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SCIENCE OF NEW ZEALAND

The Stewart Island pāua fishery – a story of success and sustainability

Chief Scientist reports on future of commercial fishing

A close-up photograph of a fisherman's hand wearing a tan and blue striped glove, holding a thin line that supports a fresh, silvery fish. The fish is suspended in the air, with water droplets visible around its body. The background is a deep blue, textured ocean surface.

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EDITORIALS

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In this issue

ISSUE #268:

While the daily news may often be bad, the June edition of the seafood sector's magazine is full of optimism.

Our cover feature by Emily Pope details the remarkable recovery of the Stewart Island/Rakiura pāua fishery, proof yet again that well managed fisheries are sustainable for generations to come.

Aquaculture is to the fore as well, with a proposed dramatic expansion in kingfish farming at NIWA's Bream Bay facility in Northland.

There is good news for endangered black petrels on Great Barrier Island, too, where the number of breeding pairs has nearly doubled and the commercial fishing industry is playing its part.

Albatrosses are also in the spotlight, with 17 of the world's 22 species found in New Zealand waters. What's clear is everyone wants to protect albatrosses to ensure the survival of these precious taonga.

Chief Scientist Dame Juliet Gerrard has delivered a thoughtful and encouraging report on the future of commercial fishing; the Deepwater Group led by George Clement has produced its own report on its considerable achievements, not least benthic protection; and Auckland business leaders have been told of the positive outlook for the industry.

With companies struggling to attract seagoing crews, a careers initiative may make a difference. Read about an InZone careers bus that is promoting the many opportunities in the seafood industry to schools across the country.

And the Federation of Commercial Fishermen, led by the inimitable Doug Saunders-Loder, celebrated its annual get together this month at Port Chalmers after a two-year Covid-caused hiatus. Plans for Seafood NZ's annual conference, to be held in Nelson on Aug 19 and 20, are well advanced.

This issue is rounded out with a delicious take on battered cod, courtesy of Stewart Island's novel Kai Kart.

Tim Pankhurst
Editor

From the Chief Executive

Dr Jeremy Helson



Earlier this year, the Prime Minister's chief science advisor, Dame Juliet Gerrard, released her report on the future of commercial fishing in New Zealand.

As this edition goes to print, we await word on what actions the Government will take,

based on the report's recommendations.

Seafood New Zealand editor Tim Pankhurst has highlighted the report in this issue and his views reflect the industry's; that it is a measured and positive report with well-aimed recommendations.

Whilst there will be challenges in meeting some of the recommendations in the report, we welcome them and have already made progress on many, including reducing our carbon footprint and looking at lessening our impact on the sea floor.

The idea of embracing an ecosystem-based management system is often feared by some in the industry but this approach is already enshrined in legislation through the Fisheries Act 1996. For more than 30 years now, this Act has

been guiding the industry to consider the wider ecosystem within our fisheries management regime.

Already more than 30 percent of our Exclusive Economic Zone is protected from bottom trawling through Benthic Protection Areas. Already there are strong protections for the marine mammals and seabirds we share the ocean with.

Yes, we can certainly do better and this thought-provoking report from Dame Juliet should be welcomed as a challenge, not feared as a threat.

The New Zealand commercial fishing industry should be proud of the innovation, care, and consideration that goes into protecting our waters.

The recent Deepwater Group report: *Towards a deeper understanding*, highlighted many of our successes – something we are sometimes slow to do.

In less than two decades we have brought sealion captures down 80 percent, fur seal captures down 90 percent, and common dolphin captures down 99 percent. We have poured \$300 million into research and reduced the number of large trawlers by almost half, while still harvesting the same amount of fish.

And let's not forget that our product is essential, both domestically and internationally. Every year our deepwater fisheries alone provide 700 million servings of seafood.

Sometimes we need to remind ourselves of that.

Calling all seafood industry stars



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

Nominations for the 2021 Seafood Star Awards are now open. The categories are;

- Future Development Innovation Award
- Young Achiever Award
- Longstanding Service Award

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

Details of the categories and nomination forms can be downloaded at www.seafoodnewzealand.org.nz/industry/seafoodstars or requested from Karen.olver@seafood.org.nz.

Chief Scientist reports on future of commercial fishing



Hoki from a trawl survey. Image; Stu Mackay, NIWA.

The Prime Minister's Chief Scientist, Dame Juliet Gerrard, has landed her report on the future of commercial fishing in New Zealand. And at three volumes with a main report of 362 pages and an additional 73 pages of appendices and references, it is a whopper. TIM PANKHURST reports:

The report was commissioned in late 2019 with a brief to "provide science advice to the Prime Minister on commercial fisheries (excluding aquaculture)".

In a refreshingly candid and approachable personal foreword, Gerrard admits the report had a difficult birth, beset by the pandemic and the difficulty of digesting a deluge of feedback, including wildly differing opinions on the early drafts.

"Few would endorse the report in its entirety," she concedes. "There is no accepted single source of truth in the fisheries sector and this report does not claim to be one."

"The context in which our science advice is provided is important. Since our scope was restricted to commercial fisheries, we have placed our recommendations within the framework of the Fisheries Act 1996, which provides the legislation for the Quota Management System (QMS). Those seeking to completely revolutionise the management of fisheries need not read on – a review of the QMS was outside our scope."

Its recommendations are delivered in seven themes – strengthened leadership; a bold oceans strategic action plan; te ao Māori/a connected worldview in 2040 and beyond; a refined set of regulatory tools; a data platform to enable informed commercial and environmental decision making; an ecosystem approach to fisheries management (EAFM) embraced within the current regulatory framework; research and innovation are maximised.



Chief scientist to the prime minister,
Dame Juliet Gerrard.

"The stakeholders we talked to during this project all shared a remarkable passion for the ocean," Gerrard says.

"Many had deeply held views and it was a significant challenge to stay within our scope without straying

into fraught relationships and decades-old feuds.

"Solving ... problems will need people to work together on a system change, as partners not adversaries. Such a system change needs to address not just commercial fishing but recreational fishing too. It needs to address not just fishing but the many other environmental stressors on the marine environment – climate change, land-based impacts such as sedimentation, and pollution.

"Irrespective of individual – sometimes wildly divergent – views of how environmentally sustainable commercial fisheries are in 2020, nearly every stakeholder we talked to agreed we could do better in at least some areas.

"There are conversations around innovation in data management, technology, policy and collaboration that can pilot good practice to catalyse change. This benefits everyone, including commercial fisheries, which have everything to gain from a healthy marine environment.

"The single biggest challenge to progress is the lack of trust and shared vision between stakeholders – in stark contrast to our last project (on rethinking plastics), there is little evidence of widespread social and cultural license for change.

"The need for a partnership approach with iwi to respect the Treaty and the Maori Fisheries Settlement was emphasised throughout and needs to be fully understood by scientists seeking change."

One section is headed: Data, data, data – it is dark down there, but we must make decisions anyway.

"We do have a lot of data about the ocean but in many ways, we also know frighteningly little," Gerrard says.

"What we do know is often uncertain, creating error



Image; Tamzin Henderson.

FEATURE

bars in measurements which foster the differences in interpretations that fuel dissent. The data we do have is poorly integrated across different stakeholders. The mountain of electronic and other data collected for compliance purposes could be better mined for environmental, commercial and social outcomes.

"Deep local knowledge and mātāuranga Māori are also under-used and we could listen more to on-the-ground expertise."

There is also some criticism of the funding model used for much of our fisheries and marine research.

"The industry levy funds vital data gathering and research for significant commercial species," Gerrard says. "It does not pay for basic public good research or research that would be valuable for other fished species. This creates a resourcing shortfall, unreasonable expectations on this funding, a lack of trust and perverse incentives."

There is also a shot across the bows of research providers.

"Relationships between researchers looking at different aspects of the marine environment, housed in different institutions, mirror the poor relationships in the sector as a whole. A lot of energy is wasted trying

to deconstruct an opposing narrative, which could be better spent coming to a shared understanding."

The contested environment is seen as presenting the regulator with formidable challenges.

"The stakeholders we talked to during this project all shared a remarkable passion for the ocean."

– Juliet Gerrard

"More resource is needed to enable the regulator to keep pace with the ever-changing stocks.

"Despite big strides in the introduction of electronic monitoring and initial cameras on vessels, we found that there is sometimes a lack of confidence that plans will be implemented. Making data and information more accessible will help improve transparency of prioritisation and decision making. This will benefit everyone by allowing more independent scrutiny, which will build trust."

But the greatest need was seen as overarching leadership. Science can support the journey but the governance of



Snapper at Lee Fish, north of Auckland. Every fish shipped from here is accompanied by a code that traces back to the fisher and vessel that caught the fish.

the oceans needs to provide a framework in which to do so, Gerrard says.

She saw the appointment of an Oceans and Fisheries Minister (David Parker) and Under-Secretary (Rino Tirikatene) as key steps to this.

An initial internal analysis of the report by the seafood sector is that in many respects it endorses the status quo. It is definitely not a recipe for major change, more one of gradual improvement. Its recommendations generally encourage better implementation of existing statutory provisions within the Fisheries Act.

The report is primarily descriptive rather than analytical, more effective when discussing science matters, less so on policy and management.

A criticism could be that it lacks a clear analytical framework, presenting competing views and conflicts without fleshing out which of these are best supported by the science.

There is reference to poor relationships, lack of trust and hostility in the broader sector but no investigation of underlying causes.

There are a number of case studies, including some examples of industry management initiatives, but the apparent mandate within the QMS that industry should be exercising more responsibility for managing its own activities – including purchase and provision of science – is not explored.

There is a particular focus on benthic-impacting fishing methods such as trawling and dredging.

Some of that comment is unduly negative and sweeping but it does demonstrate a priority area for industry to demonstrate that progress has been made, that extensive protections are already in place and there is continuing innovation.

Seafood New Zealand chief executive Jeremy Helson, one of the many who submitted to the report, welcomed its publication.

He says the summary report generally reflects positively on the industry and the recommendations are generally well aimed and provide some positive opportunities.

"There are a number of areas we can align with," he says.

"That includes implementing an ecosystem approach to fisheries management, available under the existing Fisheries Act, and identifying and protecting habitats of particular significance.

"Reducing the industry's carbon footprint and shifting to more sustainable plastics or alternatives are issues we can take a lead on. In fact, the carbon footprint has already been reduced as a consequence of more efficient and fewer vessels and improved fishing practices.

"Improving product traceability and consumer

information and fishing vessel data collection are other areas where some of the report's recommendations are already being implemented.

"Another is management of protected species interactions.

"There is much undue criticism of our sector, some of it from entrenched anti-commercial fishing interests who will not be swayed whatever the evidence, and it is gratifying to see such a generally comprehensive and balanced review.

"We look forward to working with the various parties to make progress in a number of areas."

Gerrard's commentary is respectful and she concludes her summary with a thank you to the report co-chair and Seafood NZ executive chair Craig Ellison "for his deep knowledge, enthusiasm for science, patient expertise and for connecting us to the sector". And to the fishing industry "for letting us march into your world uninvited and sharing your thinking and expertise, introducing us to your members and hosting us on vessels, in factories and in boardrooms".

"Reducing the industry's carbon footprint and shifting to more sustainable plastics or alternatives are issues we can take a lead on."

– Jeremy Helson

"The depth of knowledge and ideas to protect your environment in your midst is under appreciated and I hope that we have helped to tell some of your success stories to balance the darker ones."

The report itself presents an imagined future of the way fishing might look in Aotearoa in 2040.

The industry will be seen as world leading and all New Zealanders will be justly proud of huge advances made in managing our ecosystems and fisheries in a way that benefits everyone.

"Fishing is a sought-after career for our school leavers," the vision says.

"As well as providing affordable healthy kai for our communities, the reputation of our practices and our products around the globe, and the enormous growth in demand for seafood, has grown the industry to be a \$10 billion contributor to GDP."

Prime Minister Ardern and Minister Parker have both indicated they will look to the report for guidance in relation to the fisheries sector.

That should hold little fear for a vibrant fisheries sector open to innovation and improvements.

Enhancing benthic protection within New Zealand's EEZ

Tim Pankhurst



Deepwater Group chief executive George Clement.

The Deepwater Group supports appropriate empowering legislation to further extend seabed protection to include activities in addition to fishing within New Zealand's Exclusive Economic Zone.

