

SEAFOOD

NEW ZEALAND



**New Minister David
Parker's approach to
fisheries and oceans**

**The recreational catch
- blunt views from a
master fisher**



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EDITORIALS

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In this issue

ISSUE #266:

Welcome to the new year and wide-ranging coverage of the seafood sector.

Our cover story features newly appointed Oceans and Fisheries Minister David Parker, a new broom with an expanded mandate. He is proceeding with caution but there are promising early indications – that the Quota Management System, while open to improvement, will remain the bedrock of our fisheries management and a recognition that fishermen are not responsible for all the ills of our coastal margins.

Accompanying this, Sector Representative Entities – Deepwater Group, NZ Rock Lobster Industry Council, Fisheries Inshore NZ and the Paua Industry Council – set out their achievements and agendas.

Elsewhere, the strident anti-commercial, pro-recreational fishing lobby needs to look to its own behaviour, according to self-funded marine research leaders Scott and Sue Tindale. "If they are so worried about fish stocks, we should count the recreational catch."

Innovation abounds in the seafood sector. In Bluff, the grim former Ocean Beach freezing works has been reborn as a paua farm.

Our featured federation fisherman is Nelson-based Matthew Hardymont, who survived a dramatic sinking at sea and 40 hours in a life raft to continue catching fish for nearly four decades.

Former deepsea skipper Chris Carey navigates tricky Maritime NZ seafaring qualifications.

In news, marine farmers focus on sustainability and Covid-19 responses and celebrate their high achievers.

And photographer Tamzin Henderson is impressed with the protection the hookpod offers to seabirds in a longlining voyage off East Cape.

The best fish 'n' chips column celebrating the country's number one takeaway features a Deep South institution, King's Fish Market in Invercargill.

And our regular columnists are back with their perspectives on our vibrant industry – Seafood New Zealand chief executive Jeremy Helson; Federation of Commercial Fishermen president Doug Saunders-Loder and the regulator's view from Fisheries New Zealand head Dan Bolger.

Settle back, enjoy some top reads and all the best for 2021 in meeting the numerous challenges before us.

Tim Pankhurst
Editor

The year ahead

Dr Jeremy Helson



Welcome to 2021, the year our new Minister will put his own stamp on the portfolio.

With responsibility for oceans as well as fisheries, we welcome the wider focus he will bring on terrestrial-based issues

affecting our waters and impacting inshore fisheries. Minister Parker has already indicated that this will be a priority for him, and we welcome the attention to an issue that is overdue to be rectified.

This year will also see the release of a report by the Prime Minister's chief science advisor, Prof Juliet Gerrard, that will detail the findings of an advisory panel into New Zealand's fisheries management. The panel, which comprises scientists, fisheries experts and environmental NGOs, is examining how data can best be utilised to inform and improve fisheries management. The ecosystem approach to fisheries management being discussed by the panel is something that is already well accommodated in the New Zealand Fisheries Act. Prof Gerrard has a keen interest in New Zealand fisheries and her report will be

interesting reading.

Also looming this year is the wide-ranging review of marine protection legislation. As NGOs aggressively push for an arbitrary 30 percent of our oceans to be locked up in no-take areas, a more nuanced and risk-based approach, targeting ecological outcomes over predetermined tools, and enabling further Benthic Protection Areas, where the ocean floor is not touched but fishing may continue, should be part of the solution.

It is great to have the interview with Minister Parker featuring in the magazine this month. Our interactions with him in the short time since he has taken the portfolio have been reasoned and constructive. Likewise, with Prof Gerrard.

The industry shares the view that the health of the marine environment is paramount; we rely on that for our business. It is in everyone's best interests to protect it so our fisheries can flourish.

The seafood industry is committed to being part of that solution and will continue to engage in good faith to that end.

Last year was tough for many of you. We are not out of the Covid-19 woods yet, but all signs are pointing to a much better 2021.

SEA INTO THE FUTURE

SEAFOOD NZ CONFERENCE | 19-20 AUGUST 2021

RUTHERFORD HOTEL, 27 NILE STREET, NELSON

The wild East

Tamzin Henderson



It was only as I walked across the tarmac at Blenheim airport, on the way to join the *FV Commission*, that the impending trip really dawned on me.

I knew nothing about surface longlining, about tuna fishing, about skipper Mike Te Pou and *Commission*, or about the East Cape. In fact, I didn't even know much about the Hookpod that I was there to photograph. But having spent what felt like all of 2020 land based, I was just keen to get back out on the water. In hindsight, a quick check of the forecast may have been wise, or it may have put me off the wild East completely.

2020 saw us celebrating the first World Albatross Day (19th June), and with that came added attention

on seabirds, their distribution, habitat, and of course, threats.

This also meant increased visibility for fishing methods such as surface longlining.

World Albatross Day was timed perfectly with a trip out with Mike for a week or so chasing Southern bluefin. It would be my first trip off the East Cape on a surface longliner, and on a small commercial vessel (I have become quite accustomed to the larger trawlers).

I was keen to learn, not just about the protection the Hookpod offered, but with my business owner hat on, what it meant for the guys running them.

Are they a viable mitigation device for our fleet?

In typical Tamzin fashion, I was feeling a little seedy by the first night set, and my condition only improved once I was back on land 10 days later.

I did not expect to encounter the swells we did off East Cape, but as mentioned, I did not know what to expect at all.

I have long mastered the art of seasick induced fasting/functioning though. So, it was quickly back to the job at hand – photography.

Mike has been running Hookpods for around five years as an alternative to weighted lines.

Watching the boys efficiently set and haul the 2000 hook lines was surprising. Hookpods did very little to slow the process down which had been my biggest question.

I sat through almost every haul, not just to photograph but out of pure curiosity.

“I watched with interest as the hooks were removed from blue sharks and they were released back alive, as each tuna was bled and gutted as soon as it arrived on deck, with far more care than I’ve ever seen even on rec vessels.”

– Tamzin Henderson

I saw my first southern bluefin, my first swordfish, my first moonfish, and a Peruvian oil fish. It was truly fascinating watching these pelagic fish being hauled on to deck.

I watched with interest as the hooks were removed from blue sharks and they were released back alive, as each tuna was bled and gutted as soon as it arrived on deck, with far more care than I’ve ever seen even on rec vessels. I watched seabirds that I have not seen for years (like the Campbell albatross) hover with interest over the vessel, but not a single bird was harmed. Mike hasn’t caught one all year.

Being self-employed, and navigating Covid-19 as business owners, my sister and I quickly adopted the philosophy of ‘adapt or be left behind’ and I truly think Mike, and *Commission* owner Wayne Kusabs, live by this.

There have been massive changes happening across the seafood industry, and no doubt more to come. But a willingness to change, evolve and adapt is what will keep the industry moving forward into this more eco-aware and conservation-conscious world.



Dave Goad watching on as the tuna is bled.



Crew on the *FV Commission* hauling longlines with hookpods



The hookpod. A seabird bycatch solution that helps prevent birds from diving for bait by protecting the barb and baited hook.

“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

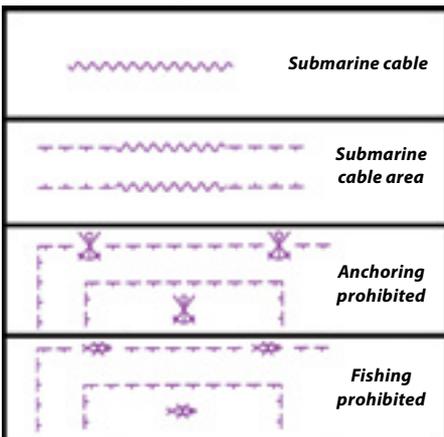


Figure 1.

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.

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.

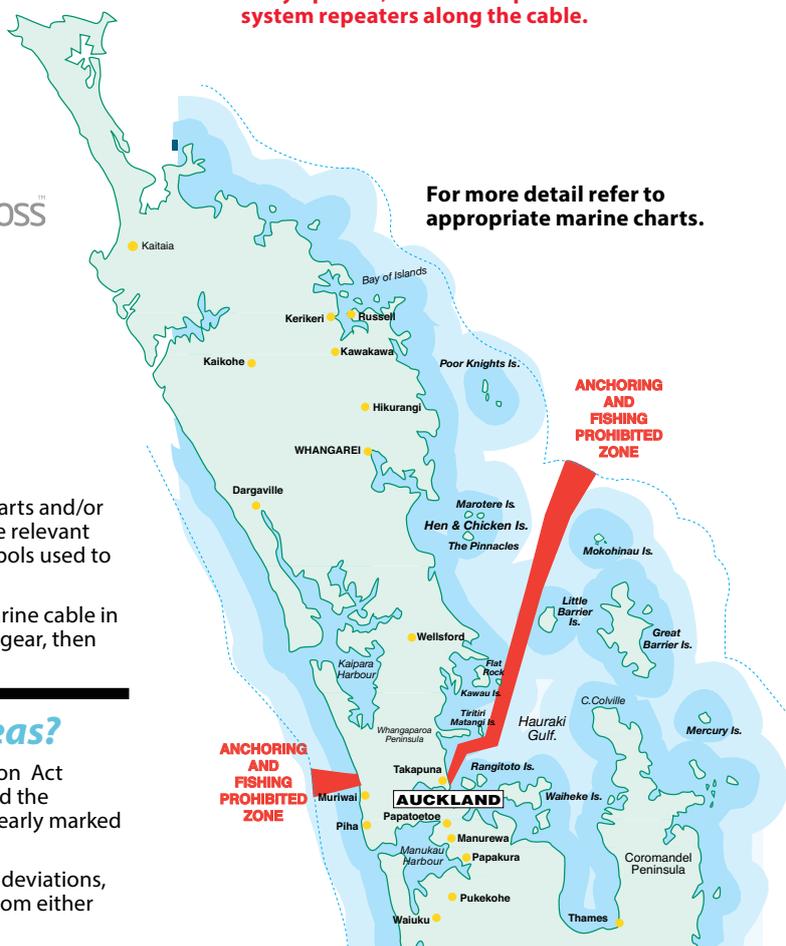
What happens outside the prohibited areas?

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**



For more detail refer to appropriate marine charts.

The recreational catch – blunt views from a master fisher



The Tindale Marine Research Charitable Trust runs an inshore tagging programme using citizen scientists.

A shared fishery can create tensions but marine experts Scott and Sue Tindale say there are many improvements that can be made towards a healthy marine environment and a thriving fishery – and much of that is in the recreational and science space. LESLEY HAMILTON reports.

Sue and Scott Tindale know a lot about the marine environment. They have been on it or under it for most of their lives.

Retiring early after successful careers in the corporate world, the Tindales turned their experience in sport fishing and their decades-long knowledge of the marine environment to contribute data and knowledge to scientists, fellow anglers and fisheries managers.

The Tindale Marine Research Charitable Trust was formed in 2018 by the couple as a place to educate and

showcase marine research and citizen science in and around New Zealand.

Because of a huge gap in the knowledge of New Zealand's inshore species, the Trust initiated a New Zealand-wide inshore fish tagging programme for all fishers to become involved in.

The Tindales live and breathe the marine environment and while they have achieved unprecedented success in the sport and game fishing world, their passion now is to educate others about best practises and initiatives.

Six years ago the Tindales achieved the pinnacle of game fishing accolades with both receiving International Game Fishing Association lifetime achievement awards for surpassing 100 world records. Only eight male and eight female fishers in the world have received them.

Scott Tindale says, even when sport fishing, they would release healthy fish unless there was a good reason not to.

"We wouldn't keep a fish unless it was a world record and there was some scientist who was keen on examining it or it was going into a world collection, so we were fishing to order and getting world records while we were at it."

FEATURE

They satellite tagged hammerheads and short finned makos for NIWA and the couple are among only a handful with a permit to research tag great white sharks, manta rays and other protected species. The data is invaluable.

"We always assumed the makos headed to the tropics in the middle of winter and came back in the summer. The opposite happened. They were sitting off the West Coast in the hoki fishery and only left the EEZ for two or three weeks. One of the tags we got back from a manta ray showed it had dived to depths of 4000 metres."

When time allows, they help out at the Auckland Museum's wet lab, which is where the marine specimens going into collections are preserved and catalogued for future study and they assist with necropsies of great white sharks reported to DOC.

They feel strongly about the shortcomings of New Zealand's shared fishery, and are not afraid to voice it. Spending in excess of 100 days every year out on the water doing research gives those voices clout.

Scott Tindale says the commercial sector is not perfect, but it contributes to marine research, the catch is quantified, and they are continually upgrading procedures.

He is not as kind when talking about the education and regulation around recreational fishers – and he is scathing of those who seek to blame the commercial sector for all ills with any fishery.

Recreational catch mortality is very high, according to Tindale.

"Most have no idea how to handle or unhook a fish, exercise poor tackle selection like barbed 'J' or three-pronged hooks that cause gut hooking of unwanted or undersized fish, and they just chuck it back dead or dying and call that recreational catch. I call it dumping and high grading," says Tindale.

"Look, I am not MPI and I don't want to be the fun police either. My job is to educate people about the best way to do things but there is a lot of work to do."

The couple call weekends on the Hauraki Gulf the charge of the light brigade with pleasure craft charging through the middle of a work-up, flattening seabirds.

"I had one guy ring me up laughing because he had his windscreen smashed by a couple of gannets. So, I am sitting on these working groups and these guys are only on about commercial bycatch and I just throw my phone on the table and show them a video of a guy strangling a shag while he is trying to get his live bait hook out of his mouth – and he did that twice while I was filming."

