics. Offshore survey May 2024. PROVEN VESSEL

POA

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* Figures are approximate as per natural fluctuations in trade.

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- Advanced Deckhand Fishing

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- **Zero Fees** Advanced Deckhand Fishing
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