In a letter to Oceans and Fisheries Minister David Parker and subsequent meeting, the deepwater

quota owners' umbrella group has offered to work constructively to enhance the existing protective provisions.

"We understand that the provisions of the Fisheries Act 1996 cannot be used to provide conservation or protection measures for non-fishing activities," Deepwater Group chief executive George Clement says.

"To achieve this, we support in principle the development of empowering legislation that could do so, providing that this does not unduly constrain New Zealand's sustainable

economic use of the resources within our EEZ (i.e., in waters between 12-200 nautical miles, over which New Zealand has internationally recognised management rights) nor adversely affect existing use and Treaty rights.

"We note that, in terms of fishing activities, there are already in place a wide range of conservation measures to ensure that there is an effective ecosystem approach to fisheries management (EAFM) within our EEZ. In addition, New Zealand's main deepwater fisheries have each been independently audited as meeting world leading EAFM standards under the Marine Stewardship Council's programme.

Deepwater Group's position on marine protection is based on:

- **Recognition of the effective marine conservation measures already in place.**
- **Adopting a scientific approach to identify habitat and ecosystem types that are at-risk and are therefore in need of additional protection.**
- **Clear objectives of the ecosystem components to be protected.**
- **Priority to be given to areas of rare, highly vulnerable or outstanding ecosystems for protection.**
- **Habitats of particular significance to fisheries management are identified and protected (e.g., biogenic habitat used as nursery areas).**
- **Legislative provision for compensation to be provided to those whose utilisation rights are significantly impacted by MPA introduction.**

Within the New Zealand EEZ, Marine Protected Areas (MPAs) currently protect benthic biodiversity from disturbance by bottom contact fishing over:

- **30 percent of the EEZ**
- **10 percent or more of each of the oceanic marine environment classifications**
- **28 percent of underwater topographic features**
- **50 percent of seamounts, feature with elevations of 1,000 m or more**
- **88 percent of active hydrothermal vents**

Deepwater Group notes that the protected areas within New Zealand's EEZ are MPAs according to the United



Deepwater Group's latest report, *Towards a deeper understanding*, is a 74-page publication celebrating the sustainability of NZ's deepwater fisheries.

Nations Convention on Biological Diversity (CBD) and International Union for Conservation of Nature (IUCN) definitions.

The distinction is important as the IUCN has called for environmental protection to cover 30 percent of oceans by 2030 (30 by 30 target).

Globally, MPAs cover seven percent (26.3 million km²) of the world's oceans, with New Zealand's MPAs contributing around five percent (1.2 million km²) of this total.¹

MPAs within New Zealand waters cover four times the size of our land mass. Within our national waters, New Zealand has the third largest area of oceans protected under MPAs. Only USA and Australia have larger areas closed under MPAs within their national waters.

Around 90 percent of the EEZ seabed has never been contacted by bottom trawl and each year only about one percent is trawled.

Clement says the Deepwater Group has also entered into a comprehensive five-year scientific programme to identify and map the benthic biodiversity and to monitor bottom trawling within sensitive areas inside the EEZ.

"We appreciate the Minister is listening and hope that the Government in turn recognises the significant conservation efforts already in place by the deepwater sector," Clement says.

Read DWG's case study on benthic protection in their latest report, *Towards a deeper understanding*: <https://deepwatergroup.org/wp-content/uploads/2021/03/DWG-Report-2021-A4-230321.pdf> and in the August issue of the *Seafood* magazine.

^[1] www.protectedplanet.net/marine



A map of New Zealand's Benthic Protected Areas (BPAs) and 'seamount' closures. Thirty percent of NZ's EEZ is closed to trawling.

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Registrations for the 2021 Seafood Conference are now open.

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

This two-day conference event 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. More details about the programme will be available in June.

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

For more conference details and to register, visit: <https://www.seafood.co.nz/2021-seafood-conference>



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Black petrel numbers take flight on Great Barrier



Recent improvements in black petrel survey methodologies have confirmed a population estimate of nearly 5000 breeding pairs on the island.

Six hundred metres above sea level on the summit of Hirakimata, Great Barrier (Aotea), sits a colony of nationally vulnerable black petrels that are quietly defying the odds. Breeding pair figures are estimated to have doubled thanks to more accurate methodologies and commercial fishers are playing a vital part in the birds' recovery. EMILY POPE reports:

Managing director of Wildlife Management International Ltd (WMIL) Elizabeth (Biz) Bell has headed the takoketai black petrel conservation project since its inception 26 years ago and says 2021 has been one of their better years.

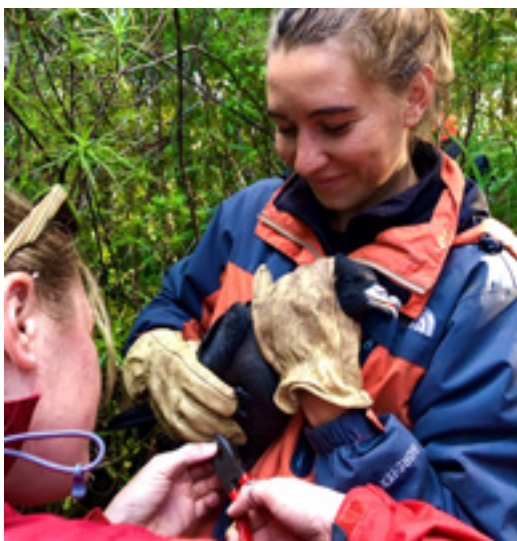
"We've had great breeding success, with a serious number of chicks fledging," she says. "Birds have been able to feed their chicks and there hasn't been any bad weather patterns or flooding of burrows."

Bell and her small team tackle the arduous hike up Mount Hobson (Hirakimata) three times a year, setting up camp for six to eight weeks to monitor egg laying season in December and incubation and egg hatching through January and February. They also document both parents in a breeding burrow and band pre-breeding and non-breeding birds.

It's their final visit of the season, a week between late April and early May, that's critical to the colony's monitoring, she says.

"That one week where we band new chicks confirms the breeding success of the colony," Bell says. "We can assess the condition of the chicks, whether it has been a 'skinny year' which could point to parents struggling to source food, or whether it's a good year, with nice plump chicks."

FEATURE



New fisheries manager for Fisheries Inshore New Zealand, Rosa Edwards, handling a chick that is close to fledging.



Seafood New Zealand newcomer Amelia Tan getting arm-deep in a bird's burrow with Bell looking on.



Seafood New Zealand communications advisor Emily Pope (left) helping Tiffany Plencner, protected species liaison coordinator for DoC, to band a downy black petrel.

Industry newcomers, Rosa Edwards from Fisheries Inshore NZ and Amelia Tan from Seafood New Zealand, donned their gloves and headtorches for this season's banding effort. Delving arm-deep into the metre-long burrows, Bell awaits the "newbie twitch", a moment of nervous anticipation before the chicks clamp down on handler's gloves – eventually emerging from their burrows cobwebbed and sometimes a little bit cranky.

Seventy to 80 chicks were banded most days, in addition to those banded at night. An impressive 476 study burrows were monitored, with breeding success for 2021 reaching over 76 percent – well above the 71.6 percent norm.

"I wouldn't be surprised if our new estimate pushed the global figure to 25,000 birds."

– Elizabeth Bell

"The overall population estimate for Great Barrier used to be 2100 breeding pairs," says Bell. "Now, with improved methodologies, that number has been updated to nearly 5000 breeding pairs.

"I wouldn't be surprised if our new estimate pushed the global figure to 25,000 birds."

Bell says a large part of that population improvement is greater data accuracy and an improved methodology through the use of distance sampling and habitat stratification.

"We finally have a methodology that produces more fine scale data. It uses a model and a detection probability to work out whether we have missed any birds and extrapolates that information into how many birds are in the area. It's much more statistically robust.

"Now anyone could repeat the survey and end up with comparable results."

Banding the birds is critical for understanding recruitment figures and how the chicks survive their 10,000-kilometre trip from the Humboldt Current off South America, back to New Zealand.

"Known-age birds really are the holy grail of population modelling," Bell says. "It's important we band as many chicks as possible while they're still at the colony so we can log their age next time they're sighted or when they return."

A bespoke app, developed in-house by WMIL to manage burrow data, assists in identifying the petrels. Researchers can enter data instantly while in the field and look up the birds' band numbers to reveal their age and any logged interactions or travel patterns.

"We recaptured a 13-year-old at the colony this year. He came from one of the island's super burrows which has produced seven returned chicks over 14 years of the study.



Some of the black petrel banding crew for April 2021. Paul Garner-Richards, WMIL (back); Ellen Webb, WMIL (centre left); Amelia Tan, Seafood NZ (front left); Rosa Edwards, FINZ (front centre); Elizabeth Bell, WMIL (front right) and Tiffany Plencner, DoC (centre).

"This bird's parents have bred successfully, recruiting chicks into the colony almost this entire time. It's a real success story and information that's at our fingertips with this app."

The project's collaboration with fishers has been an important part of expanding that database too, says Bell.

"Continuing conversations with fishers is important," she says. "If a bird is captured, it's really important fishers communicate

that information with us, regardless of whether it's banded. It helps to build our information base on black petrels, their behaviour, where they travel to and how they survive interactions."

The project's 10-year education initiative with commercial fishers has been invaluable for all involved, Bell says.

"It's the conversations and collaboration that are so important in conservation work like this. Technology and mitigation methods to prevent bycatch are always improving and the attitudes of fishermen have really changed. We are all working towards a common goal to protect these birds."

The project allows fishermen to visit the summit for several days, where they learn how to handle the birds – this year's crew were from the *Southern Cross* and the *Tarpeena*.

It's those lightbulb moments that make it so worthwhile, Bell says.

"They realise that seabirds are fishermen too. They go out to sea, catch their fish and bring back food for their families. They aren't all that different."

Self-defined as a "bird nerd", Bell doesn't see herself putting down the gloves anytime soon.

"We've been doing this for 26 years and I still learn something new about the colony with each trip. Even when I'm 90, I'll be up there with my Zimmer frame, so long as people continue to fund us."



The summit of Hiraikimata, Aotearoa; home to the largest colony of endemic black petrels. Images; Emily Pope.

COVER FEATURE

The Stewart Island paua model of conservation and

In the remote, cold waters of the deep south, Stewart Island's pāua fishery is providing a blueprint for sustainable harvesting.
EMILY POPE reports:



fishery - an international sustainability



Stewart Island's only settlement, Oban. Population 400.

It was the early 90s when commercial pāua divers from the tiny settlement of Stewart Island (Rakiura) started to become seriously worried. Over pints at Oban's South Sea Hotel, they voiced their alarm at the massive amount of pāua being taken – 400 tonnes. Collectively, they agreed it was up to them to take action – the alternative, a likely loss of the fishery.

Some 30 years on, divers are reaping the benefits of that watershed moment.

Spawning biomass is rising, harvest sizes are the best they have ever been and the fishery, while still being fished conservatively, is pending a 20 percent increase in Total Allowable Commercial Catch (TACC), from 90 to 108 tonnes - a milestone that Pāua Industry Council chair Stormalong Stanley contends is an international first. The Fisheries Minister signed off on the increase in 2018, subject to the resolution of 28N rights. "It's a real nod to

the health of the fishery," says Stanley. The Californians collapsed their fishery in the late 70s, early 80s and it's still shut. The South Africans closed their abalone fishery by 2007 and the Japanese wild abalone fishery collapsed many years before that.

"In a world littered with collapsed fisheries, we are getting it right."

At its peak, as many as 400 tonnes of pāua were being harvested from the island's coast each year.

Commercial trade boomed with canning technology and fishers began exporting product to China and Japan for good money and few overheads.

It was a lucrative way to make a living.

"Pāua wasn't expensive to catch. You didn't need 100 cray pots, or a 60ft boat to fish. You could jump right into the water and have a good catch in reasonable time," Stanley says.

By the early 80s, Stewart Island was the most attractive place to fish in the South, both commercially and recreationally. The island was much closer and more accessible than Fiordland, and the waters were always clear.

"You could dive in pretty much any weather and catches of over a tonne a day were to be expected," Stanley says.

"Any Joe Bloggs could obtain a permit to catch a

tonne a week and multiple permits were often divvied out to a single person."