Tindale says they were incredibly frustrated with the misinformation in the public domain and the apparent reluctance to contradict it with fact.

"Part of the reason for starting the Trust was we wanted to get actual data out there, not someone's opinion or estimate or survey. I've done those surveys.

"I mean CRA2. MPI know I hate the National Panel



Scott and Sue Tindale on *Orokawa*, their 35-foot Bertram spear fisher.

Survey because it is garbage. But in CRA2 they interviewed two people and they weight the numbers. I mean if I were a fisheries officer, I might have to have a word with these two panel respondents because they got 360 crays each per day after the manipulation of the numbers. What it is, is guesswork and creative accounting.

"If they (LegaSea) are so worried about fish stocks, we should count the recreational catch."

– Scott Tindale

"And the ramp surveys. Try coming to Gulf Harbour where there are punch ups because there is so much traffic queuing for the ramp. Try getting someone to stop for a three-minute survey there. If your car is stopped someone is going to throw a brick at you. We were at Shelley beach and we were just waiting for the queue to die down, so I just wandered over to the woman doing the ramp survey and asked her how many she had counted. She said no one wanted to talk to her and the only ones who approached her were new to the area and wanted to know where the fish were. Then I gave some guys a hand with their chilly bin and they sniggered and said they caught nothing. I had damn near put my back out lifting it out of the boat for them," says Tindale.

According to NIWA, the average recreational fisherman catches 1.2 kilos of fish per person per year on four trips.

Tindale says every recreational angler he knows, even the ones who are hopeless at catching fish can do better than that.

Then there are the aerial surveys.

"We were out on the top of the Manukau Bar the same day DOC was doing the aerial survey for Maui dolphins where they came up with the number 50– and I counted 17 of them around my boat in three different locations. We jokingly put a complaint into DOC that they were chasing our kahawai away."

Scott and Sue Tindale say the ministry's research done in New Zealand on inshore species needs to get out faster and shouted from the rooftops, but it is not.

"Why is the research not being shared as it is done, not five years down the track when it may be peer reviewed but it is out of date? Instead of arguing the tarakihi is functionally extinct based on a research project that was done six years earlier, why aren't we releasing the latest one that shows they have bounced back?"

So why does Tindale think there is such a divide between recreational and commercial fishers?

"There are a lot of people who don't fish, or don't fish that often. Even with our tagging programme, the first reaction I got from recreational fishers was whether I was going to give all the data on their fishing spots to the commercial guys. I told them I was pretty sure that the commercial fishers who are out there 365 days a year are not interested in the one spot you go on that one weekend in January along with everyone else."

NIWA estimates some 20 percent of the population fish recreationally and Tindale says 33 percent of them fish in the Hauraki Gulf, where there is very limited commercial fishing.

"Recreational fishers claim the Gulf is functionally extinct yet each time I go out there I can't avoid catching fish. We have rules of which fish you can catch and how many you can catch but no one tells you how to fish," says Tindale.

"I have done a lot of research on the species everyone claims they can't catch in the Gulf like tarakihi, snapper, and kahawai. But everyone is hell bent on charging into the Motuihe channel to sit next to their mate's boat with the stereo blaring and wonder why they're not catching anything.

"It's a patch of water that is next to the largest city in New Zealand and everyone wants to blame someone else for not catching fish."

The Tindales say the need for recreational education is urgent.

"We help Southern Seabirds at the boat shows and ask every person who walks by if they have ever caught a seabird. At the Auckland on the Water show every single person said yes. Yet, while the commercial sector is using dyed baits and tori lines, there are no mitigation methods expected of any other fisher. And where are the



The Tindale's satellite tagging programme is producing valuable data.



Assisting Clinton Duffy of DOC with a necropsy of a great white shark.



The Tindales help out in the wet lab at Auckland Museum.

FEATURE

resources being put into telling them how to release a bird safely if you do catch one? And telling them there is legislation that says you must report every protected sea bird capture?

"When Sue and I wander along any beach it is common to find discarded fishing line and dead seabirds with wings missing. Braid is deadly and cuts a seabird's wing off easily if they get tangled and the rod is struck to flick it off.

"I was part of working groups on seabirds where they would just beat up on commercial fishers and I'd go hold on; how many birds did commercial have interactions with last year? And I would comment that I see more birds caught by recreational fishers on a long weekend on the Hauraki."

The Tindales are constantly seeing unacceptable behaviour.

"We filmed a dead Antipodean Albatross floating on the water off Whangaroa in the hapuku grounds. It had only just been thrown overboard because when you see the small feathers floating around it you know it hasn't been there very long. It had its throat cut. A fortnight later when I was in a seabird working group, I showed them the photographs. I also told them I know for a fact a commercial crew was not responsible," says Tindale. The subject was changed.

**"I gave some guys a hand with their chilly bin and they sniggered and said they caught nothing. I had damn near put my back out lifting it out of the boat for them."
– Scott Tindale**

However, it is the ignorance around commercial fishing that really riles Tindale up.

"The last meeting I had with LegaSea I had to explain what the EEZ was. They were having this argument about kicking commercial boats out to 50 miles and I told them New Zealand territorial waters only go out to 12 nautical miles. They didn't understand that the EEZ only gave us exclusive rights to extract from it.

"Another meeting I had with them they were going on about purse seining for skip jack tuna and bleating on about how it was destroying the seabed. I mean, honestly, did these guys actually think the purse seiner net touches the bottom?"

Tindale does not believe LegaSea and other eNGOs actually believe what they are saying.

"It's money. LegaSea is a limited liability company. It can't get funding unless they create a problem that they say needs fixing. My answer to them is if they



The Tindales have hundreds of world records for game fishing over decades.

are so worried about fish stocks, we should count the recreational catch. Boy that goes down like a lead balloon, with screams of 'it's our birth right,'" says Tindale.

Both believe these groups should be accountable for the misleading information placed in the domain.

Meanwhile, the Tindales just get on with their core job of educating people through their own tagging programme.

"When we were assisting NIWA it was frustrating that they didn't want to release the information right away. With our programme, updates are put on social media regularly, I analyse the database here and do quarterly reports that are available on the Trust's website for everyone to see.

"It's about getting fishers to think about more than just killing fish. Let's find out how fast they grow and where they move. I want the average guy out there to know that that 54cm kahawai that they just caught could be 24 years old. Or, if they let that snapper go at 20cms there is 90 percent chance it is of breeding age and if it gets recaptured in a years' time it will have put out two million eggs."

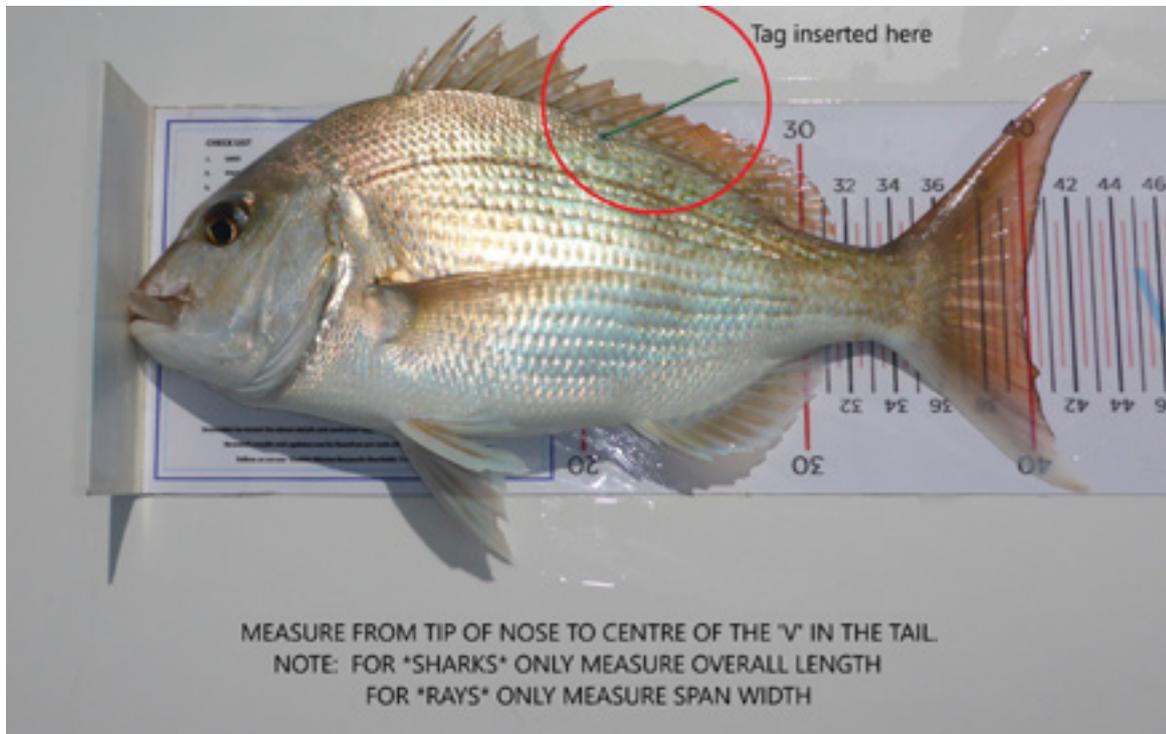
Tindale says it's not about them and us.

"It's about education, consistent, well-flagged regulations, robust and speedy science, and the holding accountable of those who choose to spread misinformation."

"Anyone who cares about a healthy, shared resource should be working with all sectors, not against."

WANTED

REPORT TAGGED FISH



Recreational fishers and citizen scientists throughout New Zealand are giving our fish a second chance while providing valuable research into the species we all cherish.

We are asking you for your help.

If you recapture a tagged fish please record the following information:

Recapture Date

Fish Species

Tag serial number

Catch Location

straight line Length Measurement

Email your details to tindaleresearch@xtra.co.nz or fill out the tag recapture form at

<https://tindaleresearch.org.nz/fish-tag-recovery-form/>

It will be your choice to keep your catch or re-release it for a third chance.

The inshore fish tagging program is an initiative open to all New Zealanders through the **Tindale Marine Research Charitable trust**. A non profit organisation set up to promote & encourage environmental education conservation and research for a better understanding of our marine environment. **For more information or if you wish to join the program**

check out our website www.tindaleresearch.org.nz

follow us on Facebook

A habitat-based ecosystem to fisheries and oceans

Newly appointed Fisheries and Oceans Minister David Parker has given Seafood NZ the first extended interview on his approach to his expanded portfolio. TIM PANKHURST reports.

management approach



The former fishing vessel *Carabus* part owned by New Zealand's inaugural Fisheries and Oceans Minister.

A new government and a new minister are nervous times for any industry.

That is particularly so for the complex, heavily regulated seafood sector with its many competing interests and a shipload of trenchant critics, despite its considerable contribution to the economy and society.

Enter David Parker, a heavyweight, highly experienced minister ranked number eight in Jacinda Ardern's Cabinet with an expanded fisheries and oceans mandate.

His demanding portfolios include Attorney-General, Environment, Revenue, Associate Finance.

So, what did he do wrong to get fisheries as well?

"No comment," he laughs in a pre-Christmas interview in his Beehive office.

A large orange stuffed octopus occupies the corner of the outer office, rather than the traditional Christmas tree.

Parker – quietly spoken, cautious, considered – has made a favourable impression with his initial dealings with seafood industry leaders and the media, prepared to listen and learn instead of delivering pre-conceived policy.

With a background in business and law, Parker, a

boyish 60, is no ideologue.

He is an experienced business leader – he was founding chief executive of bio-tech milk company A2 and was a senior lawyer before entering Parliament in the Clark Government in 2002.

And unlike three years ago, there is no plan to review the Quota Management System that underpins New Zealand's internationally rated fisheries management.

That proposed review, ill-conceived and poorly articulated and executed, was strongly resisted by industry and iwi and sank without trace.

"We are not going to have a wholesale review of whether we should have the QMS," Parker says.

"We are open as to whether there are improvements that can be made.

"There are a range of those, some already started. Like what are we going to do with measures that effectively create an incentive for discards?"

"Is there a need for some finer grain management in some QMS areas and, if so, do the current QMS rules inhibit that?"

"I don't know the answers but some of them are being worked through.

"I want to get my head around some of the criticisms that are made as to the robustness of data on fish



David Parker – supportive of the Quota Management System but open to improvements.

abundance and what the data is like on habitat.”

He is awaiting a report by chief science advisor Prof Juliet Gerrard who has been asked to review fisheries data “to explain, if she can, the seemingly irreconcilable positions taken by different interests”.

The strident anti-commercial fishing lobby that includes

activist academics, Greenpeace, Forest & Bird and the extreme end of LegaSea dismisses fisheries scientists research showing 95 percent of New Zealand’s landed commercial catch is from sustainable stocks and the remainder is under management.

“Positions are so entrenched I could swing up and down Queen Street on a vine yelling like Tarzan that all is well and still wouldn’t be believed,” Parker says.

“Some of these issues need to be authoritatively spoken about by somebody independent.

“I’m open minded as to what that mechanism might be and it will be interesting to see what the chief science advisor has to say.”

“Positions are so entrenched I could swing up and down Queen Street on a vine yelling like Tarzan that all is well and still wouldn’t be believed.”

– David Parker

Her report is scheduled for delivery early this year.

Parker defended commercial fisheries when interviewed by an excitable John Campbell on Television One’s breakfast programme in December.

That followed a one-sided week of attacks on the commercial seafood sector by the usual suspects alleging the fishery was being plundered to the point of collapse.

Campbell, clearly on the side of the doomsayers, threw Parker several baits but he refused to bite.

He agreed fisheries management could be better “but I’m not going to beat up on the commercial people unduly, many of them do their best”.

He said there was good news in the deepwater “with some fish stocks like orange roughy having been rebuilt”

and a reduced trawl imprint for the same catch.

“There are more problems in some of the inshore fisheries but you can’t just blame commercial for this.”

A habitat-based ecosystem management system that took account of land-based factors such as sedimentation and destruction of coastal margins was needed.

Parker enjoys recreational fishing but represents little threat to the resource.

On his most recent trip with partner Barbara in a dinghy off Karitane beach, he caught one blue cod and what he thought was a greenbone (butterfish) but was in fact a wrasse, a parrotfish.

“I know some of the inshore fishers have got a really strong conservation bent.”

– David Parker

“It was a horrible thing when I cooked it. My fish identification skills weren’t perfect on the day.”

He also got wet, leaping out in the waves in the shallows to stop the row boat overturning.

He has more success gathering cockles at Blueskin Bay and tuatua and in spearing flounder.

He fly fishes too but the joy is more in being in New Zealand’s stunning outdoors than in the catch.

There is another link with the sea – the Karitane-based former commercial fishing vessel *Carabus* in which he has a quarter share with family and friends.

“Karitane’s got a small commercial fishing history that goes back many decades,” he says.

“I know some of the inshore fishers there have got a really strong conservation bent themselves. They’re a bit tired of getting it in the ear for consequences they don’t think are caused by fishing but are caused by land-based discharge.

“They cite the loss of the little fish, they used to school



Smothering mud in the Invercargill estuary showing the detrimental impact of land-based discharges on coastal margins.



Taieri Mouth, 40km southwest of Dunedin, was severely affected by sedimentation from the 2018 floods.

in their millions around the mouths of rivers and now essentially they're gone.

"The beds of krill that used to wash up on the beaches are not nearly as frequent.

"The yellow-eyed penguins are struggling despite reduction of land-based predators.

"The kelp beds are shrinking, that's not a climate change event, it's not a water temperature event. Fishers like Alan Anderson and Martin Gilmore are saying land-based discharges are the biggest problem."

While this stretch of Otago coast has been closely studied by University of Otago catchment researchers, Parker knows there are similar issues throughout coastal margins all around the country.

He has seen fresh mudbanks more than a metre high in the Kaipara harbour, a prime snapper nursery, where the Government has allocated \$100 million in partnership with councils and farmers to alleviate sedimentation.

He says a totara marker placed at the Waihou River mouth with the Firth of Thames 50 years ago is now 50 metres from the water, the mud smothering the sea at a rate of a metre a year.

And the river estuary behind Invercargill is filling with deep, sucking gloop.

"These are recent sediments," Parker says. "I'm talking the last decade, not deforestation 100 years ago when the country was colonized.

"At the 10-metre depth in Otago/Southland the light penetration is 50 percent of the same level at Stewart Island. That could be the main factor as to why the forests of kelp are diminishing and all the life they support.

"The fine sediments also make it harder for shellfish in estuaries because these filter feeders have to filter a lot more crap out. The shellfish aren't thriving and it's hard for fish to spawn.

"I'm concerned about habitat degradation and I don't blame it all on the fishing industry, although some of the practices have contributed."

Parker's predecessor, Labour's Stuart Nash, promoted

an ambitious five-fold increase in annual aquaculture exports from the current \$600 million to \$3 billion by 2035.

Is that still the target, is it realistic and how is it to be achieved?

Parker is not one given to the grand gesture and, again, is circumspect.

"I haven't got my head around how those numbers are calculated but I do accept there is a large opportunity for New Zealand in marine aquaculture born of new technologies that can work in deeper, more rougher seas," he says. "I'm not sure if it's just salmon farming but salmon farming would be part of it."

"I'm concerned about habitat degradation and I don't blame it all on the fishing industry."

– David Parker

He says a key to that is resolving allocation of space to Maori, who are entitled to 20 percent of new waters under the Deed of Settlement arising from the Treaty guarantees on fishing.

A Maori Aquaculture Bill has been introduced to break the impasse.

"It has been held up by a consensus being needed for divvying everything up. Ninety percent of it's agreed, the 10 percent that isn't approved has been holding up the allocation of the 90 percent, so we're carving off the 90 percent and leaving the residual disputed 10 percent to be resolved in the future by TOKM (Te Ohu Kaimoana)."

Greater marine protection including the status of the Kermadecs; endangered species bycatch, particularly Antipodean albatrosses; best practice trawling technologies; and greater emphasis on international actions on the high seas are all on the agenda as well.

Parker has plenty on his plate but appears inclined to consider the menu deeply.

Kaikoura and Cape Campbell paua fisheries on target for reopening in 2021

Storm Stanley, Paua Industry Council



Extensive areas of uplifted seabed at Cape Campbell. Image; Storm Stanley.

The November 2016 earthquake had a dramatic and enduring impact on the coastal landscapes from Kaikoura to Cape Campbell. Four years on, anyone who drives along the rebuilt coastal road cannot help but notice the extensive platforms of uplifted seabed. These reefs previously supported a rich ecosystem of seaweeds, shellfish, and other marine species, but are now high and dry, with some areas being raised by a massive six metres. Shellfish and seaweed habitats have been permanently altered, and in some areas, the coastal environment is still changing, with erosion of uplifted substrate continuing, sand coming and going, and increased levels of sediment washing into the sea after storm events.

Immediately after the earthquake shellfish and seaweed fisheries from the Conway River to Marfells Beach were closed to support their recovery, including important paua fisheries in PAU3 (Canterbury/Kaikoura) and PAU7 (Marlborough). While the exposed uplifted seabed is gradually weathering and hardy coastal plants are becoming established, under the water a different type of regeneration is slowly but surely occurring. There are now encouraging signs that paua populations have recovered sufficiently to allow careful re-opening of the closed area.

A few months ago, Te Korowai hosted a meeting to provide an opportunity for the scientists who have been monitoring the regeneration to discuss their findings with the Kaikoura community. Paua industry scientist Dr Tom McCowan reported that while the monitoring sites show some variability, there is an overall trend of increasing paua abundance across the closed area. The survey teams also observed increased abundance of post-earthquake recruits – that is, paua that have emerged and grown to at least 100mm since the earthquake – demonstrating that the full paua lifecycle is intact and functioning across a widespread area of the fishery. McCowan concluded that although there is some ‘patchiness’, the biological criteria for reopening the fishery have been met.

While the biological signals are looking good, Jason Ruawai, chairman of PauaMAC3 points out that “re-opening is not only about meeting biological criteria – we don’t want to encourage a gold rush, so it is absolutely critical that effective management measures are in place for all sectors before the closure is lifted. Once we are confident the paua lifecycle has re-established, with careful management the fishery will be able to continue to meet the needs of current and future generations”. To that end, the PAU3 industry has developed a Fisheries Plan which prescribes a careful and highly conservative management approach for commercial fishing once the fishery is re-opened.

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Reduced levels of commercial harvesting, a higher minimum harvest size and the spreading of harvesting effort are all part of the plan. In addition, PAU3 quota owners have applied to subdivide the PAU3 fishery so that tailor-made management provisions can be applied in the earthquake-affected area without affecting the southern part of PAU3 at Banks Peninsula.

The PAU7 industry has also prepared a Fisheries Plan and re-opening strategy that provides a similar management approach for the earthquake-affected Cape Campbell area. Both fisheries plans and the subdivision proposal were consulted on in 2020 and received positive public feedback. Barry Chandler, chairman of PauMAC7, says “we’re confident that the plans will soon be formally approved by the Minister so that they can provide a pathway towards re-opening and future management, not only for the industry, but for everyone with an interest in these paua fisheries”.

The final piece of the jigsaw puzzle for safely re-opening the fisheries is to ensure that adequate management measures are in place for recreational paua harvesting. Ruawai says “new recreational controls are necessary because the paua fisheries at Kaikoura and Cape Campbell are now essentially shallow-water fisheries – they are highly accessible to the public from the shore and therefore vulnerable to localised depletion. If you’ve been to Kaikoura lately, you’ll have seen that the paua in some areas look very healthy and abundant, but we won’t have a full understanding of the new population dynamics for many years. We can’t afford to jeopardise what we’ve gained during the closure”.

Implementing effective management measures for recreational fishing is challenging due in part to the lengthy regulation-making process which typically takes at least a year from developing proposals to passing the new rules. That process is now underway, with Te Korowai engaging with the local community to develop proposals. The community has come up with some innovative ideas such as possible changes to daily bag limits, fishing seasons and minimum legal size, and new ways of obtaining better information about recreational harvesting.

Chandler says “while Te Korowai’s proposals apply to the Kaikoura



Paua Industry Council chair
Storm Stanley.



Paua that have emerged and settled after the earthquake are clearly visible at this monitoring location, together with older mature paua, demonstrating that the full paua lifecycle is intact and functioning. Image; Tom McCowan.

area, it makes sense to develop a consistent set of recreational management measures for Cape Campbell, so that fishers know exactly what rules will apply. We’ll be keeping the pressure on Fisheries New Zealand to stick to their timetable so that the new recreational rules can be enacted, allowing the fisheries to be re-opened safely and sustainably”.

Comprehensive data collection by all sectors is essential to ensure that recovery continues after the fishery is reopened. Ruawai emphasises that “we need to carefully monitor the health of the fishery and the level of harvest and reassess allowable harvest levels for the commercial and recreational sectors on a regular basis.”

Chandler and Ruawai are both upbeat about the paua fisheries being reopened later in 2021, possibly at the start of the new fishing year on October 1. Ruawai says “the closure has been very tough for the divers and for their families and the local community, especially on top of the other damaging effects of the earthquake and now Covid. But we supported it because we know it’s necessary. We’ve put in the hard work developing the fisheries plan and assisting with the monitoring surveys, we’ve been talking with the local Runanga and community groups to make sure everyone’s on the same page, and now it’s looking like the patience and care that we’ve all demonstrated over the past four years will pay off”.

Chandler adds “this is a good news story for everyone – it’s like a fresh start for the fishery and we’re all looking forward to being able to get back in the water knowing that the paua will continue to thrive under our careful management approach”.

New Zealand's deepwater fishery ranked among the world's best

George Clement, Deepwater Group



The Deepwater Group has a well-developed strategic plan with a vision to be trusted as the best managed deepwater fisheries in the world.

To independently validate our fisheries management performance, we have had New Zealand's deepwater fisheries for hake, hoki, ling, orange roughy, and southern blue whiting assessed against the high science-based environmental standards set by the Marine Stewardship Council (MSC). These audits have established that New Zealand's ecosystem approach in the management of these deepwater fisheries has delivered performances that rank these to be amongst the top five percent of the best-managed fisheries in the world¹.

Around two-thirds of the catch from the main deepwater species is now MSC certified. Other fisheries are 'works in progress'. MSC certification provides reassurance to

our consumers in New Zealand and around the world that our fisheries are managed sustainably and that our harvesting practices can be trusted.

MSC certification is not easily achieved and it is not permanent. Our shareholders are incentivised to continue doing what is right to ensure we are managing these fisheries for the future and can continue to meet the world's highest standards. One example is the agreement by hoki quota owners to reduce their catch by 20,000 tonnes in 2019, in response to changing patterns being observed in three hoki fishing grounds. Quota owners have subsequently agreed to additional catch reductions of 35,000 tonnes to further improve hoki stock size.

As the environmental costs of land-based protein production come under closer scrutiny, natural seafood



George Clement is chief executive of Deepwater Group.

stands out as having a comparably small environmental footprint^[i]. Natural seafood looks after itself - no feeding, fertilisers, pesticides, herbicides, drenches, or antibiotics are required - all we have to do is harvest it in an environmentally friendly way. Wild-

caught deepwater fish is a truly natural and healthy food source.

The fuel consumed during harvesting of deepwater fish is a significant component of our carbon footprint. We have progressively reduced this through more efficient vessels and fishing practices. Since 2005, the number of deepwater trawlers in New Zealand has decreased by 53 percent and the number of trawl tows has decreased by 41 percent, while the annual harvest has remained steady at around 350,000 tonnes.

Over the past 15 years, our shareholders have pioneered a much-needed sea change in attitudes and performance in fisheries activities. There is a strong unity among our 45 shareholders, who collectively own 91 percent of the quota for deepwater fisheries.

The seafood companies that jointly established and own Deepwater Group are all committed to being honest and transparent about their practices at sea. No other primary industry has its environmental performance and operational procedures independently audited by government observers during harvesting and processing. In recent years, just under half of the tows by the deepwater trawl fleet are being observed annually^[ii], with up to 100 percent being observed in fisheries where there is a high likelihood of interactions with seabirds or marine mammals. To reduce these interactions, the industry has developed and implemented vessel-based best practice Vessel Management Plans (VMPs) and Operational Procedures (OPs). Our environmental performance is audited against these agreed measures by Fisheries New Zealand and the results are publicly reported.

Through our 2006 Memorandum of Understanding^[iii] with the Government, we have established and maintained a constructive partnership with the Ministry for Primary Industries (MPI), and with their fisheries

science, monitoring and management division, Fisheries New Zealand.

Collectively, industry and Government share common goals and responsibilities to achieve healthy fish stocks and to minimise the impacts of deepwater fishing activities on the marine environment. These are set out in the National Fisheries Plan for Deepwater and Middle-Depth Fisheries (National Deepwater Plan). Industry's strategic plan aligns with these shared goals.