The introduction of the Quota Management System (QMS) in 1986 sought to cap the catch but failed to address the sheer geographic size of the fishery.

"The QMS was undoubtedly a positive move for the fishery but there wasn't a fine enough spatial aspect to it," Stanley says.

He and his fellow divers at the time – pāua legends Paul Young, Ross Newton, Paul Pascoe, Ivan Garton, Richard Langdon and Bruce Skinner – agreed over a pint at the pub one evening that what was happening to their fishery "wasn't very clever".

"Even with the cap, we knew more pāua was being taken than what could be sustained."

They made the collective decision in the early 90s to take it on the chin and voluntarily lose quota. Conversations with the Ministry resulted in a 10 percent TACC cut, reducing the fishery to 447 tonnes, from 500.

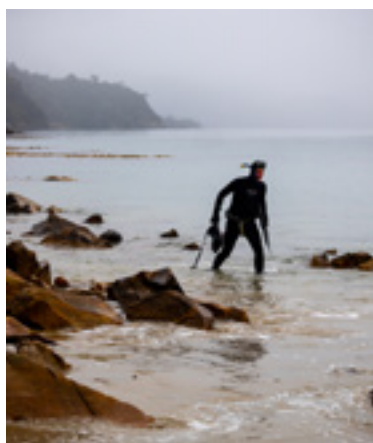
"That was really the beginning of pāua divers thinking and acting collectively for the good of the fishery," Stanley says. "We instinctively knew that, if we wanted our quota to be worth anything in 20 to 30 years' time, we had to look after our fishery."

New Zealand's pāua fishery is divided into 11 Quota Management Areas (QMAs), with catch allowance set depending on population size, stock health and fishing pressure.

Stewart Island was initially part of one giant fishing ground, stretching from the top of Fiordland across to Waitaki River, with everything south of that considered one large QMA.

Too much quota was being focussed on too small an area.

"If you have a fuel tank, you put baffles in it to prevent fuel from filling up one end. What we needed was a type of baffling system to make sure that the catch was spread around the coastline," Stanley says.



Pāua Industry Council chair Stormalong Stanley emerging after a dive for pāua in Lee Bay.

Aware that the initial 10 percent reduction was not going to cut it, Stanley and colleagues swapped wetsuits for coats and ties and headed to the then Ministry of Fisheries office in Dunedin – meeting with several young "pointy heads in suits" to find a solution.

It was agreed that, based on

Generational divers reap benefits from pāua pioneers



Seventeen-year-old Storm Le Quesne (pictured) is part of the new generation of divers reaping the benefits of Pau5B's recovery.

While the industry veterans are feeling the cold and hanging up their wetsuits, the new generation is appreciating the opportunities brought about by their predecessors.

Third generational pāua diver Storm Le Quesne has been diving since he was 16 and says the fishery is thriving.

"My stepdad Rastus was a pāua diver, my uncle Gary Skinner was a pāua diver and both my dad and grandfather Bruce Skinner were pāua divers too," Le Quesne says. "Without them looking after this resource, this young generation of divers wouldn't have the successful fishery that exists today."

Le Quesne says it isn't just the catch that is better than just a few decades ago, it's the quality, the market and the attitudes of the divers.

"The quality of the fish is near close to what it was prior to the fishery's decline. The technology has evolved – better wetsuits, better gear – and the divers are all onboard with proactive fisheries management.



Young pāua divers Angus Crombie (left) and Storm Le Quesne (centre) work alongside industry veteran Russel Keane 'Rastus'.

COVER FEATURE



Pāua industry council chief executive Jeremy Cooper.

the best available information, the most reasonable approach would be to divide the 447-tonne fishery into three areas – Pau5A, Fiordland; Pau5B, Stewart Island; and Pau5D, Southland/Otago – allocating 149 tonnes of catch to each.

Stanley credits a young policy analyst Mark Edwards, now chief executive of

the New Zealand Rock Lobster Industry Council, as being fundamental to the successful subdivision in 1995.

“It was a fantastic piece of collaborative work and a timely response by the Ministry.”

Anxiously awaiting signs of recovery, divers soon realised the problem ran deeper than basic catch figures.

“Data was a luxury,” says Stanley. “We only had anecdotal evidence of the fishery’s health to work off based on what we saw out there in the water - and what we continued to see was a fishery that couldn’t sustain its catch.

“Even with the TACC cuts and subdivision, it was clear to all of us that 149 tonnes were still too much for Pau5B.”

By this stage, Dunedin officials had come to know Stanley and his colleagues on a first name basis. The collective stood, once again in the Ministry office, voicing their unease and pushing for action.

They were right to be concerned.

The two ensuing stock assessments pointed to the need for an eye watering 40 percent TACC reduction, knocking Pau5B down to just a 90-tonne fishery.

“We all agreed that the Ministry’s modelling showed the cut would be an effective way of rejuvenating stocks,” says Stanley. “We didn’t grizzle. We sucked it up and did what was right for the resource.”

To ease the pain, the Ministry split the cut, staging two 20 percent reductions over two years.

Many dive crews dropped out, the fleet size reduced and some consolidation of quota occurred.

“It was still a huge kick in the nuts, but it really helped the industry transition,” Stanley says. “Laurel Tierney and Rose Grindley were the two assiduous Ministry officials ensuring good fisheries management throughout that process.”

Pāua Industry Council chief executive Jeremy Cooper, a newcomer at the time, says the 40 percent reduction was a critical time in Pau5B’s recovery.

“You can go out to some dive spots around the island now where you’ll hardly have to measure the pāua. They’re that big.”

With consumer trends shifting and markets evolving, it’s an exciting time to be a part of the industry. Canned and processed abalone continue to constitute a good proportion of the market demand, while demand for natural, fresh and wild product is on the rise as consumers embrace a greener era.

Le Quesne and the crew on Dwayne Herbert’s boat *Southern Leader* are the largest harvesters of live pāua, leading the market change.

“We catch about 50 tonnes of pāua a year and at least 50 percent of that is now live export. It’s pretty cool to see such a dramatic shift in the market and to think I’m a part of that.”

The domestic market has evolved too, growing a modest amount of demand for Individually Quick Frozen (IQF) product when traditionally there was little domestic demand for pāua.

Quality has become increasingly important, Le Quesne says.

“Consumers expect the best. Not just the best quality, but that their fish are handled with care. We take extra care removing pāua off the rocks so as not to damage them, then they’re placed in holding pots to keep them live until they’re ready for export.”

The *Southern Leader* team also use specially designed bins, with slats for the pāua to stick to so the fish aren’t overcrowded or crammed together.

“It’s a real change from my grandad’s harvesting days when they would shuck the pāua themselves and store them until they were processed – usually canned,” Le Quesne says.

“Now we export them whole, shell and all, in pristine condition.

“The whole fishery, from reef to plate, has become a pedestal example of what’s possible when everyone works collectively. The fishery is thriving, the market is stable and adapting. Everyone is winning – both the fishery and the fishermen.”



The market for pāua has evolved in recent years, with greater demand for live and Individually Quick Frozen (IQF) product, as pictured here.

"For three or four years, we were pretty concerned the reduction wasn't working," he says. "Fishing was flat, catch rates didn't improve and in some places, they appeared to get worse."

"Divers working Stewart Island, stalwarts like John Hildebrand (Hildy), quietly worked on accepting lower catch rates compared to other areas."

Part of the problem was an outdated Minimum Legal Size (MLS), which had not changed since its enactment in the 60s. The MLS was intended to protect juvenile pāua so that when they reached maturity, they would have two to four years to contribute to spawning events.

Scientists originally implemented an MLS of five inches (127mm) for Kaikōura – a size deemed appropriate and specific to the area. Regulators later applied that MLS generically across neighbouring pāua fisheries, rounding that figure down to 125mm with New Zealand's transition to the metric system.

"We instinctively knew that, if we wanted our quota to be worth anything in 20 to 30 years' time, we had to look after our fishery."
– Stormalong Stanley

That simple decision was inadvertently detrimental to pāua's spawning cycle, slowing recruitment and the health of the overall population, says Cooper.

"We discovered it takes about five years, from spawning to surviving adult pāua, to actually change or improve population numbers.

"At an MLS of 125mm, pāua only had a year or so of spawning before being caught, resulting in fewer numbers of juveniles replacing the adults that divers caught."

The other problem was that the pāua in 5B have some of the fastest growth rates in New Zealand post-maturity. An MLS of 125mm wouldn't support the spawning potential of these larger sized pāua.

Cooper says divers all agreed the current MLS meant they were catching pāua too small, but no one knew what the new minimum size should be set at or what the end goal should be.

"There were many arguments and discussions amongst ourselves as to why we would or wouldn't increase the size but in the end, we collectively decided to suck it and see."

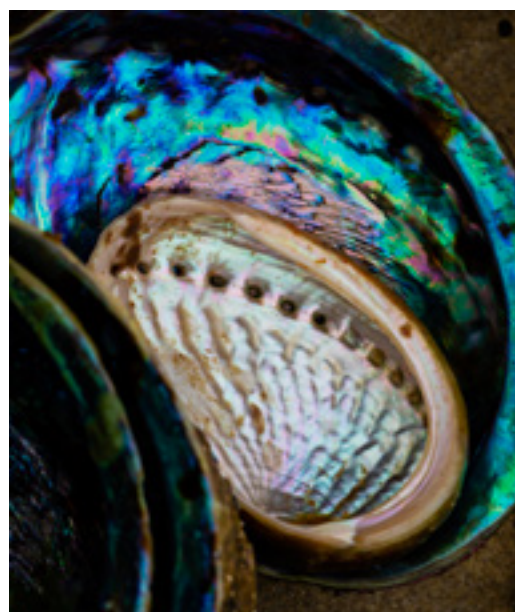
Divers voluntarily upped their Minimum Harvest Size (MHS) to 127mm at first, then by 2mm every year after that.

The benefits were multiple.

Catch rates slowly climbed, pāua had more spawning seasons before being harvested and the fish were bigger and heavier, meaning divers were taking fewer individual pāua per tonne of TACC.



A pāua-friendly plastic fishing knife helps divers remove the fish from rocks without injuring them and also serves as a measuring tool for recreational fishers.



Haliotis iris is the scientific name for blackfoot pāua, named so after the Greek goddess Iris owing to its rainbow-coloured shell.

COVER FEATURE



An island feed, featuring the smaller abalone species, yellow foot pāua (centre).

It was not long until divers were catching well above 130mm.

"Today we are catching at a voluntary 137mm and only taking 11 percent of our adult pāua population" Cooper says. "It has been a sustainable solution for us and a sustainable solution for the fishery."

"Our guys realised, if they got their act together and worked collectively, they could build a stronger, healthier fishery instead of just competing."

Described by Stanley as a champion organiser, Cooper drove the establishment of five representative organisations, known as Pāua Management Action Committees (PauaMACs), to engage in regional issues and management of the QMAs.

A national umbrella agency, the Pāua Industry Council Ltd, was founded shortly after in 2005.

"Everyone got together before each fishing season to assess how our 'paddocks' were currently fishing and to document the changes we thought might improve productivity and yield, like harvest caps and MHS variations," Cooper says.

"We also took a long hard look at ourselves and considered what sorts of behaviours we wouldn't want to see in our industry."

The subsequent development of a nine-point Code of Practice set out a collectively agreed industry protocol that was outlined in every PauaMAC's annual operating plan:

- **Avoid removing undersized pāua from the reef**
- **Use pāua friendly tools**
- **Take care when removing pāua from the reef**
- **Keep pāua damp and in the shade**
- **Return undersized fish**
- **Leave adult aggregations intact**
- **Respect the rights of other user groups**
- **Know how to measure your pāua**
- **Report suspicious or illegal activity**

Pāua pearl pioneer Dick Langdon says the conservation ethos of today is a far cry from his dive days where it was a mad scramble to harvest the black gold.

"Russel Keen 'Rastus' and I visited Cod Fish Island recently to a dive spot called the 'shorty patch' that was



plundered in the 80s.

"When I heard the voluntary MHS had reached 137mm, I thought 'Jesus, it's going to be a long day'. But it wasn't. We dived there for a couple of hours and couldn't believe the abundance of pāua – and all between 125mm and 137mm. You hardly had to measure. It was pretty impressive considering how depleted the area was for a while."

Langdon says the change that divers have brought about over the years is phenomenal, with catch near as good as it was in the heyday.