New Zealand has world-leading technologies and procedures to protect the marine environment while we harvest its bounty. The Quota Management System (QMS) is close to best practice but, like everything, continuous improvements are being made as science provides us with new information and our own experiences and observations identify opportunities for positive change. Since 2005, quota owners, along with the Government, have invested around \$275 million in science and monitoring to inform the management of our deepwater fisheries. We can have confidence that our practices and policies are soundly based on the best available science.

Annually, deepwater fisheries contribute some \$1.8 billion to New Zealand's economy, employing around 6,000 people^[iv] and traverse just 1.2 percent of the seabed in New Zealand's Exclusive Economic Zone (EEZ) to provide the world with an estimated 700 million natural and nutritious servings of seafood. We have a light footprint and a weighty economic contribution.

The New Zealand seafood industry is dynamic, full of passionate inventive and resourceful people, who are natural problem solvers with an inherent conservation focus. By conservation, we mean wise use that keeps our marine resources intact for future generations. We back ourselves, supported by New Zealanders, to perform like the very best sustainable seafood producers globally while keeping our marine ecosystems intact and healthy.

[i] Hilborn et al (2018) The environmental cost of animal source foods, *Front Ecol Environ* 2018; 16(6): 329– 335 <https://sustainablefisheries-uw.org/environmental-costs-of-food/>
Sustainable Fisheries (2020) The cost of food. <https://sustainablefisheries-uw.org/seafood-101/cost-of-food/>

[ii] Fisheries New Zealand (2020) Annual Review Report for Deepwater Fisheries 2018-19 <https://www.fisheries.govt.nz/dmsdocument/39770/direct>

[iii] MPI (2010) Memorandum of Understanding <https://www.mpi.govt.nz/dmsdocument/19715-Memorandum-of-Understanding-2010>

[iv] BERL (2017) The economic contribution of commercial fishing to the New Zealand economy https://www.seafood.co.nz/fileadmin/Media/BERL_report/BERL_Report_August_2017.pdf

Focus on progress after a difficult year

Mark Edwards, NZ Rock Lobster Industry Council



The year 2020 was a rollercoaster that tested the resilience of the rock lobster industry – from the depths of late January total closure of the lucrative and discerning Chinese market due to Covid-19, with no income to meet the bills and debt load, to a period of excellent prices in November and December assisted by the Chinese administration’s good management of their Covid-19 situation and the unrelated trade actions against our colleagues in Australia.

Some operators and companies went through very tough times of financial hardship and stress. The Government assistance schemes were important and timely, and perhaps just as essential, particular attention is now being paid to the psychological pressures in the industry.

Our operators often work in isolated areas and have many challenges including rough weather and heavy physical work, without the anxiety of limited financial returns to repay the substantial outlay for ACE and vessel

operating costs and still meet the family living costs. The focus now on the “Fisher Wellbeing” initiatives mirror the support network that has long been available in other parts of the primary sector is necessary, along with the reminder to industry that these issues don’t have to be dealt with alone and we need to look out for each other.

The rock lobster industry took a lot of criticism, some of it ill-informed, for its reliance on China as a market. Looking back over the last year provides a useful perspective. Other countries did not resume business as fast, and alternative markets are limited and do not have sufficient demand for premium quality live lobsters. They cannot take the quantities or pay the superior return. Outside the Pacific rim, airline flight lengths and timely connections for freight are major impediments for a live product.

Our industry will keep investigating market options and diversification, but currently China clearly best meets the objectives of maximising the value from our primary

production and providing a viable return for operators faced with high catching costs.

Although the stock status of New Zealand's lobster fisheries overall is good, last year again saw the need for responsive management to deal with fluctuating production picked up by industry stock monitoring. The way electronic reporting was introduced has unfortunately created issues through unnecessary complexity and a consequent disjunct in continuity of catch rate data, the key relative abundance index. Regrettably, it also meant the temporary loss of the management procedures used for two decades to deliver certainty and the ability to adjust commercial catch limits up and down on an annual basis.

A NZ RLIC project is now underway to work with vessel operators across the management areas to address misinterpretation over reporting requirements. Scientists contracted by the NZ RLIC have developed a new stock assessment approach, also designed to introduce more efficiency and automation into assessments. Importantly, in the short term this approach can produce updated annual assessments for modelled stocks while we re-establish a time series of catch rate data.

Ironically, in the medium term, this development now termed "rapid assessments", looks like being an even better methodology. Rapid assessments should enable us to review more stocks on an annual basis, using more of the range of metrics collected through the industry logbook and catch sampling programs. Research planning discussions have also identified a number of useful avenues to explore to continue improving the parameters and assumptions that inform the stock assessments and improve their predictive capacity and robustness.

The intention is to use the new rapid assessments to build better management procedures. Many in the industry lament the loss of this mechanism which



New Zealand Rock Lobster Industry Council chief executive, Mark Edwards.

provided certainty about how the information and science was used to adjust catch limits. As a result of work initiated in 2020, we will shortly be able to confirm an improved methodology to calculate stock specific management targets. For these to

be successfully combined with management procedures we need to be able to manage all removals from the stocks.

Recent stock reviews have highlighted significant inadequacy in estimating recreational catch. The current five-yearly surveys are far too infrequent and, in many cases, have error bounds larger than the estimates. There is an urgent need for more frequent surveys, and some potentially more effective approaches for rock lobster fisheries need to be evaluated for their cost and utility. The lag of up to two years in being able to implement revised regulatory settings for recreational controls needs to be addressed by the change to effect adjustment by gazette notice as signaled in MPI policy proposals in early 2019.

These changes, along with addressing the uncertainty in estimates of illegal catch and the application of tools we have seen starting to deliver benefits, such as accumulation limits and telson clipping, need to be introduced widely as part of the responsive management action needed for variable rock lobster stocks. The industry wants to engage with non-commercial stakeholders in formulating management plans that meet shared aspirations for stock abundance, but the plans need to incorporate controls not just on the commercial sector.

The new government brings other opportunities for policy reform that have been slow to emerge in recent years. We welcome the intent to implement improved marine biodiversity legislation. A focus on the outcomes, and a science and evidence-based approach to identify and address the threats, rather than a myopic focus on just one possible tool, MPAs with their attendant disadvantages, will be welcome. There is also much unresolved policy to successfully support digital monitoring and create the incentives necessary for good reporting.

Government has signaled RMA reform is a priority. The industry supports the better integration of legislation used to manage activity in the marine environment, while avoiding duplication of matters that are or can be addressed under the Fisheries Act. There is clearly a requirement for more emphasis on addressing land-based impacts on habitats and ecosystems that support the productivity of fisheries resources; the RMA is designed for this. Throughout these reform and policy processes, some of which contemplate closures, restrictions and zoning of fishing, we will try and get decisions makers to acknowledge the reliance that rock lobster fishing, with its relatively low environmental impact, has on non-exclusive access to the relatively narrow coastal strip that lobsters inhabit.

2021 - An opportunity to address inshore challenges

Laws Lawson, Fisheries Inshore NZ



Though it is a relief to start the new year, our inshore fishing sector goes into 2021 facing a substantial number of challenges - some new, some perennial, but all needing to be resolved:

- The ongoing effects of the pandemic here in Aotearoa and elsewhere more drastically affected by it;
- A new Minister who has expanded responsibilities but is yet to set out his priorities;
- An upcoming report by the Prime Minister's chief scientist reviewing and recommending improvements in how we use data for fisheries management;
- The judgement on the tarakihi proceedings brought by Forest & Bird;
- The development of policy, strategy and plans for greater marine protection at both national and regional levels;
- The use of electronic monitoring systems to verify achievement of management objectives, better verify commercial catch and make possible more agile sustainability decisions;
- The need to resolve operational policy developments to address longstanding fundamental issues in fisheries management such as landings and returns to the sea, associated penalties, catch allocations, and

- management of a portfolio of species;
- Calls for greater protection of endangered species to levels well above sustainability thresholds and associated reduction in fishing-related aquatic environment impacts;
- The absence of an agreed strategic vision, objectives and plans for the wild fish sector;
- Growing concern with bottom-impacting harvesting methods;
- Growing interest in spatial zonation and allocation of the marine space; and
- A fisheries management regime that is not resourced to fully deliver our current management settings, let alone more intense aspirations.

This is the current background for the inshore commercial finfish sector. It creates uncertainty about whether we can afford to invest and, if yes, how much, how many and on what, where that will provide the greatest benefit.

We are realistic that not all those issues can be addressed in 2021 or in the near future. But if the primary sector, with inshore fishing as part of it, is to continue as the mainstay of the New Zealand economy, Government will need to begin to address these issues and remove the uncertainties to allow the inshore fishing sector to have confidence in its future.

It is time that the foundation blocks for the future are put

FROM THE SECTORS

in place and that all stakeholders jointly make sustained investment in their implementation. The inshore finfish sector is willing to work with others and adapt from where we are. This can only be achieved with a collaborative, co-ordinated and comprehensive commitment to achieving a positive outcome and renewed confidence in the inshore fishing sector.

Addressing the uncertainty will energise our fishers and processors to invest in gear and processes that innovate to deliver greater quality at lower costs. At an industry level, we can collectively invest in research and policies that allow a



Fisheries Inshore NZ chairman and acting chief executive, Laws Lawson.

more effective, transparent and responsive set of management measures to be applied to our fisheries.

When we work with others, we can be much more effective than working alone – Minister Nash observed at the inaugural Ministerial Sustainability awards that the East Coast tarakihi Rebuild Plan is an

excellent example of collaboration bringing together the strengths of both regulatory and non-statutory responses that provide in combination a more comprehensive and potent set of measures.

FINZ will continue to support its stakeholders and be engaged in protecting and promoting the interests of its members in the resolution of the issues highlighted above. While much of FINZ's activity will be directed to the operational aspects of fisheries management such as catch allowances, access to fisheries resources and operational research in catch monitoring and management, FINZ will also continue to be active in providing professional input into the strategic and policy issues confronting the sector and the wider industry.

We look forward to working with the Minister, his agencies, other agencies and stakeholders to build a future where commercial fishing and a healthy marine environment co-exist and provide all New Zealanders with the benefits of their oceans and its resources. The year 2021 has to be the start of that process.

Notwithstanding all the above challenges and uncertainty, our sector continues, and will continue, to ply its trade, delivering fresh fish to New Zealanders for their enjoyment.

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Best time for seafood training

After 30 years in the seafood industry, Daniel Edmonds says free fees and brand-new programmes mean there has never been a better time to train.

Edmonds is the seafood sector manager for Primary ITO, the industry training organisation responsible for apprenticeships and workplace training for seafood.

After starting his seafood career on the factory floor, Edmonds has since worked in production, quality assurance and compliance, before becoming a sector manager with the industry training organisation.

"We've rolled out the first completely new range of training programmes for 25 years," says Edmonds.

"That means across seafood processing, point of sale, commercial fishing and aquaculture we've worked with industry experts to make sure we can offer the right training."

Right now, the Government's Free Trades Training is paying the fees of seafood training for the next



Daniel Edmonds is the Primary ITO's seafood sector manager

two years. Its new "Apprenticeship Boost", set up in the wake of Covid-19, also offers significant financial support for employers to take on and retain apprentices.

Seafood joined Primary ITO along with other industries in 2015 and Edmonds says while seafood has different training needs to other industries, there

are real benefits to being part of the organisation with expertise across the primary sector.

"I really enjoy working with seafood companies right around New Zealand, from those operating out at sea, to alpine salmon farming, processing and retail operations. At Primary ITO we genuinely believe our programmes can help employees develop their careers, and businesses get the skilled people they need."

Primary ITO's New Zealand Certificates in Seafood provide a pathway from level 2 to level 5 on the New Zealand Qualifications Framework.

Training is mainly on the job, supported by employers' own Workplace Assessors, Independent Assessors working through Primary ITO, and a network of specialist training providers supported and funded by Primary ITO.

Edmonds says during the review of the seafood training programmes, industry asked for some new types of programmes, including "micro-credentials" and apprenticeships.

As a result, there are now new seafood training programmes available, all with new training resources to support learning at work. Micro-credentials are short, bite-size qualifications focused on a specific area – like safe work practices, catch handling procedures, and knowledge of the Fisheries Act.

As mentioned, we can also offer seafood apprenticeships, in both seafood processing and commercial fishing. These apprenticeships have flexible delivery options and can be tailored to suit the workplace and employee, and we think this is an exciting opportunity for the seafood sector.

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Ocean Beach freezing works reborn as a paua farm



An aerial view of the Ocean Beach paua farm site on the edge of Foveaux Strait.

Aquaculture offers a lifeline for an at-risk Southland economy. TIM PANKHURST reports.

Ocean Beach freezing works at Bluff was once the country's biggest slaughterhouse.

It held the record for the greatest number of lambs killed in a day – a staggering 20,000 – and the sea ran red with blood and offal, drawing sharks to the shallows.

It was vacant for nearly three decades after its sudden closure but now there is new life here.

Behind its stark concrete frontage, half a million paua are growing in multiple tanks, the sound of terrified animals, gruff voices and killing chains replaced by the bubbling of seawater.

The first harvest of up to 50 tonnes is due in 2023, rising to a proposed 200 tonnes annual return two years later in 2025.

It is an ambitious project and one that is not without risk.

A previous paua farm venture here failed and there have been several other casualties at other sites over the years.

A group of Southland and Auckland investors bought the near-derelect 50-hectare site in 2018 and soon upgraded the infrastructure and brought in top scientific expertise in a collaboration with the Auckland University of Technology (AUT).

A five-year memorandum of understanding with AUT covers education, research projects, staff and student exchange programmes, internships, post-doctoral research fellowships, funding applications, and development of other species such as salmon, oysters, seaweed and forms of macro and micro algae.

The company's managing director is Auckland-based investor Blair Wolfgram, 43. Financial backers include a collection of business associates, close friends and family of Wolfgram.

Its chair is seafood trading veteran Gary Monk, who once sold Ocean Beach-sourced mutton.

Wolfgram exudes enthusiasm and optimism about the big task he has taken on at the southernmost edge of the world.

"It has certainly kept me up at night, thinking what the hell have I done?" he laughs.

"The scale of it can be quite daunting for most people but that's also what makes it exciting and viable.

"I love Bluff. It has so much history, so much to offer and you don't get a sense of its proud past at the moment.

"It is one of the oldest established European settlements in the country. It's 200-year anniversary is in 2024"

He says the clouded future of the aluminium smelter at nearby Tiwai Point, Southland's biggest single employer, highlights the importance of the emerging aquaculture industry.

"Aquaculture globally, but for New Zealand in particular, is a sunrise industry and Southland is one of the best places in the country for that.

"Ocean Beach has been an eyesore and an embarrassment for the community since its closure. It was once the pride of Southland and we have an opportunity to resurrect that.

"It is going to take time, energy, courage, investment and support but once we're there it has the potential to provide the community with long term sustainable jobs and growth.

"I am very positive about this place. I am very positive about Southland aquaculture. I am very positive about this community. They have been very welcoming and want to see Ocean Beach back to her former glory."

Wolfgram is coy about finance projections but says he

is in discussions with both New Zealand and International aquaculture players looking to partner at the site.

Farming paua is certainly challenging but Wolfgram is confident his team have got the formula right. He says the immediate focus for the team at present is the paua farm expansion and once at harvest sees opportunity to expand paua sales into both the domestic and Asian markets.

The paua are bred from adult stock taken from Stewart Island, included in the Total Allowable Commercial Catch.

They are sexed by sliding across the skirt around their foot with a wooden spatula and noting the colour of the internal organs – greenish for females, cream for males.

Looking at minute six-day-old larva through a microscope, the shell can be seen to be already forming.

These tiny creatures are mobile and have a visible heartbeat.

As well as growing domestic and global demand for sustainably farmed seafood, the plan is to also produce stock to reseed wild fisheries.

Science advice is led by AUT marine biologist Professor Andrea Alfaro, who was on site during my tour starting formulated feed trials. Alfaro is also a director of the company.

On a cold spring day, she was clutching a hot water bottle to stay warm in the wet makeshift laboratory where minute paua are cultivated, measured and monitored



Half a million paua grow in the farm's tanks.

FEATURE



Bluff Limited managing director Blair Wolfgram leading the paua farming venture.

with tiny identifying numbers glued to their shells.

Alfaro says Bluff provides cold and clean water – the temperature varies between 8 and 13 degrees Celsius – that is ideal to avoid the stresses of ocean warming.

She believes aquaculture holds such potential that the Government's ambitious export target of \$3 billion

annually by 2035 (currently only a fifth of that at \$600 million) is achievable with Government support.

She says virtually every wild fish species is under pressure or undergoing significant change from acidification of the oceans caused by global warming.

The research conducted at Ocean Beach will help breed resilient shellfish, fish, algae and seaweed and optimise their growth to help ensure a sustainable future.

It requires imagination to see the desolate site as an aquaculture, education and tourism hub but that is the vision.

The proposed development includes a research and learning centre, restaurant and bar, public tours of the site and artisan retail and workshops.

The company is also in discussions with the Department of Conservation and the Te Araroa Trail Trust to reroute the country's 3200-kilometre-long pathway that ends and starts here from the roadway to take in the coastal fringe around its site.

On this day, the cloud was low and a frigid sou'easterly cut through clothing and whipped into the cavernous remains of a killing shed.

Much of the plant has been removed but the frontage beside the road on the narrow isthmus leading to the Bluff township remains, as do the offices and several key buildings.

This unprepossessing place was the employment hub of Bluff and wider Southland for just on a century. The Ocean Beach Freezing Works was established in 1892 by Australian-born Invercargill grain merchant Joseph Ward, who was subsequently knighted and became New Zealand's Prime Minister in two separate terms.

When the Alliance meat company suddenly closed the sprawling plant in 1991, the scars were deep and are still felt.

The works "drew in hard personalities to do dirty work," according to historian Dr Michael Stevens.

But it generated a strong sense of community, attracting North Island Maori and Pacific Islanders in particular, many of whom settled locally. Wolfgram is part Ngapuhi himself.

When Ocean Beach and other meat works closed, Southland's population fell by 10 percent, from just under 100,000 to 90,876 15 years later in 2006.

Despite investment in the Southern Institute of Technology with its lure of free tertiary study, tourism, fishing and aquaculture, it was not until this year, three decades on, that the population reached its 1991 peak.

Bluff Limited employs only a dozen people at present but that is expected to grow markedly.

"Aquaculture globally, but for New Zealand in particular, is a sunrise industry and Southland is one of the best places in the world for that."

– Blair Wolfgram

The company is confident enough to have earlier this year purchased Bluff's only backpacker accommodation – Bluff Lodge, a handsome Victorian building that is the former Post Office.

It has also purchased 120 hectares of adjacent farmland to secure vital freshwater access.

Coastal Permits allow 13,000 cubic metres of seawater to be utilised daily, which is pumped from the shore of Foveaux Strait on the southern side of the plant. There



is also the infrastructure to pump and discharge into the Bluff Harbour as well.

With seaweed and sand filtered out, the discharge is cleaner than the intake and is monitored by Watercare and Environment Southland.

“Many have said it cannot be done,” Wolfgram says of the ambitious project.

“We think it’s a once in a lifetime opportunity to go to it and prove it can.”

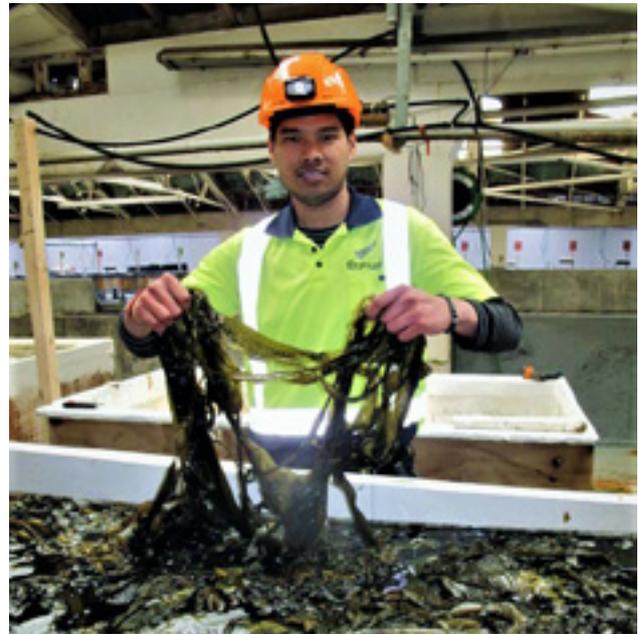
The original Southern Marine Farms paua venture led by Southlander David Corbin on the site was shut down in 2009, a victim of price collapse during the global financial crisis and a lack of scale.

“The previous Ocean Beach owners were pioneers in the industry in my opinion and well ahead of their time,” Wolfgram says.

“We are essentially picking up where they left off, albeit on a larger scale.

“We’ve achieved a lot in a short time and the community will start to see the site gradually improve.

“And I love the fact that instead of death and desolation, we’re bringing life back to the site.”



AUT graduate Mogana Kumaar working on New Zealand-based formulated feed for paua brood stock.

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Marine farmers focus on sustainability and Covid response

Brendon Burns

Marine farmers from across the top of the South Island gathered at the new Queen Charlotte Yacht Club in Picton for the annual conference of the Marine Farming Association, representing 60 percent of New Zealand's aquaculture production.

The focus at the November meeting was on the sustainability of the industry and how it had successfully responded to the impacts of Covid-19. Dana Carver from DairyNZ spoke about some of the sustainability challenges faced by the dairy sector and the change programmes they have implemented to address them. Kirsty Harkness from Mount Base Wines talked about the importance of resilience and the need to innovate when facing challenges.

Kiwibank chief economist Jarrod Kerr told the 100 attendees that banks were overly conservative in their initial forecasting of the Covid-19 contraction, although there will be impacts on the global economy for years to come "We always under-estimate the adaptability of business," he said. One off-set for New Zealand was that our national brand had 'sky-rocketed' internationally

assisting all export sectors, as well as tourism and immigration, when they resume.

Lawyer Quentin Davies gave marine farmers some insights into the National Environmental Standards for Marine Aquaculture coming into force in December, alongside the notification of the aquaculture provisions of the

new Marlborough Environment Plan. Davies says the creation of Aquaculture Management Areas in the Sounds "will give certainty to the community and to industry".

The conference and awards dinner were the first events held at the new QCYC premises, with volunteers and junior sailing crews turning into waiters and caterers. Profits from hosting the event will go towards the club hiring a professional coach to mentor up and coming sailors. Association general manager Ned Wells said the organisation was pleased to support the club's fund-raising efforts. "The venue was the perfect place to hold a conference centred around the ocean and the club did a fantastic job hosting the event".

Kevin Oldham won the Donaghys Outstanding Marine Farmer Award. Marine Farmers president Jonathan Large said Oldham's expertise in risk management helps all marine farmers, including through the Covid lockdown. "He also drives MFA strategy sessions and is constantly looking for ways the industry can improve their practices through research and development."

Golden Bay's Darren Clarke and his family won the MFA Merit Award for their relentless dedication, particularly to protecting the environment of the top of the South.

Clarke is the MFA's environmental mentor and he and his wife Jackie are sometimes up at 4am to brief mussel boat crews about the importance of not letting debris go over the sides and other requirements. The family collect floats which have come off marine farms across Golden Bay, have removed tonnes of debris (mostly not aquaculture related) from Rabbit Island near Nelson and spent hours bagging Sounds rubbish for collection. Many a fishing trip with the family or mates have seen the fishing put on hold for beach clean-ups.

Blenheim's Aiden Gane started working in marine farming on leaving school at 17. Earlier this year he gained his skippers ticket and now at 19 has a crew working under him.

"The day his ticket came through he grabbed hold



Brendon Burns is chair of the Smart+Connected Aquaculture steering group.

of the wheel and hasn't let go yet, even with the boss onboard," said MFA vice-president Gary Brown in announcing Gane as the winner of Aquaculture Direct's Recent Entrant Award.

Vaughan Ellis won MacLab's Environmental Award for the key role he played in getting funding and support for a three-year research project on the restoration of mussel beds on the seabed in Pelorus Sound. While in its early stages the project has already attracted television coverage at home and abroad and early-stage success suggests it may provide a blueprint for other restoration projects in other areas.

The Research and Development Award, sponsored by mussel farmers Tohora Nui Ltd was won by James Aitken from NZ King Salmon who is working at Cawthron Institute on a project to determine optimal feed conversion ratios for king salmon to achieve economic and environmental improvements.

A special award was given to Mark Gillard who this year resigned from NZ King Salmon after being involved with the company since 1985. Jonathan



Ned Wells presenting Darren Clarke with the MFA Merit Award.

Large says Gillard is regarded as "the father of the salmon industry" in New Zealand and had contributed enormously to its growth and success.



The Donaghys Outstanding Marine Farmer award was awarded to Kevin Oldham (right), whose expertise in risk management helps marine farmers, particularly through lockdown.

Technology, innovation and communities the keys to aquaculture's future

Brendon Burns

Access to good data and using Artificial Intelligence are now seen as keys to the future of aquaculture, alongside innovation and good community engagement.

These were the themes emerging from the fourth Smart+Connected Aquaculture forum held in Havelock in late November. More than 50 attendees - mostly marine scientists, marine farmers, Marlborough District Council and Government agency representatives – attended the now annual forum.

Five keynote speakers kicked off workshops which developed several projects which the Smart+Connected Aquaculture group will now support. Past forums have sparked a new mussel spat hatchery research programme, seen industry cooperation to recycle mussel floats, and blue mussels turned into products rather than being sent to landfill.

NZ King Salmon's general manager of brands and sustainability Jemma McCowan led off saying aquaculture companies had to be brave in opening their doors and demystifying what actually happens on marine farms. Her workshop developed the idea of Ocean-I – outward-facing cameras placed on industry vessels and farms to show seafood connoisseurs around the world in real-time the wonderful locations where farms are based and the seafood they produce. McCowan will work with others to support a project seeking to develop the technology.

Sanford's general manager of innovation Andrew Stanley told the forum that every other primary sector was using Artificial Intelligence (or super-computing). Marine farmers' challenge was they could not step out and see their species growing. "We can't see what's going on under the water." He says marine farmers need to become data-rich using tools such as predictive modelling to make the industry more productive.

Marlborough Harbourmaster Luke Grogan introduced a presentation on tidal mapping of the Sounds saying four ships had grounded in Tory Channel in the last 15 years. Dr Peter McComb of Ocean Numerical is now measuring the complex and strong flows of water into

and out of Queen Charlotte Sound, which alongside council's multi-beam mapping of the Sounds is reducing grounding risks.