"For a bunch of fishermen to set aside their personality differences, work collectively and voluntarily take hits for the good of the fishery... it's bloody impressive."

The community has held an important role in the management of the fishery too, as recreational fishing increasingly encroaches.

"It's common now to see a group of reccies, kitted up in their wetsuits and heading out on their boats," says Langdon. "They'll all disappear, return with a feed and then three hours later, head out to fish again."

Linesman for the island's power station Chris Dillon is one of the devoted locals policing recreational fishers.

He says a core reason for the increase in poaching is because a lot of the island's dive locations are out of sight.

"We are all just trying to do the right thing," says Dillon. "If I see someone wandering up the beach with a bulging bag, I automatically know they aren't following the rules. I often get out of my car and ask them to hand over their bag so I can tip out the excess and undersized pāua."

"The recovery is a real testament to the commercial guys who have got their act together, it's just a shame all of that could be put at threat by the carelessness and cheek of some recreational fishers."

"For a bunch of fishermen to set aside their personality differences, work collectively and voluntarily take hits for the good of the fishery... it's bloody impressive."

– Dick Langdon

With stock assessments deeming Pau5B as healthy and stable, industry is now directing efforts into fine scale management.

"Pāua fisheries are no different to dairy farms," says Cooper who has a lifelong background in sheep, dairy and crop farming. "It would be nuts to try and manage all dairies within a region as if they're one farm."

"Some stretches of coastline have different wave



A young Stormalong Stanley (left) and Chris Dillon in the first prototype Stabcraft boat Abalon – early 90s.



A 3.8-metre Naiad boat during the Island's heyday in the 80s.



Late pāua industry legend Paul Young aboard FV Reggae. Mid to late 90s.

COVER FEATURE



Pāua pearl pioneer and Rakiura local Dick Langdon.

actions, different seaweeds, temperature variations and effects from land run off. They need to be managed on an individual basis and at a very fine scale.”

Conducting research and establishing a data pool have been key in executing fine scale management.

“To manage it you need to be able to measure it,” Cooper says.

Industry has developed dashboards, allowing dive crews to see where harvesting has occurred, the average catch per season, month or year, the ratio of kilograms caught per hour and the number of divers that have worked in the area. Crews can then use that data to decide whether to harvest the area or move on to another.

“We have also increased our catch sampling,” says Cooper.

Harvested pāua are measured and the data logged to

inform stock assessments, length at maturity reports and to build a picture of pāua growth rates.

“All of the data we are collecting will be used to populate a fine scale harvest strategy for improved fisheries management now and in the future,” Cooper says. “These harvest strategies provide a real time measure of productivity versus extraction. If the data shows change is needed, then harvest crews can implement an appropriate management decision the very next day to correct it.”

A huge amount of effort has pooled into supporting mother nature too, says Cooper, who emphasises that the industry didn’t just want to revive the fishery, but enhance it.

“Sometimes nature needs a helping hand to rebuild populations,” he says. “What we do with these struggling areas is grow juvenile pāua in land-based hatcheries until they’re large enough to be planted out onto the effected coastline – a process called reseeding.”

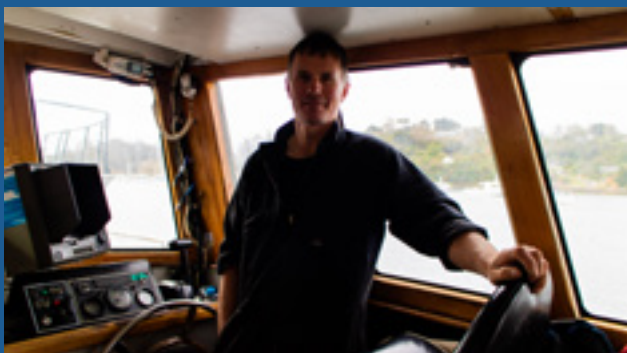
Translocation, another enhancement tool, has been successful at building pāua spawning banks on Rakiura.

Veteran pāua diver Rastus Keen had the idea to move adult pāua from high-density, slow-growing areas to those needing to be rebuilt. Pāua are placed close together on the recipient site to increase spawning viability.

PIC fisheries scientist Dr Tom McCowan has since been implementing translocation as a fisheries management tool for Pau5B, studying the suitability of several recipient sites around the island.

“The idea is that the spawning banks remain untouched

A remarkable evolution



Thirteenth generation Rakiuran Zane Smith has been diving for pāua for over 30 years.

Zane Smith first went commercial pāua diving in 1988. Thirty-three years on, he says Pau5B’s evolution has been remarkable.

“I’m a 13th generation Rakiuran and all my forefathers and mothers were fisherman,” Smith says. “My father was amongst the first to start harvesting pāua commercially. Stocks were so plentiful back then that they could wade out in the shallows and collect pāua in their gummies.”

Smith began diving for quota in ‘88 with Helen Cave’s two sons – the owner of the island’s fish factory.

“It wasn’t until I bought my first boat in ‘96 that the fishery bottomed out,” he says. “Stocks were pretty grim but I was fortunate enough to be among the few divers to hold my own.

“Things certainly changed between those generations.”

Smith says data collection became a large part of Pau5B’s recovery phase, with he and his crew among the first to use data loggers in New Zealand fisheries.

“We opted to wear data loggers on our dive gear

by harvesters for several years while juveniles settle up and down the coast either side of the banks," McCowan says. "The research has highlighted the great potential for spawning banks in repopulating depleted areas."

Implementation of a S.11A Fisheries Plan will be the next step for Stewart Island, followed by authorised management, says Stanley.

"We think authorised management is the natural development of the QMS," he says. "We have gone as far as we can with voluntary measures to the point where it would be difficult to get any more sophisticated."

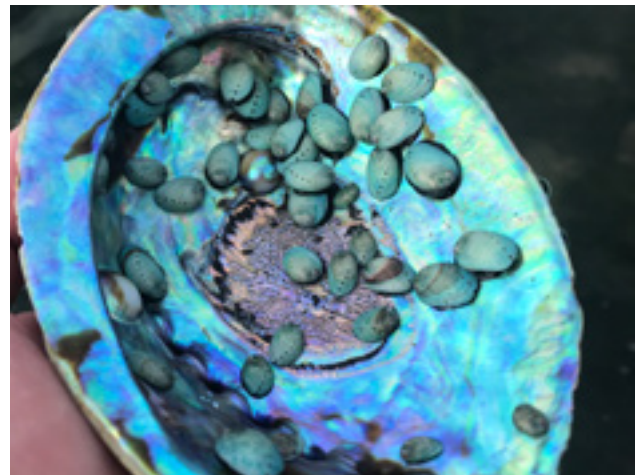
"When a collective of quota owners identify measures that are good for the fishery and don't impact on any other stakeholder, they should be able to take action on simple management issues. Raising the MLS, for example, or spreading catch effort, as backed by the ministry with regulation. Then it only affects commercial fishers."

It is these considered and collaborative management decisions that will cement the success of Pau5B, he says.

"The achievement in turning around Rakiura's pāua fishery is something everyone involved should be proud of. From the Ministry officials of the day who adopted an intelligent approach to managing the problem to quota owner divers who trusted each other enough to work collaboratively and stay the course."

"Their legacy will be a showcase fishery, a classic example of getting it right."

Pau5B is believed to be the only wild abalone fishery in the world to have recovered from the brink of collapse.



Juvenile pāua from an industry reseedling project.



Pāua Industry Council fisheries scientist Dr Tom McCowan completing reseedling work in Kaikoura.

before electronic reporting was even law," Smith says. "We didn't have to collect that data, but we did it for the good of the fishery. The loggers recorded water temperature, dive time, location and catch per unit effort. We really were leading the way."

"This new generation of divers are now reaping the benefits. It's a much more abundant fishery than a few decades ago."

Today, Smith catches a healthy eight tonne of pāua off Stewart Island's coast for Ngai Tahu.

"We are doing more and more IQF product than just five years ago and that's led to more live product too," he says. "Eighty percent of what I catch these days is live export."

The larger size of Stewart Island pāua have become well suited to the latest wave of market demand that seeks 500g pāua or bigger too – although Smith

stresses the importance of divers educating that market on the impact of size-specific demand.

It's an exciting time to be in the industry, says Smith.

"I have been doing this since 1988. I've seen where the fishery has been and where it is now. To be a part of how it's evolved, to be supplying those market shifts and to have safeguarded the fishery for future generations... it's really quite satisfying."



Smith's boat FV Wildfire.

"catch fish...not cables"

There are a number of international submarine cables which come ashore in the Auckland area. These cables supply international communications for both New Zealand and Australia to the rest of the world.

New Zealand is a very isolated nation and as such is extremely reliant upon global communication via submarine cables. Here in New Zealand over 98% of all international communication is carried via submarine fibre optic cables. These cables are a key component of New Zealand's infrastructure and play a significant role in our everyday lives, the general economy and future growth of New Zealand.

These cables are laid in three submarine cable corridors in the greater Auckland area where anchoring and fishing is prohibited under the Submarine Cables & Pipelines Protection Act.

These areas are:

- **Muriwai Beach** out to the 12 mile territorial limit where both anchoring and fishing is prohibited.
- **Scott Point to Island Bay** in the upper Waitemata Harbour where anchoring is prohibited.
- **Takapuna Beach** this runs from Takapuna Beach in the south to just north of the Hen & Chicken Island (opposite Taiharuru Head) where anchoring and fishing is prohibited.

Note: These protected areas are monitored by sea and air patrols.



Symbols Relating To Submarine Cables

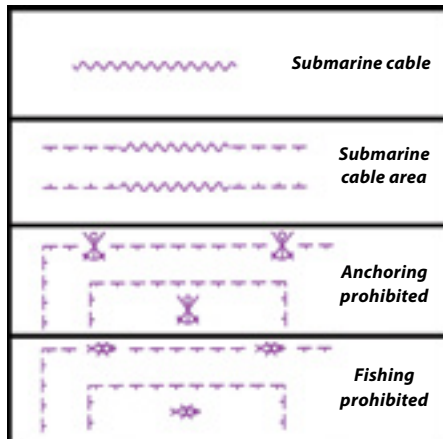


Figure 1.

These are some of the penalties

- A maximum fine of \$20,000 for a non-commercial vessel.
- A maximum fine of \$100,000 for a commercial vessel.
- A maximum fine of \$250,000 for damaging a submarine cable.

Additional to the fine for damage, the cable owners would inevitably pursue the recovery of costs associated with repairs, this could be up to \$100,000 plus a day; a typical repair can take up to two weeks.

Be Aware

These International submarine cables carry up to 10,000 volts to power the system repeaters along the cable.



For more detail refer to appropriate marine charts.

What should you do?

- If you are going into any of these areas, be sure to check your marine charts and/or GPS plotter so you know the exact locations of the prohibited zones. The relevant charts are NZ53, NZ5322, NZ532, NZ522, NZ52, NZ42 and NZ43. The symbols used to mark the zones are detailed in Figure 1.
- If you suspect you have snagged your anchor or fishing gear on a submarine cable in one of these areas, don't try to free it. Note your position, abandon your gear, then call 0800 782 627.

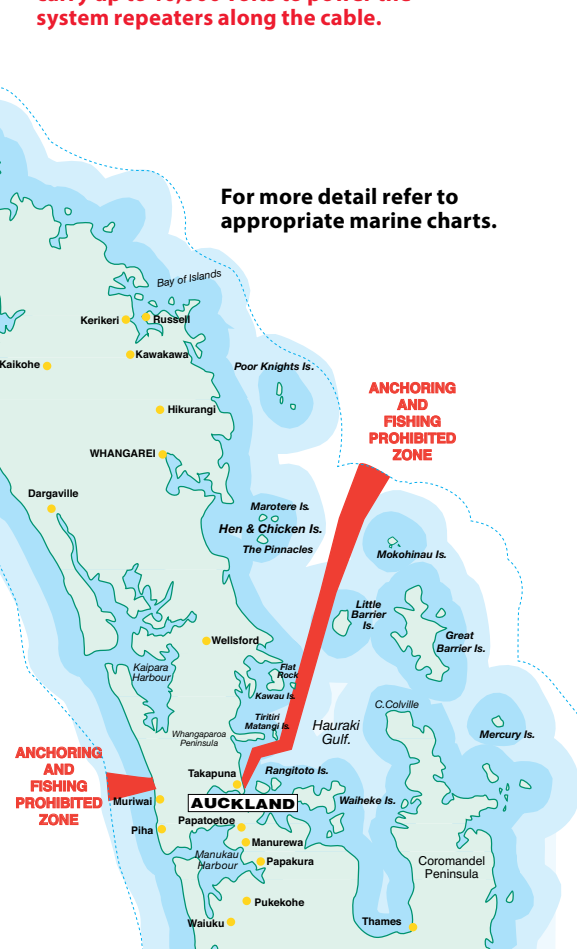
What happens outside the prohibited areas?

These cables are covered by the Submarine Cables and Pipelines Protection Act regardless of whether they are inside or outside a prohibited area. Beyond the confines of the "anchoring and fishing prohibited" areas, the cables are clearly marked on the appropriate marine charts.

Considering possible positioning inaccuracies and repaired cable section deviations, fishermen are advised to keep a minimum distance of one nautical mile from either side of charted cables.

Note this number:

For any queries regarding submarine cables call: **0800 782 627**



Working together on the water to save albatrosses

Elizabeth Heeg



Buller's albatross. Image; Tamzin Henderson.

The theme for World Albatross Day 2021 (June 19) is 'Ensuring Albatross-Friendly Fisheries'.

Of the 22 species of albatross worldwide, 17 species can be found in New Zealand. Eleven of them have breeding grounds here, and the world's only mainland royal albatross breeding ground is found at Taiaroa Head in Dunedin.

It isn't all fluffy chicks though, with seven of the 11 breeding albatross species classified as endangered or vulnerable. Fisheries bycatch is one of their main threats.

The Department of Conservation's Protected Species Liaison Programme works with individual fishing vessels to find ways to mitigate the bycatch of protected species, such as albatross and dolphins.

"The Programme is built on good working relationships with vessel owners and operators" says Tiffany Plencner, protected species liaison coordinator at DOC. "We develop a personalised risk management plan with each vessel, and work with operators on practical solutions, alongside the standard regulatory approach."

There are currently four liaison officers across the country, based in Whitianga, Tauranga, Nelson, and Dunedin. So far, they have worked with about 250 fishing vessels across the

bottom and surface longline, trawl and set net fisheries, helping to roll out tori line materials and technologies such as hook-shielding devices.

Fisheries New Zealand is a partner in the project, providing DOC and the Liaison Programme with information on seabird captures as they happen. This builds on the real-time reporting by fishers that has been possible since the roll-out of Electronic Reporting.

Igor Debski, principal science advisor marine at DOC, says both agencies also partnered on developing a new National Plan of Action for Seabirds (NPOA Seabirds 2020), released last year and the Liaison Programme is an essential part of the commitment to meet its objectives.

"Working closely with fishers on the water is an important part of the NPOA Seabirds 2020."

"What's clear is everyone wants to protect albatrosses to ensure these precious taonga are here for future generations. We are all working together towards a vision of zero fishing related seabird captures, and our Liaison Program provides important work to support this vision," says Igor Debski.

Elizabeth Heeg is director aquatic of Department of Conservation.

Business leaders assured of health of New Zealand seafood sector



Trust chair Phil Brosnan (left), speaker Tim Pankhurst and life member Gary Monk.

This is an edited review of the New Zealand seafood sector delivered by Tim Pankhurst to the Business Enterprise Network comprising Auckland business leaders.

New Zealand's history is one of extraction and exploitation – from gum diggers and gold miners, whalers and sealers, to foresters and sawmillers, farmers and landowners.

Fishing is no different.

Up until the advent of the Quota Management System in 1986, overfishing was rampant. There were no controls on entry to the fishery and it was a free-for-all, catch as much as you could with no constraints other than ability to land it and sell it.

As a result, the inshore fishery was on the verge of collapse with too many boats chasing too few fish.

There was much less pressure on the deepwater fishery, which was still being developed.

Foreign fishing boats, led by the Japanese, first turned their attention to our waters in the 1960s and by the mid

70s, the Russians, Taiwanese, Polish, Koreans, were all here in force. There was little check on their activities until the International Law of the Sea was enacted in 1977, which secured New Zealand's 200 nautical mile Exclusive Economic Zone. We don't really have any idea what the foreign boats took, other than that it was a lot of fish.

At that time New Zealand did not have vessels capable of fishing deep water and we were obliged to enter into joint ventures until a local capability was established. The fishery is now largely NZ-owned and operated and there are no foreign flagged vessels in our waters. There are some foreign crews but they are subject to NZ wages and conditions. It is an indictment on our soft, handout society that too many unemployed people are happy to draw the dole rather than earn good money at sea and that we rely on foreign backpackers to pick our fruit.

We're very good in New Zealand at blaming someone else, rather than addressing our own behaviour.

New Zealand's total marine catch peaked at nearly 650,000 tonnes in 1997 and 1998. Since 2009 the catch has remained stable at less than 450,000 tonnes, of which

over 90 percent is exported. That figure is unlikely to increase in the medium term and there is no pressure from the commercial industry for it to do so. It is not a case of catching more fish, it's more about adding value to the current catch. So, instead of exporting hoki in frozen blocks as a commodity, the emphasis is on fresh chilled fillets.

There are always plenty of challenges but the seafood industry is in a pretty good position. We have a sustainable fishery, strong demand for product that is seen as both delicious and nutritious, a top international reputation, diverse range of species, multiple markets, increasing innovation and some exciting new developments.

That includes products that would have been unimaginable a decade or so ago, such as collagen spun from hoki skins to produce anti-wrinkle skin products and wound dressings; pharmaceuticals and nutraceuticals from mussels with their anti-rheumatism and other properties; stock feed and fertilisers from fish guts; high end pet food; seaweed harvesting and algae growing.

Current aquaculture exports are around \$600 million a year. The Government has seen the sector's immense potential and proposed a five-fold increase in exports to \$3 billion by 2035. That will only be achieved through big increases in high value areas such as salmon farming. Inshore water space is limited and contested so farms in open water are becoming the focus.

Green lipped mussels are the biggest aquaculture money spinner, previously largely reliant on spat from offshore reefs washed up on Ninety Mile Beach. The risk of that reliance has been greatly reduced by the development of a spat hatchery in Nelson.

There are other imaginative projects afoot such as pāua farming in Bluff in an aquaculture park development that is driven by visionaries and expansion of kingfish farming in Northland.

Internationally, the London-based Marine Stewardship Council, which advocates and monitors best practice fisheries globally, has certified the bulk of New Zealand's deepwater species – including hoki, ling, orange roughy, hake, squid, southern blue whiting and tuna – as well managed and sustainably caught.



New Zealand's largest aquaculture earner, Greenshell mussels.

The most striking turnaround has been in orange roughy, once the poster child of overfishing, that has recovered from the brink of collapse to a \$60 million fishery today.

This mysterious, slow growing fish living in vast numbers in the dark a kilometre deep was absolutely plundered in the 1980s. It's an extraordinary story of greed and loss to recovery and redemption. It will never be what it was but it is now conservatively managed to the point where only an estimated five in every 100 fish are taken, well within sustainability limits and the population is slowly rebuilding.

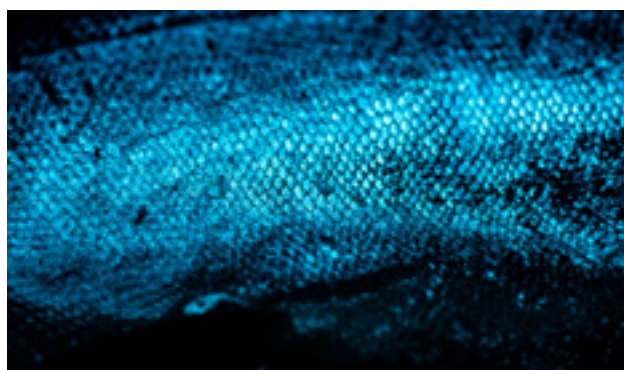
There are 642 stocks in the QMS and according to Fisheries New Zealand's annual stock assessments, 90.9 of landed fish are from sustainable stocks and those that aren't are under management regimes.

Despite all these advances there does remain a public disconnect. I imagine if I polled this group, or stopped people at random pretty much anywhere, a good proportion would be worried that our stocks are being overfished, even to the point of collapse.

This ignores both the scientific assessments that prove otherwise and the fact that among the biggest conservationists are the fishermen themselves. They have a huge vested interest in a healthy fishery. It's their livelihoods at stake.

A good example of that is in the hoki fishery, our biggest and most valuable wild fishery. In recent years the annual catch has been around 150,000 tonnes. A couple of years ago, the skippers were concerned that in one fishery there was a preponderance of juvenile fish. That led the quota holders to voluntarily cut the quota by 30,000 tonnes as a conservation measure and they advised the Ministry for Primary Industries accordingly. That was a significant financial hit and gives the lie to the claim that all the fishing companies care about is maximizing the catch at all costs, a claim I saw repeated in the main recreational fishing magazine's editorial just a couple of months ago. And Greenpeace predictably claimed this was evidence the fishery had collapsed. It was nothing of the sort, it was responsible pro-active self-management of an important fishery.

This understanding, or more likely misunderstanding,



Hoki skins have been transformed from waste into innovative products, such as anti-wrinkle masks and burn dressings.



Amaltal Apollo amid West Coast hoki season. Image; Tamzin Henderson.

of the state of our fisheries was addressed by the newly appointed Oceans and Fisheries Minister David Parker in an interview I had with him for the cover story of the February edition of Seafood NZ magazine.

In a memorable quote, he said he could swing Tarzan-like on a vine down Queen Street claiming the healthy state of our sustainable fisheries and still not be believed. In that vein the country's chief scientist, Prof Juliet Gerrard, was commissioned as an independent third party to assess fisheries data and that report is now with the Minister.

The industry is increasingly aware of the importance of a social contract with the New Zealand public. After all, the public own the fish. The industry has a right to catch a certain amount of them but that comes with responsibilities.

That led to the launch of a Promise campaign several years ago where where fishers signed up to a Code of Conduct. It also highlighted the importance of the industry to the country and that these were good people doing their best

It is a shared fishery, with recreational and customary, and there has been conflict at times. That has led to initiatives like The Box in Hawke's Bay, where commercial fishers have agreed not to work in a large area in the Bay over the summer, reserving it for reccies.

Here on your doorstep, commercial fishers have withdrawn from the inner Gulf. The biggest pressure on the snapper fishery is from the huge number of recreational fishers, whose catch is now estimated to be bigger than that of the commercial sector. I'm a keen fisher and have fished the harbour and the Gulf when visiting and always caught snapper. It's an incredibly productive fishery, amazingly so, but it is at risk because the recreational effort is unfettered, other than a daily catch and size limit. Whenever you raise this, the likes of LegaSea get very agitated and say "oh, it's our God given right to catch a feed for our families" as if their lives depend on it. My answer to that is, if they

are so concerned about the state of the snapper fishery in particular, they should support proper management of it. That doesn't mean licences but it does mean recording everything that is caught and taking sustainability measures accordingly.

There is no denying that commercial fishing, just like farming, has an impact on the environment, which can be negative. It is beholden on all those in the sector to do their utmost to reduce that footprint and conserve the resource.

We are increasingly seeing more selective methods such as longlining, with fish caught to order.

You will see this reflected on up market restaurant menus where the fish of the day is rated as "sustainable" to reassure diners who might be feeling some guilt at eating supposedly endangered species. In fact, the label is redundant – all New Zealand fish is sustainably caught or harvested.

New Zealand seafood is sold all around the world, to 100 markets, but the big three are Australia, the US and China and of those China is by far the biggest and most critical. Almost all our lucrative rock lobster is exported there live.

That brings obvious risks and as the Aussies have found out, fall out with an increasingly expansionist and nationalistic China and they will punish you in all sorts of ways and none too subtly either. That brings obvious risks for a small trading nation like ours. We therefore need to take great care in our international relations.

And it is not easy dealing with a country that marginalizes a significant section of its populace; that arbitrarily arrests and detains people without trial; imprisons them in harsh isolation; deports citizens on mere suspicion of wrongdoing; that reacts to any criticism with aggression and abuse; is blind to reason and has little concept of diplomacy.

I refer, of course, to Australia.