Council coastal scientist Oliver Wade says with Pelorus Sound now mapped, council wants to collaborate with the aquaculture industry to use its data for a range of benefits, including assisting safer vessel movements and understanding the seafloor around farms.

Cawthron Institute's Dr Norman Ragg, a scientist working on climate change, says while a range of



Chair of the Smart+Connected Aquaculture Value + Innovation group Zane Charman says the ideas that resulted from the forum were outstanding.

agencies were generating data there was no easy way to upload, collate and share information which existed. "You've often got to go out there with your own thermometer."

Andrea Strang, who has been involved with mussel spat monitoring in Golden and Tasman bays for 15 years, says Artificial Intelligence could help with tools emerging which can sample spat size, health and mussel species.

The Smart+Connected Aquaculture group will bring together a meeting this month of all stakeholders to begin a data collection and collation HEAD group – Harnessing Environmental & Aquaculture Data.

Marlborough Sounds oyster grower Aaron Pannell who is now exporting his revolutionary FlipFarm technology to 10 countries, says all innovation takes time and was not always successful at first. FlipFarm was the fifth oyster farming system he had developed. Research was not linear – there was no "Eureka" moment – it was more like a spider's web where many different ideas are connected and each has to be worked through.

Pannell's workshop group has asked Aquaculture NZ to lead the creation of an Aquaculture Innovation Support Hub, starting with a website that can link people with a good idea to contacts and advice on issues such as sources of funding, exporting and

intellectual property protection.

AQNZ and the Marine Farming Association will also be involved in developing another idea emerging from the Havelock forum – a hub in Marlborough for reducing plastic waste in the sector.

Plant and Food's Dr Susan Marshall told the forum that the "aquaceuticals" sector is growing fast with the world looking for natural products that worked and were safe. The biggest challenge was a lack of processing facilities. MBIE's Endeavour Fund has recently granted \$16.28m to Plant & Food to help develop more green manufacturing for marine co-products.

Smart+Connected Aquaculture's Value + Innovation group chair Zane Charman says the range of ideas emerging from this year's forum was outstanding.

"We bring together all those with an interest in good science assisting great outcomes for the aquaculture sector and this forum has again seen the willingness to progress those ideas. Marlborough, the wider top of the South and all of New Zealand benefit from these forums and I'm proud to have been involved."

With a successful forum concluded, Charman announced he will step down as Value+Innovation group chair to focus on project work with NZ King Salmon as well as his own work in aquaculture which includes research on developing a second spat hatchery – an idea which emerged at last year's Havelock forum.

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King's Fish Market an Invercargill institution

Tim Pankhurst



The King family has been synonymous with seafood in Southland for nigh on a century.

Geraldine-born patriarch William David Flemington King, grandfather of current King's Fish Market managing director Greg King, opened the family's first fish shop in Matura in the 1920s.

Today the business operates from a small factory and fish 'n' chip shop in Invercargill's Ythan Street, having been through many variations as markets and demand changed across the generations.

It is still very much a family business – Greg's brother Stephen is the factory manager, sister Barbara is office manager and their mother Jeanne sits in on directors' meetings.

It has grown from that first venture when Grandfather William hawked fish from a horse and cart and later a Model T Ford.

His wife Margaret was entrepreneurial too and ran a successful restaurant when the couple moved to Gore in 1928.

William and his brother moved into fishing off the

Catlins coast but the vessels were lost in a storm.

William was an early conservationist, leading pest eradication on the mutton bird islands and helping build Forest & Bird lodges. A 600-ha reserve in the Catlins is named after him.

In the 1940s the family opened a seafood restaurant in Invercargill's Tay St, proudly boasting Southland's first electric cooking vat.

Its success allowed expansion into oyster and crayfish processing and sale and commissioning of *Glenifer*, a boat built in Tasmania.

Cray tails were sent to New York in 20lb wooden boxes and wet fish to Australia.

The focus also shifted to the meat business, driven by Greg's father Bill and his Uncle Charlie.

On day one with a staff of four they processed two-and-a-half lambs.

Expansion was rapid – to 100,000 lambs a year at the peak and a staff of 80.

Then followed beef cuts – 1000 carcasses a year – and wild pork to the US, venison to Germany, smallgoods



Greg King at the family fish shop.

including seven tonnes of sausages a week and a contract to supply the Manapouri West Arm power project workers. The company was the first to vacuum pack meat cuts for export.

Products were branded The Peak of Perfection, the logo featuring Mitre Peak designed in King's restaurant by Charlie and colleague C S Stevens over a feed of oysters and a bottle of whisky.

But by 1968 the business had got so big it was decided to sell to Wilson Meats Ltd of Chicago.

There was also a supermarket – King's Foodland – opened in 1962 and the popular King's restaurant, since sold and closed.

Trawl fish, crayfish and paua had continued to be processed during this time and seafood has been the

prime business since.

Two other fishing vessels joined the company – Kotare (Kingfisher) and Kereru and in 1971 Greg's father Bill, who died four years ago, took over the business.

Bluff oysters were a mainstay, 4050 sacks in one season – 243,000 dozen.

The fish shop opened in 1982 and two years later was under a metre of water as the town flooded.

The bonamia parasite devastated oyster beds and the family realised diversification was again called for.

That drove the purchase of 42 tonnes of blue cod quota, down to 26 tonnes under present catch reductions, plus the lease of more fish.

Twenty years ago, the family bought a German smokehouse from the Alliance freezing company to hot and cold smoke fish and also opened the current fish 'n' chip shop, which contributes about 20 percent of the business.

Salmon, sourced from Sanford's Big Glory Bay farms on Stewart Island, is now a major component.

Smoked, using beech sawdust, and fresh products are sold to supermarkets throughout the South Island.

There are other value-added products too, including fish chowder.

No trip to the Deep South is complete without a taste of blue cod and King's offer sensational value.

A fillet of cod – grilled, battered or crumbed with lemon pepper, cajun or garlic and herb dressing – with half a scoop of chips and coleslaw is just \$10.

Or you can have a blue cod burger for \$10.90

Or another southern delicacy, more of an acquired taste, is a grilled muttonbird (\$23.80).

A whitebait fritter sandwich is \$10 and there is even a blue cod breakfast, including egg and chips, for \$10.

Frozen fish is cheap too – \$20 a kilo for orange roughy and snapper.

When told the price is two-and-a-half times that at the Auckland fish market, shop worker Merlene Thompson laughs and says: "Aren't we lucky to live here."

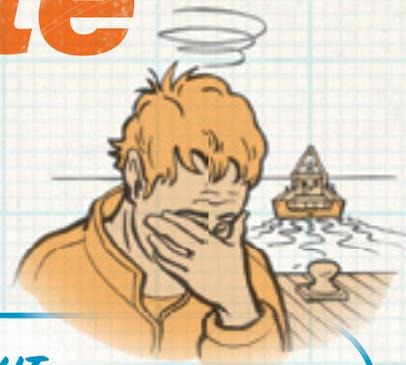


Merlene Thompson (left) and Bianca Tait serving up blue cod, the Deep South specialty.



Early days – the fish delivery vehicle in Gore.

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Doug Saunders-Loder



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

We are obviously a couple of months into the year, but I take the opportunity of wishing you all a Happy New Year and trust that you all got to spend some quality family time during Christmas and in seeing in the year 2021.

Covid-19 has clearly changed many of our lives

and having family in other countries makes this time of year very challenging. However, to think that in most cases we could enjoy a summer that included sunshine, surf, concerts, cricket and continuous hospitality, we appear to be better placed than many in the world and for that we should be thankful.

Clearly there are fears as to how the new variant of Covid-19 might affect us in New Zealand but I'm hoping the vigilance and seriousness that we have shown with it so far will remain and we can continue operating as we have since the earliest presence here, this time last year.

Of course, fishing is our business, and we need to be thankful that through the most of last year we could continue to operate and keep our heads above water. Regarded an essential service, the initial hits we had with shaping our businesses (to accommodate social distancing and the use of PPE) were then amplified by market impacts based on what was happening in other countries around the world. Initial concerns have eased in some places but our reliance on food service in places like Australia and the US take a serious hit when they have closed their businesses down too. China of course plays a big part in this respect but all in all, everyone is working as well as they can to maintain productivity and supply.

At this time of the year, we always see albacore tuna move into the EEZ and early signs for the troll fleet are that we might be in for a very good season. This will be

great because it is one of the last 'open access' fisheries that fishermen can enter relatively cheaply and as long as the fish are about it takes any pressure off other fisheries whilst also providing a good injection of capital. There were signs of fish late November, early December, but the numbers started to pick up closer to and after Christmas. Starting in the north there were a number of boats that landed into Onehunga during December but as traditionally happens, the fish move south and fishermen from all around the country flock to the West Coast to enjoy the bounty. Fish are being caught today from Raglan to Westport and as the numbers of boats increase, so will be the opportunity to find the fish. Water temperatures are high and fish are being caught so let's hope that continues on well into the New Year.

I touched on the MarineSAFE initiative in my last report and I just want to reiterate that during the break all of the resources that we put together were circulated and were available for your use. We will now seek feedback. Remember, this has been developed for you and your crew and has been designed so that it can be easily found. The content is interesting, has an end-game (quiz questions based on videos watched) and recognises completion of them. Please take the time to investigate further if you haven't already and take advantage of this excellent initiative. All of these resources are made available to you at no cost.

Email info@marinesafe.nz for any further information.

Just a footnote; I have received a number of enquiries from fishermen expressing concern at the cost of replacing or even inspecting life-rafts. I know the circumstances differ depending on where you may be in New Zealand but it appears that the costs associated with what has always been a necessity, are simply becoming too tough. Please contact me with any comments you have regarding this or any other operational matter that concerns you. Federation has a close relationship with MNZ and will present any concerns you have in this respect.

All the best for the year ahead and let's hope we continue seeing improvements in our daily lives. Stabilised markets, healthy fisheries and continued catches.

Sinking no deterrent to Matt's lifetime of fishing

Bill Moore



Matt Hardyment

As a young fisherman Matt Hardyment was involved in one of the New Zealand industry's most dramatic sinkings, surviving nearly 40 perilous hours in a liferaft with six companions. Nearly four decades later he's still going strong – but facing an uncertain future

as an inshore Danish-seiner.

Hardyment, 61, grew up in Nelson and developed his taste for fishing along the Tasman Bay coastline, using the family bach at Kaiteriteri as his base, going out with a hook and a line every day. At 13 he was crewing part-time on Greg Heald's scallop boat *Wairau*.

"His crewman was always inebriated at the weekend and I used to get shanghaied."

His schooling ended at 15 – "as soon as I could get out of there" – his lifelong career beginning straight away, scalloping and set-netting with Neil Harvey on *Weemay*. Later came *Conquest*, and then pair-trawling for snapper on *Stargazer*.

As a 19-year-old he stepped up to the 36-metre *Hawea*, built in Korea for Skeggs Foods Ltd, before a three-year-stint in Australia, fishing out of Lakes Entrance in Victoria.

In late 1983 it was back to Nelson and *Hawea*, but not for long. At the end of June 1984, the big trawler suddenly sank in heavy night-time seas off the West Coast of the South Island, near Kahurangi Point.

Hardyment was on watch at the time, the only crew member not in his bunk.

It was blowing a 40-knot northerly at the time, he said, when he noticed the stern of the boat riding very low in the water.

"I got the skipper up straight away. It was only about three minutes before she rolled over on her side and went down."

There was just time to get everyone into the wheelhouse and launch the life raft, with Hardyment trying to make a Mayday call amid scenes he said were something like those in the *Titanic* movie.

"When the windows start bursting in, it's a bit freaky. I had to climb up the side of the cupboards to get out the wheelhouse door."

The worst moment was when the sinking boat began to drag the life raft under, but then the painter line snapped, as it was supposed to. After that it was nearly 40 hours in the raft, "the coldest I've ever been in my life".

It was only after the boat had missed its morning and night radio schedules that concern arose ashore, with skipper Roy Aloff's wife Pam, the local marine radio operator, raising the alarm.

The crew were picked up by Andy Smith on the Sealord boat *Shemara* after Smith went against official advice and followed his own instincts to determine where to search. Instead of winning plaudits as he should have, Smith was later criticised by officialdom, Hardyment said.

It wasn't a hard decision to return to fishing after that, he said. "What else was I going to do? I'd only ever done fishing. I was back on the small boats again within a couple of weeks, working with Mark Roach on the *Starlight*."

However, it was soon back to Skeggs, working on the *Resolution II*, which had been lengthened to 27 metres after beaching on the West Coast the same night *Hawea* was lost. This was another dramatic episode with the five-man crew winched one-by-one from the pitching wheelhouse by Takaka helicopter pilot Bob McElhinney after the boat was swept through a narrow channel into Nguroa Bay north of Whanganui Inlet.

Studying for his marine tickets during these years, Hardyment became *Resolution II* skipper and held that job for two years before joining the *Wanaka*, sister ship to *Hawea*.

He said he "jumped around quite a lot" during that period, also working for a time on the first of the big trawlers brought to New Zealand, Sealord's *Boston Seafire*.

With his job at Skeggs given to someone else while he was completing his deepsea skipper's ticket, Hardyment

then shifted to Nelson company Donker Marine, first skippering *Recovery II* for six years and later *Tasman Viking*. He stayed with that boat when Donker sold it to Craig Boote in 2002, continuing for eight more years. These were deepwater years catching orange roughy, alfonsino and hoki, mainly off the North Island's east coast.

In 2005, Hardymont had bought his own boat, the 12-metre *Kiwi*, leaving *Tasman Viking* in 2009 to go Danish seining, a lesser-known fishing method that he likes.

Once there were five Danish seiners operating out of Port Nelson. Like other forms of inshore fishing, it has shrunk. Now there are two.

Instead of trawling a net for an extended time, a Danish seiner pays out a very long rope in a diamond shape with the net a nautical mile (1.852km) from the boat. The boat then stays still or moves ahead very slowly, with the gear being wound back to it rather than dragged behind it. Hardymont said this method was widely used in New Zealand in the 1950s and '60s.

"It's environmentally friendly. The thing that impressed me was that when you catch a fish, it's always going to be alive – the fish just get gathered up by the rope and won't go into the net until the last 15 to 20 minutes of the tow."

It is also much more fuel-efficient, using less than a third than an equivalent inshore trawler.

Flounder are the target species, with gurnard, John dory, rig and a few snapper also being taken. The flounder are exported to Australia through Donna Wells' Nelson company Finestkind, the other fish going to Aquafresh, another Nelson company.

Hardymont usually fishes alone and counts 100kgs of flounder as a good day's work, tying up by 5pm.

"I like being my own boss for a change – although I'm not so sure now, as I'm getting older it's a lot of hard work."

"It's environmentally friendly. The thing that impressed me was that when you catch a fish, it's always going to be alive."

– Matt Hardymont

For the last six years he and his wife Denise have lived in Charleston, south of Westport, with *Kiwi* remaining Nelson-based, and he intersperses his Danish seining with chasing tuna off the West Coast.

Hardymont has been a Federation member for 16 years and is currently president of the Port Nelson Fishermen's Association.

He said the Federation was essential to fight the fishermen's battles with the Government and its agencies, and was doing a good job under the leadership of president Doug Saunders-Loder.

It was disappointing when fishermen didn't join and support the Federation, he said. These were the same people who complained that nobody was helping them.

Hardymont sees a hard future for inshore fishermen, facing uninformed opposition from the Greens, inshore pollution mainly caused by forestry sediment runoff flushed from the land, and the scourge of methamphetamine limiting availability of suitable crew.

The loss of Tasman Bay's sandy bottom had ended the scallop fishery and was also now badly impacting fish species, especially flounder, with no solution in sight. "I don't know how mud turns back to sand." Better forestry management was essential and urgent, he said.

P was a huge problem for all New Zealand's primary industries, with users of that drug especially dangerous to fishermen. "You don't want to take one of them out to sea, they'll throw you over the side. They're crazy."



A young Matt Hardymont with a bluefin tuna aboard *Hawea*, a trawler that later sank underneath him.



A big bag of orange roughy caught off Napier. "There was twice as much in the water."



Aged 21 with a school shark during his Australia stint.

FACES OF THE FEDERATION



With a bass aboard *Resolution II*.

Recalling a legendary incident when a senior MPI staffer – since retired – was intentionally locked in a freezer at the Chatham Islands, Hardyment said relations between the government department, now Fisheries NZ, and the fishermen had never been good, while politicians favoured “greenies” over fishermen.

“Politics is just a load of bullshit,” Hardyment said. “They trade us off to fix something else. The Government

There would always be good money in high-value species like crayfish and paua which could be taken without bycatch, he said.

“But the Government’s never been able to get its head around multi-species fishing like inshore fishing, and they still can’t.”

needs to listen to us fishermen, especially the old, experienced ones. We do know about fish.”

He disagrees with the endlessly repeated claim that New Zealand’s quota management system is the best in the world, arguing that Australia has much better-managed multi-species fishery, with more emphasis on detailed reporting than using a punitive deemed value system.

“They listen to the fishermen more. You only have to go to Lakes Entrance now and walk up and down the wharf. It’s all beautiful flash boats – not the old bloody dungery things that we’ve got here.”

Despite these issues, he intends to carry on at least until he reaches retirement age.

“You can still make a living out of it. I just work for myself, because I’ve got my own little quota package, but anybody new coming in is going to really struggle ... it’s very hard now that most of the quota has gone to the big companies, because they can dictate your prices.”

What keeps him going? Hardyment laughs: “Always hoping things are going to get better.”

And in proof that the lure of fishing never leaves when it gets in the blood, he said that while he doesn’t hire crew these days, “a couple of old fishermen that have retired occasionally come out with me for a day’s fishing”.



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Moves to combat discharges into the marine environment



In 2019 the New Zealand Government made the decision to adopt MARPOL Annex VI, which is an important part of the IMO's (International Maritime Organization) Marine Pollution Convention.

Annex VI addresses the impact of air pollution from shipping activities on human health and greenhouse gas emissions from shipping on the climate. It has already been implemented across much of the world, meaning those New Zealand flagged vessels that travel to overseas ports already have to comply with Annex VI.

Maritime NZ is developing Marine Protection Rules to implement Annex VI in New Zealand. The Rules will specify exactly how Annex VI will be applied in the NZ context including how Annex VI requirements will be incorporated into a number of Maritime NZ functions including certification and vessel inspections.

A project team has been set up within Maritime NZ to lead the rules development, consultation and implementation of Annex VI. Some of the rules (for example, rules relating to diesel engines) will apply to

some fishing vessels and the team will be consulting further with the industry to inform Maritime NZ's approach.

Alison Barrett, acting manager for Maritime NZ's Policy team says, "MARPOL Annex VI once implemented, will ensure that the New Zealand shipping industry is playing its part in reducing air pollution. We have been engaging with the maritime industry since September 2020, with formal consultation on the draft Marine Protection Rules planned for the middle of this year. We are currently considering a number of policy options, especially in relation to how the Rules will apply to domestic shipping, and we are keen for operators within New Zealand to provide us with their views."

Maritime NZ is working closely with the Ministry of Transport, who are considering what amendments to the Maritime Transport Act and Regulations may be required to put Annex VI into effect. Similarly, the Ministry for the Environment are considering

NEWS

how Annex VI impacts the legislation on regulating discharges into the marine environment, including options for the regulation of ship 'scrubbers' in coastal areas.

Barrett adds, "Implementing MARPOL Annex VI will require action on the part of New Zealand's commercial fleet, ports, and government agencies, including Maritime NZ. We need to ensure that everyone is prepared for the Rules coming into effect in early 2022."

Annex VI brings in regulations that will address:

- Ozone depleting substances
- Nitrogen oxides
- Sulphur oxides
- Energy efficiency
- Volatile organic substances
- Incinerators
- Fuel composition and quality
- Port reception facilities needed for handling the related waste from ships

Key requirements to be implemented under MARPOL Annex VI include a limit of 0.5 percent sulphur content in fuels, and energy efficiency requirements to reduce greenhouse gas emissions from larger ships. There will be controls on ozone-depleting substances like refrigerants, and volatile organic compounds for oil tankers.

Controls on nitrogen oxide will also be put in place for marine diesel engines with output of 130 kilowatts or more on vessels built on or after 1 January 2000, or for engines that have undergone significant upgrades since that date. Shipboard incinerators installed after 1 January 2000 must be certified and have trained personnel to operate them. There will also be controls on fuel composition and quality and requirements for port facilities that can cater for ship emission waste.

"Having MARPOL Annex VI in place by early 2022 will bring us in line with many other countries around the world who already have it running," says Barrett. "In the meantime, we encourage anyone who would like to find out more to check out the information on the Maritime NZ website or to contact us on our email address: MARPOLAnnexVIProject@maritimenz.govt.nz."

Information is available on the Maritime NZ website at Maritimenz.govt.nz, under the Commercial/rules content.



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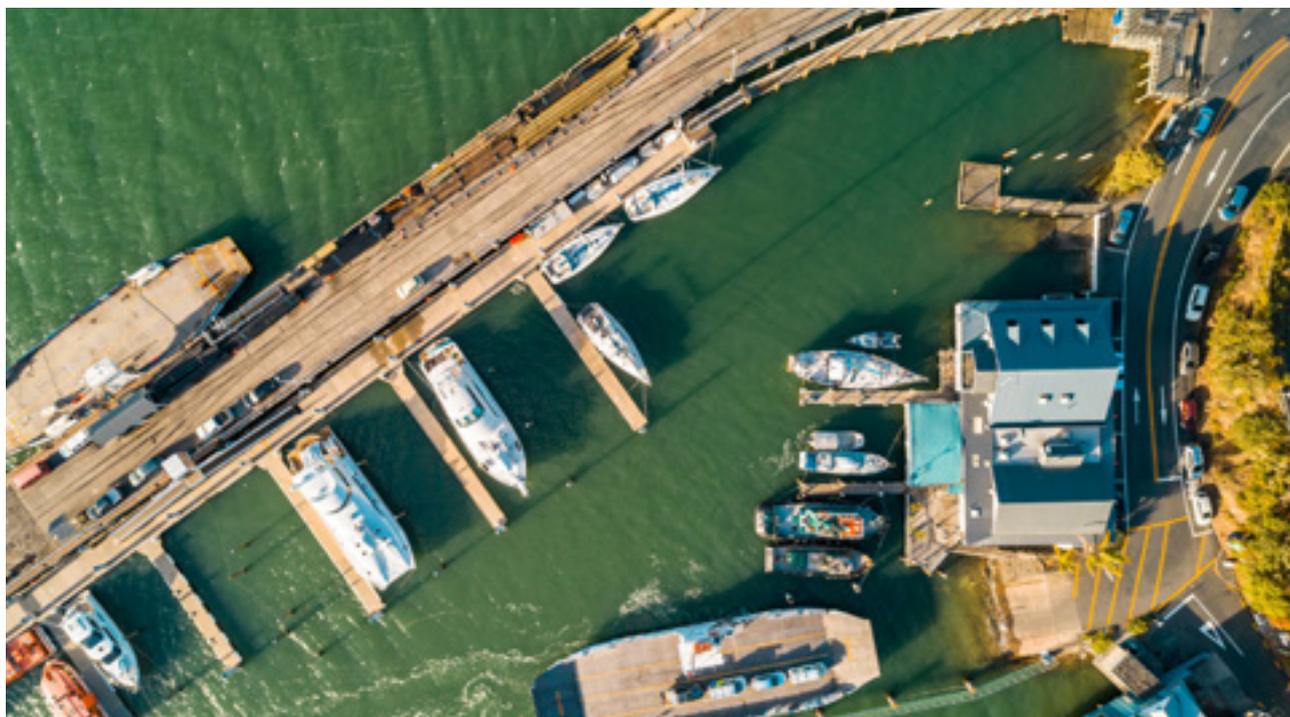
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Navigating marine certification



Seafaring qualifications are hard won. Former deepsea skipper CHRIS CAREY reviews their status. There is good news on the recognition of time at sea.

As with many of my peers in the fishing industry who went back to school and gained an STCW Certificate of Competency (CoC) to work in the offshore oil and gas field, who now find themselves back in the deep-water fishing industry due to the downturn in exploration, the issue of gaining 'approved sea service' for revalidation whilst serving on a fishing vessel is problematic. Or has been.

The Articles of the Convention on the International Regulations for Preventing Collisions at Sea 1972, or our version of them, the New Zealand Maritime Rules Part 22: Collision Prevention, clearly state:

*(d). The term "vessel engaged in fishing" means any vessel fishing with nets, lines, trawls or other fishing apparatus **which restrict manoeuvrability**, but does not include a vessel fishing with trolling lines or other fishing apparatus which do not restrict manoeuvrability.*

The COLREGs are quite clear; it is only the ability, or lack thereof, to manoeuvre that is taken into account. When not hampered by the nature of her work thus

restricted in her ability to manoeuvre, she must behave as any vessel propelled by machinery; a 'Power Driven Vessel'.

Furthermore, the COLREGs do not include under the description of 'Fishing Vessel', any 'vessel fishing with trolling lines or other fishing apparatus which **do not restrict manoeuvrability**'. Thus, whether catching fish or not, she is described as a 'Power Driven Vessel' and must comply with the Rules when required to keep out of the way of another vessel.

The International Convention on Standards of Training Certification and Watchkeeping for Seafarers (STCW) Article II – Definitions, paragraph (h), describes a 'Fishing Vessel' as a 'vessel used for catching fish, whales, seals, walrus or other living resources of the sea.'

While Article III – Application, states the Convention does not apply to seafarers serving on fishing vessels, Annex 2, Section B-III – Guidance, quite clearly states fishing vessels when **not engaged in the catching activity, cannot enjoy such exclusion!** In other words, under the STCW Convention, while not engaged in the catching activity, your sea-service must therefore count as 'approved sea service.'

The Convention also does not specifically state that seafarers must have 'non-fishing sea service', rather that they have 'approved seagoing service' meeting the

FEATURE



Chris Carey ashore at Lyttelton.

requirements of section A-II/1 of the STCW Code.

While there are no specific requirements regarding the size or propulsion power of the ships you are serving on, Section B-I/9 of the STCW

Convention states you can gain approved seagoing service on any type of ship as long as your duties on board are relevant for the CoC being applied for.

One of the key principles embraced by the review of NZ Maritime Rule Part 32 known as SeaCert, was to align with international standards to enable portability of certificates.

NZ Maritime Rule Part 32.2 (Qualifications) – Definitions, describes sea service as ‘service on board a ship relevant to the certificate, prescribed endorsement or ancillary proficiency for which the sea service is required.’