Seafood topped the \$2 billion annual export mark in 2019 for the first time, making it the country's sixth biggest export sector behind dairy, sheep and beef, forestry and horticulture, but ahead of wine. In the Statistics Department/ Ministry for Primary Industries' latest economic outlook, seafood earned \$1.8 billion in calendar year 2020, which given all the challenges, not least constricted air freight for a perishable product, is still a pretty good result.

And that maintains around 25,000 jobs and a vital part of regional economies in particular. Nelson, where Sealord and Talley's fleets and processing are based, is Australasia's biggest fishing port, and communities throughout the country – from Bluff to Port Chalmers and Timaru, Greymouth and Westport on the west coast, Napier and Gisborne on the east and tiny settlements like Mangonui in Northland all rely on the bounty from the sea.

The takeout is that New Zealand does have a well-managed sustainable fishery – we ain't going to run out of fish – and we are on the verge of exciting new developments in the aquaculture sector that bode well for our international reputation and our prosperity.

It's an incredibly diverse sector filled with good people doing often dangerous, uncomfortable hard work and it doesn't get anywhere near the credit it deserves.

Supporting young stars

The North Harbour Club and Charitable Trust hosts Business Excellence Network breakfasts to support young people in arts, innovation, music, education, sport and service to community (AIMES).

Past winners have included Lydia Ko, Lorde, Jacko Gill, Eliza McCartney, Tom Ashley, Cameron Calkoen, Tom Abercrombie, Moses MacKay, Melanie Bracewell, Molly Meech and Alex Maloney.

The trust was founded by Ross Finlayson, a former senior executive of Amalgamated Marketing. Seafood industry veteran Gary Monk is a life member.

Tim Pankhurst was guest speaker at the BEN breakfast on the North Shore on March 29.

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A local winner at Waiheke

Tim Pankhurst



Snapper and chips, a beer and a sensational view.

Waiheke Island's The Local boasts it "offers the best fish and chips in New Zealand".

There is no denying they are top rate, but as to the best? That is open to debate.

It is a high bar and some of the other fish and chip shops throughout the country profiled in this regular column – King's Fish Market in Invercargill, the famous Mangonui Fish Shop in Northland, Mapua's The Smokehouse, The Sands at Nelson's Tahunanui Beach and Mr Grumpy's in Foxton – are exceptional too.

What would be hard to dispute is The Local has the most sensational view.

Its expansive deck overlooks Oneroa Bay, where literally hundreds of yachts and launches enjoying Auckland's Hauraki Gulf playground come to shelter overnight.

It is not unusual for the picturesque bay to have only one or two boats anchored during the week and 3-400 at the weekend.

That makes for hectic times for The Local as many come ashore for a feed of fish and chips, serving as many

as 5-600 meals in a day.

During the America's Cup, a member of the American Magic team based on the island collected a \$300 order of fish and chips.

But in the winter the crowds are gone and owners and partners Simon Pope and Sara Stevenson close up and this year they are in a campervan driving to Bluff, exploring the South Island.

"Summer and winter is the difference between black and white," Pope says.

The Covid pandemic has had a big impact too on a tourist island that is also home to 8000 permanent residents at its peak.

"Revenue is well down. It used to be 20 percent came from Waiheke, 50 percent from Auckland and 30 percent international. It's still the same from Waiheke and Auckland but now the balance is from the rest of the country."

The couple took over the business in 2014, when it was struggling.

Pope has a background in Auckland hospitality – at



The Local owners Sara Stevenson and Simon Pope.

the Occidental Hotel in Vulcan Lane and as manager of Soul Bar in the Viaduct for six years.

Stevenson is a registered nurse and set up the Skin Institute, a cosmetic and melanoma facility, on Waiheke.

The couple are savvy marketers and came up with the concept of takeaways to eat in,

capitalising on an 85-seat restaurant with a liquor licence – promoting a cold beer with fish and chips or a burger – and the amazing view.

They roofed and extended the deck and installed a DJ at weekends, set up a lively website and online sales.

Steve Gillet, ex Stonyridge Vineyard, has been installed as chef.

The emphasis is more on dine in restaurant meals but fish and chips and burgers are still prominent.

Snapper, befitting its dominance in Auckland waters, is the go-to fish, with hoki as a cheaper option.

Sanford are the suppliers and the relationship is strong.

The batter is Tiger beer and flour, the potatoes are Makikihi from Waimate in South Canterbury, where the bulk of New Zealand's spuds are grown, cooked in beef tallow.

It may not be the best fish and chips in the country but it must be pretty darned close.

The Local is reached by narrow steps, just off Waiheke's bustling, trendy main street at Oneroa, filled with galleries,

clothing boutiques, upmarket wine, celebrated restaurants and, on this Saturday morning, a busker playing the meanest blues at frantic speed.

The character of the island has changed markedly, from an alternative, laid back escape from the rat race to rapid development and intense competition for property and associated astronomical prices.

A printing inks business owner recently sold a property above the ferry terminal for \$25 million.

Building has begun on a controversial 180-berth marina at Kennedy point, adjacent to the terminal and breakwater.

"It is semi-unaffordable here now but it's a fact of life," Pope says.

"Things change. We used to send smoke signals, now we send emails."

One aspect that is not changing is the sustainability of seafood.

Several years ago, Seafood NZ developed its Promise campaign highlighting the contribution the seafood sector makes to the economy, healthy food and our way of life and to fishing responsibly and with respect for the marine environment.

Videos were developed and shown on primetime television and websites as part of that campaign.

The Local asked to show them too and introduced its customers to the Quota Management System (QMS), the extent of different species and the conservation of fish stocks.

"People ask why is snapper more expensive than hoki?," Pope says.

"That led us down the path of the QMS and the various fish stocks.

"If we can educate people on that and give them something to look at, we are certainly keen to support that," Pope says.



Step down from Oneroa's bustling village to a dining treat.



The Local's seared tuna salad.

Bream Bay kingfish farm to have dramatic expansion



Farmed kingfish grown to harvest in 12 months.

Piggy Muldoon's Think Big energy projects of the 70s and 80s were largely expensive failures but one is delivering in an unexpected way. TIM PANKHURST reports:

The Marsden B power station in Northland, oil fired and designed to deliver 250MW, was never commissioned and was mothballed in 1978 without producing so much as a light bulb flicker.

But its large offshore seawater intakes, 2.4m pipes marked by orange buoys several hundred metres off the Ruakaka beach and associated piping infrastructure, are essential to the farming of kingfish at the National Institute of Water and Atmospheric Research aquaculture base at Bream Bay.

Marsden B, adjacent to the Marsden Point oil refinery

with its fiery orange gas chimney flare, was dismantled and shipped to India in 2012 and the site levelled.

But its unseen pipes continue to bring in fresh seawater, albeit at a fraction of the huge volumes proposed to cool the proposed power plant, to the fish farm that is about to undergo dramatic expansion.

In addition to all the research, NIWA's Ruakaka facility also currently produces 30 tonnes of kingfish a year and has done so for several years.

The fish are sold direct to Leigh Fisheries, which was acquired by Foodstuffs, the country's largest grocery distributor in 2019, operators of the New World, Pak'nSave and Four Square chains.

But the kingfish do not feature in the budget Pak'nSave's ice-filled fish bins, they are a premium product aimed at the top end of the restaurant trade.

Demand exceeds supply, to the extent kingfish is imported from Australia and Japan to meet shortfalls in the local market.

That is about to change with the Bream Bay facility gearing up to expand production 20-fold, to 600 tonnes annually, and beyond that to as much as 3000 tonnes.

A \$6 million funding commitment has been secured from the Northland Regional Council and the balance of the approximately \$12 million project will be funded by NIWA.

The expansion is based on a land-based recirculating aquaculture system (RAS) centred on eight large circular tanks on the 8-ha site, which is also home to Moana NZ's blue pāua farm.

The technology is proven, according to marine biologist and regional manager Ken Becker, it is more a matter of scale.

**"On the horizon are opportunities to incorporate other raw materials such as single-cell proteins and omega-3 lipids grown in reactors."
– Steve Pether**

"We must be careful about the application," he says. "You mustn't lose sight of what is commercially viable. We are at the point where we can make a profit but only if it is done at scale. Scale is critical."

He says the RAS was developed in the 1980s, first applied to salmon farming in Canada, and has been applied across the world.

"What has happened since then is that the systems have got much more efficient and the value of the finished product has gone up.

"It's very suitable for our fish, the kingfish.

"We are trying to produce at a scale to determine its commercial viability. This is applied science. Not discovery science. That's our expertise."

The site has another advantage in that no water heating is required. The fish grow in relation to temperature, with around 26 degrees C being ideal. The summer seawater temperature is 23°C and the pump energy and the metabolic process of waste products being consumed by bacteria generate heat.

In Australia, kingfish are farmed in sea cages in South Australia's Spencer Gulf by the publicly listed company Clean Seas Seafood Ltd, which produces about 3000 tonnes annually.

At Bream Bay, site manager Steve Pether keeps a close eye on his babies.

"They are always hungry," he says. "They will eat about twice what they need."

The challenge is to fine tune the feeding regime so that there is no waste while the fish have optimum growth.

They are cannibals in the early growth phase until

reaching around five grams after 50 days.

They begin feeding three days after hatching and will eat only live prey.

That is provided in the form of tiny rotifer plankton, then Artemia shrimp (commonly called sea monkeys), that is grown en masse on the site.

"In the wild they would eat all sorts of zooplankton," Pether says. "We offer two types, fill them with food supplement and they still get a complete diet."

At 20 days the fast growing fish are transferred to full pellet feeding.

The feed is imported from Europe and is automatically dispersed on a timer.

The pellets contain about 20 percent marine product, mainly fish meal and oil, but there is increasing focus on plant products.

"Kingfish don't use carbohydrates, they use oil for energy," Pether says.

"We can satisfy their energy needs with oils such as canola and sunflower as long as the essential components are included.

"On the horizon are opportunities to incorporate other raw materials such as single-cell proteins and omega-3 lipids grown in reactors."

The whole of production conversion ratio of feed to fish weight is an ideal 1:1 or less but is currently around 1.5:1.

The fish are harvested after one year (from egg) when they have reached 3kg.

Around 500kg are harvested on a Tuesday, killed instantly with iki spiking in the brain, bled and placed on ice, transferred on Wednesday mornings to Leigh for processing and distributed to retailers within 24 hours.

"Within 48 hours of being dispatched, they are on the plate," Pether says.

The farm cannot satisfy demand and there is definitely



Site manager Steve Pether (left), regional manager Ken Becker and chief scientist, aquaculture and biotechnology, Dr Andrew Forsythe with freshly harvested farmed kingfish.



Large hapuku brooding stock also held at Bream Bay.



Chief scientist Dr Andrew Forsythe watches over juvenile kingfish at NIWA's Bream Bay aquaculture facility.

room in the market for 600 tonnes initially, according to Ken Becker.

"Salmon is our model, with the opportunity for kingfish to follow that pattern," he says.

"The average annual chinook salmon production in New Zealand is about 12,000 tonnes, about half of which is consumed domestically, and we also import the cheaper Atlantic salmon."

The Bream Bay aquaculture centre is also trialing the farming of hapuku/groper.

It has large broodstock, with heads like huge eels, that are so accustomed to feeding, they come towards anyone leaning over the tank and splash mightily when pellets are cast in.

The advice is not to put your hand in the water if you value your fingers.

Hapuku field trials were conducted at NIWA's Mahanga Bay facility on Wellington's Miramar peninsula but that is now closed and research centred at Bream Bay, the country's largest marine research facility.

"They are very similar to salmon, but the temperature preferences allow hapuku to be farmed in sites that are getting too warm for salmon."

Hapuku are not as fast growing as kingfish, but can reach their first market window of one kilogram from egg in one year and four kilograms in two.

"We could embark on commercial scale trials within two years," chief scientist, aquaculture and biotechnology, Dr Andrew Forsythe says.

"New Zealand is the only country to manage to close their life cycle.

"There is so much exciting stuff going on.

"We also have to show the animals are well cared for, the footprint on the environment is minimal and production is sustainable."

"The risk appetite in New Zealand is perhaps less than in offshore investors. There could be huge opportunities but there are also risks."

– Dr Andrew Forsythe

How circular can we make this process, he asks?

That thinking includes capturing nutrients to grow high value seaweed that in turn can be fed to livestock to reduce methane emissions, a prime driver of global warming.

NIWA is a Crown Research Institute that operates as a standalone company, drawing its revenue from contestable research funding and commercial consultancy work.

As such, it is not in the business of commercial fish farming but would look to provide ongoing research support and will be seeking corporate partners.

"I want the opportunity to be taken up by New Zealanders," Forsythe, a Canadian with a strong commercial salmon farming background, says.

"The risk appetite in New Zealand is perhaps less than in offshore investors. There could be huge opportunities but there are also risks."

Northland iwi found that to their cost with the failed kingfish farming venture at Paua on the Parengarenga Harbour 25km south of Cape Reinga that collapsed in 2006 after two years amidst acrimony and debts of \$7.6 million.

The fingerlings for that venture – 30,000 initially – were sourced from NIWA's Bream Bay stock, with the aim of producing 320 tonnes a year.

Former Regional Economic Development Minister Shane Jones said in March last year, land-based kingfish production had come a long way since his iwi's failed attempt at Parengarenga.

He saw the proposed Bream Bay expansion as providing huge aquaculture potential for the region.

He said it could become a model for others in Northland and across New Zealand to set up similar ventures, including areas such as the Kaipara where he launched a local primary industry kickstart programme, termed Kaipara Kai.

Upmarket restaurants like Tokyo Bay on the Takapuna beachfront on Auckland's North Shore are among those hoping expansion does proceed.

They value Ruakaka kingfish highly, even though it is expensive, and cannot always meet demand, at times having to serve imported product.

NIWA's vision is that Ruakaka kingfish "will be a high quality healthy food that is sold in premium markets because of its exquisite taste, provenance and environmental credentials".

That has been realised. It is now time for the next stage.



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Making tikanga Maori more evident in fishing practices

Charlotte Panton



Sunrise fishing in Russel. Image; Grace Caadiang.

The Sustainable Seas National Science Challenge is backing traditional Maori fishing practice.

When European settlers first arrived in Aotearoa, Maori embraced the opportunity to expand their commercial fishing trade and commerce, quickly establishing themselves as industry leaders.

"They were skilled fishermen, entrepreneurs and extremely good at trade and commerce as a means to provide for their whanau and hapu," says Maru Samuels, Tumukaki Rangatira CE of Iwi Collective Partnership and Director, Te Ohu Kaimoana. "There is ample evidence of their achievements recorded in Hansard parliamentary reports and even the diaries of James Cook – fishing with 900-metre long nets in 1769 and 1792 waka supplying fish to the burgeoning city of Auckland in 1852 being just two examples."

In the mid 1800s, things began to change. The expansion of European settlement created appetite for a greater share of the marine resources as well as land, and so to break the dominance of Maori commerce, new

fisheries and marine laws were enacted that stripped Maori of their fishing rights. As well as destroying their livelihoods, the new Government policy severed for Maori their means to venture out to sea to practice and maintain a fishing way of life that had been passed down unbroken from generation to generation.

Today, the Fisheries Treaty Settlement has recognised to an extent those Maori commercial fishing rights and interests by allocating fisheries assets and quota to 58 iwi organisations nationally. Since passage of the Maori Fisheries Act 2004, many of the people representing iwi Maori fisheries have focused their part-time energies on relearning and educating themselves about the many environmental, social, economic, and cultural complexities of the New Zealand fishing industry.

"A bunch of those iwi decided in 2010 they would do better if they took on this challenge together, and so the Iwi Collective Partnership (ICP) was formed," Samuels says.

ICP is a collaboration of 19 like-minded iwi who believe



Maru Samuels is Tumuaiki Rangatira chief executive of Iwi Collective Partnership and director, Te Ohu Kaimoana.



Irene Kereama-Royal is Māori research Partner, Kairangahau Māori, Ngā Wai A Te Tūi Māori & Indigenous Research Centre, Unitec.

that working together toward a common vision, based on shared Maori values, achieves better outcomes than working alone. Now with 10 years of operational learnings, the ICP is ready to move into a new phase to make their collective tikanga – Maori values, principles, practices and beliefs – more evident in their business, and in the way they exercise their collective fishing rights and interests.

The Sustainable Seas National Science Challenge has funded *Kia tika te hi ika: Exploring fisheries tikanga and matauranga*, a two-year research project that will assist the ICP with the first step being to explore fishing tikanga amongst its iwi members.

“Why do some of us have a passion and feel responsible to transfer eel elvers up dams? What is our tikanga with respect to the seabed and the impacts of trawling, versus farming and gardening on dry land? These are just some of the many questions that will be explored through the research,” Samuels says.

“Eventually we will create an innovative framework that fuses tikanga with the best of New Zealand fisheries science and management. The intention is to share that framework not only with all 58 iwi, but with industry.”

Samuels (in his capacity as Tumuaiki Rangatira CE at ICP) and Irene Kereama-Royal (Ngā Wai A Te Tui Maori & Indigenous Research Centre) are co-leading this rangahau (research), which began earlier this year.

“This project has the potential to check in with the legacy of traditional fisheries values and the aspirations of commercial fisheries management and practices in the future,” Kereama-Royal says.

As well as bringing cultural integrity to their business, Samuels believes there is economic potential in a global brand proposition that is built on indigenous Maori tikanga and practice.

“I can’t give away too much about the commercial application, but we feel confident that there will be something worth commercialising later down the track; and those benefits could potentially be available to everyone.”

In addition, the tikanga insights gained through this project and other Sustainable Seas research could also support benefits beyond fisheries management. For example, the *Whakaika te Moana* project is investigating traditional hapu aquaculture practices.

“The potential impact of our research shouldn’t be underestimated,” Kereama-Royal says. “A fisheries management approach that merges both tikanga and western practices has never been attempted before. The benefits are uniquely Aotearoa – and world-leading.”

Learn more: www.sustainableseaschallenge.co.nz/kia-tika-te-hi-ika

Sustainable Seas is a 10-year research programme with the vision that New Zealand has healthy marine ecosystems that provide value for all New Zealanders. It has funded more than 60 interdisciplinary research projects that bring together around 250 ecologists, biophysical scientists, social scientists, economists, and matauranga Maori and policy experts from across New Zealand. It is funded by MBIE and hosted by NIWA.

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FirstMate New Zealand: supporting our seafood whanau launched

Marie Fitzpatrick

Last year, the Government announced funding of \$4.6m, over three years, to enable Fisheries New Zealand to support the establishment of a national seafood sector support Network in response to the impacts of Covid-19. Like the Rural Support Trusts in the farming sector, the Network will provide a clear avenue for delivery of seafood-specific support.

It was clear from the outset that it stands the greatest chance of achieving positive outcomes by being sector-led from as early as possible. To achieve this, a multi-stakeholder working group was established in September 2020 and since then sector representatives have continued to work with Fisheries New Zealand to establish the Network.

The newly established network has already reached two significant milestones.

Firstly, was officially establishing the Network as a Charitable Trust on 31 March and appointing a board of five trustees to oversee development of a fit-for-purpose structure and service delivery model. The trustees bring a diverse set of skills and experience from across the sector, which will prove invaluable during this next phase.

Network Trustee Amy Moore was born and raised in a Greymouth-based inshore fishing family, with both parents involved in the industry. Amy works as a consultant across the primary industries and is currently working with several industry groups and regional councils to promote commercial fishing as an employment of choice. "I'm really passionate about ensuring that we are recruiting and retaining talented young people for the future of our sector," she says.

Other trustees span owner-operators (Geoff Donley, general manager, Aramoana Seafoods Ltd), sector representation (Kate Hesson, executive officer, Otago Rock Lobster Industry Council), fisheries and aquaculture law (Justine Inns, partner, Ocean Law) and inshore fishers (Doug Saunders-Loder, president, NZ Federation of Commercial Fishermen).

The second milestone recognises the importance of having a name that the sector can relate to, so the trustees have chosen *FirstMate New Zealand* as the working title of

the Network and they were excited to launch the network at the Federation of Commercial Fishermen's conference in Dunedin last week.

Network Trustee, Doug Saunders-Loder says they spent a lot of time considering the name. "We believe that FirstMate reflects our goal to offer hardworking people across our seafood sector the support they need to address the pressures and complexities that come with the job."

Importantly, FirstMate won't duplicate the work of existing bodies and networks but will create easily accessible connections to the support needed by fishers and aquaculture farmers, and their whanau. This could include training, mentorship, community events, counselling, financial and business advice and help with accessing innovation advice and grants.

FirstMate will operate ground-up at a regional level, via a number of regional advisers who will connect those seeking support to the appropriate services.

The Network will increase the scale and reach of support to individuals, whanau and firms who are dependent on the revenue of the seafood sector and help build adaptability and resilience against future challenges.

"The success of FirstMate will depend heavily on us finding the right people to be involved at a local level," says Network Trustee, Geoff Donley. "We'll be sending out more information on what the role will entail shortly, but anyone who is interested in the meantime can get in touch through the website."

www.firstmate.org.nz

Marie Fitzpatrick is the principal advisor strategic engagement for Fisheries New Zealand.



Conference, catches, communications and fraternity feature at Port Chalmers

Doug Saunders-Loder



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

We have come a long way in 12 months and have to be happier that since June last year we have eased out of Covid-19 lockdown, started receiving the vaccination and also seen the travel bubbles extended to Australia and the Cook Islands.

This certainly instils some positivity but we are far from over this pandemic and will probably just get better at managing it as opposed to seeing ourselves rid of it.

The industry has, across the board, had the luxury of working throughout the Covid-lockdown but the impacts of closed markets, reduced and costly freight options and uncertainty in terms of how long this would go on, has affected us all.

I applaud everyone for having gone about business no matter how hard, and continued to see this industry operate as 'essential service' through one of the most

challenging times the world has experienced since World War Two. It is a testament to you all that you show such tenacity and community spirit during such times.

Covid impacted on Federation directly, to the extent that we had to cancel our annual conference last June and I cannot remember a year without it. The conference is always a great time for fishermen and partners, officials, LFR representatives and Industry suppliers from around the country to gather at a provincial port and to be hosted by the local fishermen's association. They enjoy both an informative update and some wonderful social events and attend the annual general meeting.

At the time you read this many of you will have enjoyed our conference held over the last few days in Dunedin and hosted by the Port Chalmers Fishermen's Association, so I take this opportunity of thanking Carol Scott, Mell Waiari, Karen Olver, her team from Seafood NZ and the executive for delivering once more, an outstanding annual event. Of course, Port Chalmers Association also gets a special mention in that respect. Liaison throughout the year all goes towards delivering a memorable occasion.

We have a new Minister for Oceans and Fisheries, the right honourable David Parker who could not be there on the day but showed his commitment by beaming in electronically. He has proven to be a minister that



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FROM THE FEDERATION

has a balanced view and seems happy to support the industry when needed, as long as we muscle up and are seen to be doing the right thing. He respects the economic value the industry brings but does not want to be compromised because of our poor performance. He acknowledged many of the pressures brought to bear by Covid-19 and also by the implementation of necessary government reform and with that announced a health and wellbeing package of \$4.6m over three years. Both government and industry have collaboratively taken this opportunity and formed a trust to administer this funding. The board of trustees appointed have developed a support network aptly named 'FirstMate' and will be communicating with the wider industry to determine the best use of this money. The Minister proudly announced this and Fisheries NZ took the opportunity of launching the concept in a separate presentation.

Other items included a Fisheries Inshore NZ update from chair Laws Lawson, an update from Darren Guard as to how MarineSAFE is tracking, innovation in research covered by NIWA and the Moana Project, latest from Maritime NZ and also an important presentation from Lesley Hamilton and her SNZ communications team on how to use our website and social media to good effect.

Federation has re-branded over the past 18 months and with that revamped our website. It is important for members to understand and use this usefully but also understand the impacts of social media when not used properly.

The Shipwreck Auction was held on the Thursday night of conference and once more the fishermen showed their generosity. Of course, this auction is only successful because of the kind and generous support given by all of those industry suppliers, fishermen and LFRs that donate so willingly. Great commitment shown by all for a great cause.

With all the fun and frivolity over for another year it's noses back to the grindstone. We have Hector's dolphins on the SE Coast, SE Marine Forum and other potential area closures around the country, regional council reform and engagement on fisheries matters, bottom-trawling, ecological areas and habitats of significance as well as cameras on inshore boats that will all challenge us this year.