With the introduction of electronic reporting it must be possible to deduct actual fishing time from the total trip time to come up with a quantifiable fist-full of ‘non-fishing sea service’ or ‘approved seagoing service’ given that every fishing vessel must steam to and from the fishing grounds, often for several days if the ‘hot spot’ is far-distant, and a lot of time spent searching, dodging and generally idling around.

I approached Maritime New Zealand and was pleasantly surprised with their response.

What do MNZ take into consideration when approving sea service?

Our rules outline what we must take into consideration when we approve sea service which must be relevant to the CoC being renewed, in terms of the type and size of vessel, the area of operation, the duties that were performed and the level of responsibility they were performed to.

Will MNZ approve sea service obtained on a fishing vessel to renew an STCW certificate (or vice versa)?

MNZ acknowledge there is a natural crossover of competencies when working on different types of vessels, depending on the specific role and duties of the seafarer and area of operation. For example, was all of the sea service obtained on a fishing vessel or combination of vessel types? Because of this, MNZ will assess each case based on the applicants’ circumstances and if there are any questions relating to the sea service, we will always go back to the seafarer and ask for clarification.

Can MNZ assess my sea service before I make an application?

Yes, although to do this a seafarer will need to fill out the application form for a sea service pre-assessment and send in evidence of sea service. There is no fee for this assessment.

If my sea service isn’t accepted, what recourse do I have? I don’t want to lose my STCW CoC.

There are options for a seafarer who doesn’t have enough relevant sea service to revalidate their certificate. For example, if the person has been working ashore, MNZ can accept 30 months of ‘equivalent’ shore-based experience. As well as catching fish, many Skippers and Mates are heavily involved with vessel management, the design and implementation of the MOSS system, firefighting, GMDSS and lifesaving surveys, dry dockings, crewing and a plethora of H&S processes. However, experience this would need to be assessed to ensure it met the requirements. Alternatively, seafarers can take an oral exam to renew their certificate.

Who can I contact at MNZ about this?

Seafarers are encouraged to contact the Certification Team by emailing seafarers@maritimenz.govt.nz or calling them on 0508 723 237.

I worked hard for my Watchkeeper Deck; it cost a lot of money and I’d like to keep it. That Maritime New Zealand is willing to look at each individual case to find a workable solution around approved sea time, is a welcome relief. I sincerely thank Emma Widdrington of MNZ for taking the time to hear me out and for providing the answers to my questions.

Former deepsea skipper Chris Carey is the fleet compliance manager for Independent Fisheries Ltd.



The all-important paperwork.

Protecting the Antarctic toothfish fishery

Dan Bolger



While the effects of the Covid-19 pandemic are less immediately visible in New Zealand than in some other countries, its effects on the economy, and particularly export markets, will continue to ripple out for some time yet.

During the 2020 lockdown, fishing and aquaculture were identified as essential services and allowed to continue. But the pandemic brought volatility to prices and volumes throughout the year. This trend is expected to continue into 2021 as food service closures challenging freight logistics, and lower consumer spending all contribute to uncertainty.

Because of all these factors, MPI's latest forecasts, from December's Situation and Outlook report for primary industries, predict seafood export revenue to be down by 1.4 percent to \$1.8 billion for the year ending June 2021.

These challenges are unprecedented, but the energy and innovation we see throughout the seafood industry is a good indication they are by no means unsurmountable.

I'd like to highlight some recent work in the Commission for the Conservation of Antarctic Marine Living Resources, or CCAMLR.

CCAMLR was established in the early 1980s as part of the Antarctic Treaty system, to protect the Southern Ocean ecosystem. CCAMLR now has 26 members, including New Zealand which was a founding member. Its objective is the conservation of Antarctic marine living resources. Among its list of activities is ecosystem based management of living resources in the Southern Ocean, which includes precautionary management of the fisheries.

Robust fish stock assessments, based on the best



Dan Bolger

available science, are critical to ensuring the conservation of these stocks and the wider Southern Ocean ecosystem. New Zealand has been at the forefront of these efforts in the Ross Sea, leading the biennial toothfish stock

assessment and undertaking the annual Ross Sea shelf Survey. This survey, which is designed and led out of New Zealand, is now in its 10th consecutive year and allows scientists and fisheries managers to track how many juvenile toothfish are coming into the fishery.

This gives New Zealand, and the other member countries of CCAMLR, the early warning necessary to make good management decisions and to set precautionary catch limits. These continuing efforts by New Zealand have made a significant contribution to the effective management of the Ross Sea toothfish fishery, which has been internationally recognised as sustainable through the Marine Stewardship Council certification.

This year's Ross Sea shelf survey is being undertaken by Sanford's *San Aotea II*. It's a real team effort and Sanford should be congratulated for its part in facilitating this work. I'd like to also acknowledge the good work of Fisheries New Zealand's science and observer teams, and MPI's international fisheries management team, who all went above and beyond to make sure the survey happened this year, despite some Covid-related restrictions.

Due to travel restrictions to Antarctica, NIWA was unable to deploy a scientist on the trip who would normally be responsible for collecting the necessary data and for ensuring the survey was being conducted according to the CCAMLR approved research plan.

So, our teams thought outside the box and arranged for one of our fisheries observers to be trained as a research scientist so the survey could go ahead. The survey will contribute to the valuable time series of data that will continue to inform the decision making of CCAMLR for the Ross Sea toothfish fishery.

We've also recently provided some support for our CCAMLR partners who have faced Covid challenges, contributing to New Zealand's reputation of rising to the occasion to help others out in times of need.

This has involved allowing two of our observers to travel with Australian fishing vessels which were not able to secure independent international observers - a requirement to operate in Southern Ocean fisheries.

Last year, one of our New Zealand observers who departed on a New Zealand vessel couldn't return home from a trip because of Covid travel restrictions. Instead he ended up on a UK flagged vessel operating near the Falkland Islands/Islas Malvinas working as an international observer which enabled the vessel to operate in the fishery. What began as a seven-week trip on a New Zealand vessel ended up being a seven-month trip on multiple vessels involving travel halfway around the world.

I'd hope you've all had an excellent break from what was a challenging year, and I look forward to working alongside the seafood industry and everyone involved with our oceans with the kind of flexibility and innovation needed to continue to succeed in 2021.

Dan Bolger is deputy director general of Fisheries New Zealand.



Cyber-marine: 100 percent utilisation, maximised value

Dr Susan Marshall

A world-leading team of chemists, biochemists, engineers, computer scientists and seafood industry staff have come together for Plant & Food's five-year, \$16.8 million research programme.

Funded through the Ministry of Business, Innovation and Employment's Endeavour Scheme, the programme is aiming to change how New Zealanders utilise non-fillet bioresources by developing new multi-purpose marine product factories controlled by artificial intelligence (AI).

Its official name; 'Cyber-physical seafood systems: Intelligent and optimised green manufacturing for marine co-products'... we call it Cyber-Marine.

The enormous diversity of harvested animals from our aquaculture and fisheries provides a great variety of seafood but it also contains a complex range of molecules that varies across species, between sexes, by age, reproductive status and time of year.

Many of these molecules have special properties making them commercially valuable as biomaterials, cosmetics, dietary supplements and functional foods.

They range from big structural proteins for biomedical scaffolds, through to anti-inflammatory omega-3s, and blood pressure-lowering or anti-ageing peptides.

Bioactive and functional molecules are often found in by-products and by-catch, creating the means to grow our seafood industry without affecting seafood availability, or needing more fish to be caught.

The challenge is how to design processes and multi-purpose equipment to extract them all from very different marine organisms that contain different types and combinations of the molecules.

This is not possible with current technology.

Today's processing usually focusses on one or two products with the rest going to waste or low-value rendering.

Cyber-Marine aims to create new technology that is multi-purpose, economical, uses environmentally friendly processes with low emissions and the biggest challenge, doesn't destroy one component while recovering another. Our goal is to make by-products and by-catch more valuable than fillet and to make rendering a choice rather than the only choice.

We need flexible factories capable of optimally

processing raw materials, matching products to market demand.

Right now, we can assess composition using traditional chemical testing, but this takes a long time. For our responsive factory, we need analysis and interpretation of extremely complex data in real time. In Cyber-Marine we plan to develop new AI-integrated sensor systems able to tell us immediately what's in any raw material, then use this information to direct factory operations.

In addition to new sensor systems, these flexible factories require development of a suite of integrated switchable, low-energy extraction technologies (some of them new), that use the differences in properties of molecules to sequentially separate the components.

Cyber-Marine is a collaboration between the Marine Products Group at Plant & Food Research, Research, Technical Services at Callaghan Innovation, the School of Engineering and Computer Science at Victoria University, the Chemistry Department at Otago University, and continues a longstanding relationship with the Biotechnology Group at Deakin University, Geelong, Australia.

It provides an opportunity to link NZ research with complementary programmes at Nofima in Norway.



Plant & Food's Dr Susan Marshall

Significant industry support will see staff exchanges into laboratories and factories, making sure this challenging project delivers excellent science and technology, whilst staying relevant to our sector.

Dr Susan Marshall is Plant & Food's science group leader, with expertise in marine product processing and seafood technologies.

Seafood events Feb to Jun, 2021

- 6 Feb** **Kawhia Kai Festival**
 Omimiti Reserve, Kawhia Harbour; 9am – 5pm
- 20 Feb** **Ruapehu Local Wild Food Challenge**
 Raetihi Showgrounds, Parapara Road; 9:30am – 4pm
- 27 Feb** **Twizel Salmon & Wine Festival**
 200 Freda du Faur Avenue, Twizel; 11am – 5pm
- 6-14 Mar** **Seaweeek**
 Nationwide event, various locations.
- 8-14 Mar** **Moana Food Feast (seafood)**
 Takapuna Beach, Auckland; 3pm – 9pm
- 13 Mar** **Havelock Mussel and Seafood Festival**
 Havelock Domain; 10am – 6pm
- 13 Mar** **Wildfoods Festival**
 Cass Square, Hokitika; 11am – 6pm
- 2 May** **World Tuna Day**
- 22 May** **Bluff Oyster and Food Festival**
 85 Barrow Street, Bluff; 10:30am
- 3-4 Jun** **NZ Federation of Commercial Fishermen
 conference and Shipwreck Trust fish 'n'
 chip auction**
 Distinction Hotel, Liverpool Street, Dunedin
- 7 Jun** **World Food Safety Day**
- 8 Jun** **World Oceans Day**
- 19 Jun** **World Albatross Day**
- 25 Jun** **International Day of the Seafarer**



King salmon poke bowl



Serves 4

Ingredients

1 ½ cups medium-grain white rice
 1 tbsp rice wine vinegar
 2 tbsp soy sauce
 1 tsp sweet Thai chili sauce
 2 tsp sesame oil
 1 tsp sesame seeds, toasted
 2cm piece of ginger, peeled and minced
 300g fresh boneless king salmon fillets, skin removed and cut into 2cm pieces
 ½ cup shredded red cabbage
 ½ cup shredded green cabbage
 1 tbsp sesame oil
 4 tbsp Japanese mayonnaise

1 avocado, sliced
 ½ medium cucumber, thinly sliced
 ½ cup shelled edamame beans, blanched
 Salt and pepper to taste
 Toasted nori and sesame seeds to serve

Method

In a large pot, add 3 cups of water to the rice and half a teaspoon of salt. Bring to the boil. Reduce the heat to low, place the lid on top and cook for a further 15 minutes or until the water has absorbed. Remove from

heat and let the rice stand, covered, for 5 minutes. Fluff up using a fork.

Place the vinegar, soy sauce, chili sauce, sesame oil, sesame seeds and ginger in a bowl. Mix well. Add the salmon and gently stir until completely coated.

Place the shredded cabbage and sesame oil in a bowl and mix until well combined. Season. In each bowl, place a large spoonful of rice, add the slaw and squeeze over the mayonnaise. Top with the salmon, avocado, cucumber slices and edamame beans. Garnish with the toasted shredded nori and toasted sesame seeds.

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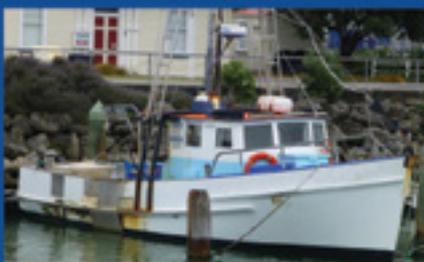
5232 LONG LINER or
TROLLER. BFG Autoline
L19m x B 6.4m x D 2.75m
30t hold . Cummins KT19
Perkins genset
Good accommodation
Comprehensive electronic
Offshore survey May 2025
A BIG 19M VESSEL
\$500,000



5225 TUNA TROLLER,
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L16.48m x B4.8m x D2.7m
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5224 DEEP SEA LINER
L21.8m x B6.7m x D3.0m
Caterpillar D353 425hp
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54kVA gen. 65 ton hold
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7,000 hooks
Good electronics
Offshore survey May 2024
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5216 TUNA TROLLER
POTTING. L 12.3m x B 3.9m
Doosan L136 new 2013
Fuel 12800 litres. Hydraulic
pot hauler. Tuna poles
4 Tonnes ice hold
4 berths. Toilet/Shower.
Hot water. Galley gas stove
Survey Coastal 15 Aug 2024
\$110,000



5215 TUNA TROLLER,
POTTER or DROP LINE
L2.24m x B3.85m x D1.8m
Caterpillar 3208 253hp
6200hrs since rebuild
3 tonnes ice hold
Pot hauler/ Luff hauler
Coastal Survey Expiry
September 2024
\$110,000



5209 ALLOY MILLMAN
L 15.32m x B3.8m x D1.5m
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