The time is right to consider your representation and as we prepare to renew our memberships this month, take the time to contact your local federation rep/member/association and make sure that you are on the boat.

Good fishing everyone and best of luck for the rest of the year.



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InZone careers bus putting the spotlight on seafood

Careers in the seafood industry are getting great exposure around New Zealand schools, with a seafood component added to the career options.

The InZone careers coach highlights jobs in primary industries and travels around secondary schools.

Last year they had over 64,000 students through the Careers Coach. There are also 16 stand-alone kiosks located around the country in school libraries, public libraries and youth centres. Last year these averaged 7100 video views on each kiosk.

When students enter the coach, they log in using their mobile phone. They sit at a kiosk and watch whichever videos they want. If they want to find out more about a

role or video, they can indicate that they are interested and then they are automatically sent a link to the relevant website via text.

InZone are also in discussions with the Ministry of Social Development to start taking the Careers Coach to public events as a way of attracting the general public to the primary sector.

Seafood New Zealand has supplied video and images to educate school leavers about the great career options available in the industry and the recent visit to the Christchurch Careers Expo attracted 5000 young people.

Every 30 minutes, an entire class will come through the bus to look at career options in the primary sector.



The InZone careers coach.



Students learning about working in the seafood industry.



Whole classes of students go through the coach every 30 minutes.

Savouring cod at Stewart Island's Kai Kart

Lesley Hamilton



On a busy day, Sue Graham and her band of part-timers serve up 20 kgs of blue cod from their Kai Kart caravan during high season.

Some 170 orders for blue cod and chips or the insanely popular blue cod burger would come in daily, and that would feed 250 people on an island where the population is only 408.

Sue Graham and her fisherman husband, Aaron Connor have lived on Stewart Island most of their lives and owned the Kai Kart for three seasons, however any chance of actually closing and having a rest in the winter months has been wishful thinking with the current boom of domestic visitors. They have had their best season.

Sue is grateful for the support of locals during lockdown when visitors dried up. She says they are always supportive but were invaluable in those times. Before Covid, she was contemplating an expansion into a sit-down restaurant but says she has reassessed and is happy with the Kai Kart into the future.

The blue cod burger, featured as this month's recipe, is the most popular item on the menu.



The Kai Kart's specialty: locally caught blue cod and crispy chips.

Battered blue cod burgers



Makes 10 – 12 burgers

Ingredients

500mL water
2 cups self-raising flour
15mL (1 tbsp) malt vinegar
0.3g baking powder
0.3g turmeric
Pinch of salt
1.25kg blue cod
Neutral flavoured oil,
(canola or vegetable)

For the burgers
10-12 hamburger buns
3-4 tomatoes, freshly
sliced
10-12 cheese slices of your

choice
2 red onions, peeled and
thinly sliced
1 large lettuce, outer
leaves washed and
removed
Tartare sauce
Aioli
Salt and pepper, to taste

Method

Cut the blue cod into
small to medium bite-
sized pieces.
Add at least 5cm of
oil to a large saucepan

or fryer. Heat until it
reaches 180°C.

While the oil is
heating, thoroughly mix
the batter ingredients
together.

Dust the fish in flour,
shaking off any excess.

Carefully lower the
fillets into the oil,
dragging backwards
and forwards for a few
seconds to seal the
batter, then let go.

Cook the fish until
golden, approximately
five minutes.

Using a slotted spoon,
carefully lift the fish out
of the oil and drain on
paper towels.

To assemble the
burgers, toast the inside
of each hamburger bun
under a grill.

Smear tartare on the
bottom bun, add cheese,
onion, battered blue cod
(approx. three pieces),
lettuce and tomato, then
smear the inside top of
the bun with aioli.

Season with salt and
pepper to taste.

Cross-sector collaboration strengthening our primary sector

There has never been a better time for collaborating with other primary industries. Sustainability, climate change, employment and trust and reputation are just some of the challenges we collectively face.

Nine young people from across New Zealand's primary sectors came together in late May at Mataatua Marae in Whakatane at the official launch of He Tatai Rangahua – the Food and Fibre Youth Network.

Sixty-one applications from across the country were received – the quality of those applicants reflected by the steering committee, run by the Ministry for Primary Industries, who chose two more representatives for the network than the seven they originally sought.

Representing the seafood sector is Amy Moore, whose family own North Beach Fishing in Greymouth. Moore

is a remarkable young woman who has already been instrumental in beginning a seafood academy with all high schools on the South Island's West Coast and working with the Federation of Commercial Fishermen to make a series of mini documentaries to entice more young people into the industry.

She is excited about the opportunities to collaborate on a unified approach to the challenges across all the Food and Fibre sectors and says the synergy that the nine councillors had as a group in such a short time was very positive.

"All of the young people from across a range of sectors were all very passionate about creating lasting change now and into the future," Moore says. "This is an exciting opportunity to share a lot more of the positive side of the seafood sector."

Fresh faces join the seafood sector

Fisheries Inshore and Seafood NZ welcomed two new faces to their teams this April.

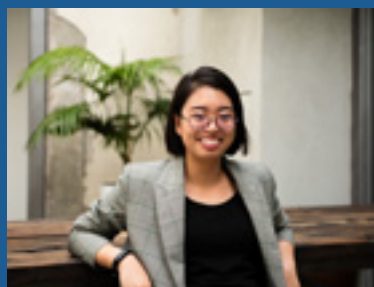
Amelia Tan, newly appointed policy analyst, has joined Seafood New Zealand after graduating from University of Auckland where she largely focussed on the intersection between foreign policy and culture.

Tan also worked as a strategy analyst for several charitable organisations.

Her interest in environmental and economic intergenerational equity makes her well suited to the new role, she says.

"I'm looking forward to tackling policy challenges in the international trade, fisheries and sustainability space at Seafood New Zealand.

New Fisheries Inshore staffer Rosa Edwards has assumed the role of fisheries manager.



Amelia Tan is Seafood New Zealand's newly appointed policy analyst.

A Nelsonian, Edwards says the ocean has always been an integral part of her life, spending much of her time fishing, diving, surfing



New FINZ staffer Rosa Edwards sailing back from Mayor Island to Mount Maunganui.

and sailing in the Marlborough Sounds.

Edwards developed an interest in Canadian coastal fisheries, later volunteering to work at the Australian Institute of Marine Science during her 18 months abroad.

She completed a Masters of Marine Science at the

University of Otago upon her return, quantifying habitat use of broadnose sevengill sharks using baited remote underwater videos as part of her thesis.

Edwards says her research was an invaluable first step towards joining the industry.

"That research gave me hands on experience out on the water, meeting fishers and other marine users in southern New Zealand.

"I'm looking forward to working collaboratively across the seafood industry, with a particular focus on sustainable management and bycatch mitigation within our inshore finfish fisheries."

Bluff Oyster and Food Festival returns



Ricci Grant and Vic Pearsey competed in the oyster opening competition at the 2021 Bluff Oyster and Food Festival. Grant won by a narrow 15s. Image; Robyn Edie, Stuff.

Despite a one-year hiatus brought about by Covid-19, the Bluff Oyster and Food Festival was back in force for 2021, with tickets selling out within the hour.

As the 4500 strong-crowd descended on Bluff

on May 22, queues formed for the sumptuous lineup of seafood including rock lobster, pāua, scallops, whitebait, salmon, blue cod and of course, the famed Bluff oyster.

A week of bad weather put oystermen's nerves under pressure. Barnes Wild Bluff Oysters manager Graeme Wright was relieved when his harvesters managed to collect just over 2500 oysters to please customers at the event.

Sea Urchin New Zealand made a debut appearance at the festival, with owner Peter Herbert (Herb) and his crew offering prized New Zealand kina at their stall.

Finest Kind director Donna Wells said it was another successful year of festivities.


"Lorraine Bowen did an excellent job in her role as festival co-ordinator for the first time," says Wells."

Wells and her team won second place for the Best Stall, serving up Nelson seafood products and delicious Whangamata scallops to festival-goers over the course of the day.

The most popular attraction of the day was the oyster shucking competitions, with Bluff woman Vic Pearsey taking out her tenth title in the women's division – opening 50 oysters in two minutes, 59.42 seconds.


Pearsey and Ricci Grant faced off in the final opening event, Grant beating Pearsey by a slim 15 second window.

The 13th Bluff Oyster & Food Festival is scheduled for 21 May, 2022



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#1

JANGLE JIM ALWAYS MADE SURE THAT HIS CREW GOT SLEEP, BUT 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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GUR1, GUR8	SPD1, SPD3, SPD4, SPD5, SPD7
HPB1, HPB2, HPB5, HPB7, HPB8	SPE3
HOR3, HOR7	SPO1
JDO1, JDO3	SPR1
KAH8	SQU1J, SQU1T, SQU6T
LIN2, LIN3, LIN4, LIN6	SSK1
OE01	TRE7
PAD1, PAD2, PAD5, PAD7, PAD8, PAD9	WWA3, WWA4, WWA5B
PAR1, PAR9	YEM9
POR3	

QUOTA SHARES FOR SALE

BNS2, LIN2, PAD2, PAD7,
PAD8, SCH2, TRU2, SPE2

QUOTA SHARES WANTED TO PURCHASE

BCO4, BCO5,	PAU3, PAU5B
BNS3	PHC1
GLM9	SCH3
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HPB3	SPE3
KAH1	SPO3, SPO7
LIN5, LIN7	TRU3, TRU5

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5254 DANIELLE BOTTOM & SURFACE LINER

LOA 18.95m x B5.6m x D2.9m
Main - MAN D2566 MTE6 250hp
Aux - Isuzu. Genset 60kVA
Fuel 10,000 litres. Water 2,000 litres
Ice hold 27 tonnes. Bottom & surface line gear.
4 berths. Galley. Air conditioning
Good electronics
Survey Offshore 100 miles Expiry 10/2/2025

WELL PRICED AT \$295,000



5232 LONG LINER or
TROLLER. BFG Autoline
L19m x B 6.4m x D 2.75m
30t hold. Cummins KT19
Perkins genset
Good accommodation
Comprehensive electronic
Offshore survey May 2025
A BIG 19M VESSEL

\$500,000



5256 WESTERNER - LINER
L 17.6m x B 4.9m x D 2.8m
Main - Doosan 285kW
Aux - Cummins 67kVA
Onan 18kVA genset
20t ice hold. 4 berths.
Bottom & surface line gear.
Trawl winches available.
Survey 100 miles to 11/23

GOOD BUYING \$220,000



5226 WESTCOASTER TUNA
L18.6m x B5.95m x D2.15m
Main Cummins N14 400hp
Aux Cummins 35kVA alt
Fuel 8,000 litres
Fish holds 10 t. 3t bait
32 m tuna drum & spare
drum (bottom lining)
Survey to October 2022

\$850,000



5253 THELMA G - LINER
LOA 17.37m D3m
Cummins K19 171kW
Aux Detroit 353. 22kVA gen
Fuel 10,000 litres
Ice hold 15t. 400 bins
4 berths.
Moana 40m line drum
Survey 100mile to Jan 2026

GREAT VALUE@ \$100,000



5259 TRIAL B - LINER
L16.96m x B4.7m x D2.4m
Mercedes OM402 165kW
Aux Nissan 60hp. 20kVA
Fuel 9,000 litres
Ice hold 15 tonnes
4 berth. Good electronics
Survey 100 mile expiry
22 February 2022

REDUCED \$120,000



5255 PACIFIC EXPLORER
AUTOLINER LOA 30
Deutz 600hp/1000hp main
Aux Caterpillar C6.6 180hp
Gens 150kVA & 75kVA
VP propeller. Bow thruster
Fish hold -8 deg 100ts bulk
BFG autoline system.
Offshore survey to 2024

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5262 ORNEFJELD - FRESH FISH TRAWLER

L 23.95m x B 5.8m x D 3.8m
Mitsubishi S6R 500kW. VP prop on 4.5:1 box
Bollard pull 9.2 tonnes. Fuel 22.7m3
Chiller fish Hold 85.4m3 -2deg C
Hydraulic winches 1250m x 16mm wire
2 x net drums. Poly doors & wing trawls
Good electronics. 5 berths
Survey 100 miles Expiry 16/9/2024

KEEN SELLER \$580,000



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