

SEAFOOD

NEW ZEALAND

April 2023 | Volume 31 | No. 02 | Issue 279

Seafood symposium highlights fish as the perfect protein

TK's legacy - passing the knowledge on

New Mayor's maritime vision for Nelson



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EDITORIALS

Published by Seafood New Zealand Ltd.

Postal Address:

PO Box 297
Wellington 6140
New Zealand

Physical Address:

Level 12, 7WQ
7 Waterloo Quay, Pipitea
Wellington 6011
Phone: +64 (0)4 385 4005
www.seafood.co.nz



Editorial enquiries:

Email: editor@seafood.org.nz

Advertising enquiries:

Karen Oliver
Phone: +64 (0)4 802 1513
advertising@seafood.org.nz

Subscriptions:

Seafood New Zealand is published for the New Zealand seafood industry. It is also available on subscription in New Zealand and overseas. Subscription rates are available on request. Seafood New Zealand is produced bi-monthly (six issues per annum).

Your Say:

Contributions of a nature relevant to the seafood industry are welcomed and industry participants are encouraged to contribute. Letters to the Editor should be signed and carry the writers' full names and addresses.

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editor@seafood.org.nz

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ISSN 1172-4633 (Print)
ISSN 2538-0834 (Online)



From the Chief Executive

Our cover feature this issue marks a collaborative step forward in recognising that seafood should be the protein of choice for those who care about the environment.

Tim Pankhurst reports on a symposium held in Wellington that argued that seafood, from an economic, scientific, and environmental aspect, is the perfect protein and trawling has an undeserved reputation.

International academic Professor Ray Hilborn was keynote speaker at the one-day symposium in Wellington, which was attended by experts in the fishing, science, government agencies, media, and indigenous sectors, as well as NGO, The Nature Conservancy.

Seafood NZ GM Deepwater Aaron Irving said the aim of the symposium was to celebrate seafood production, by highlighting science that demonstrates that fishing produced food in a highly sustainable way, arguably more so than many other forms of food production. "We are simply saying this is the science and it shows that fishing is a good thing," he said. "Rather than being disparaged, seafood production in New Zealand should be celebrated."

Invitations were extended to various environmental groups, but only The Nature Conservancy chose to attend and contribute.

Hilborn noted that all food production had environmental consequences, however the past 20 years in fisheries management has focussed on ensuring fisheries are being sustainably managed and he says the industry has made enormous progress. He says detractors had now switched their argument to "is the environmental impact acceptable?"

The cover feature references a paper due to be published rebutting a study that claimed trawling released more carbon than global air travel, which Hilborn said was "preposterous". The paper to be published in the scientific journal Nature authored by Prof Jan Hiddink from Bangor University in the UK estimated the impact had been overstated by 1000 times.

A review of 49 studies comparing organic carbon structures and seafloor sediment disturbed by commercial trawling in trawled and untrawled areas found no significant difference in 61 percent of the areas. In 29 percent of the areas there was less, and in 10 percent of the areas there was more carbon in the sediments. "There is no evidence that trawling results in lowering organic carbon in sediments overall," Hilborn said.

Asked why he thought fisheries got such a bad rap, he said disaster stories are much more appealing to the media and used as an example the New York Times reporting on its front page a claim that the world's commercial fish stocks would be exhausted by 2048. Three years later when extensive studies debunked the claim, this news only made page 18.

The cover feature is not the only good read in the April issue.

We catch up with Tony Walker, a Kiwi fisherman well known for his advocacy on behalf of the industry in New Zealand, and who now fishes out of Queensland and is continuing his mission to hold the industry up as a great place to work and a sustainable, healthy food source.

Myth busters is back this month. This time we tackle the misconceptions around the value of Marine Protected Areas and we investigate progress on Nelson's port redevelopment and have a chat to new Mayor Nick Smith who has grand plans for Nelson's maritime sector.

Enjoy the April issue, and happy fishing.

Dr Jeremy Helson
Chief Executive

Amalgamation focuses on better industry outcomes

Following a governance review, on 1 February 2023 the seafood industry officially amalgamated three bodies that formerly represented different sectors of the seafood industry: Seafood New Zealand, Deepwater Group, and Fisheries Inshore New Zealand.

The amalgamation will allow for greater efficiency and effectiveness by streamlining work processes; creating a unified and coherent voice for the industry; and creating a modern and fit-for-purpose governance structure.

Pāua Industry Council and New Zealand Rock Lobster Industry Council will remain separate entities and will continue to work collaboratively with the newly formed Seafood New Zealand, particularly on policy issues.

A process is currently underway to recruit an independent Chair, and a new smaller Board has been appointed as follows: Andre Gargiulo, Steve Tarrant, Laws Lawson, Lisa te Heuheu, Tony Hazlett, Geoff Burgess, Tom Birdsall, and Colin Williams.



Seafood New Zealand director
Andre Gargiulo.

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TK's legacy - passing the knowledge on



TK heading off to sea in Mooloolaba.

Tony Walker is a bit of a Kiwi legend, not just in New Zealand, but in Australia where he skips a tuna long liner *Sharpshooter 11*. Lesley Hamilton tracked him down to Queensland.

Walker's social media game is something of a phenomenon and TK, as he prefers to be called, is using it to promote commercial fishing on a grand scale.

The TK Offshore Fishing brand has more than 268,000 followers on Facebook, 160,000 subscribers to his videos on YouTube, and another 3300 followers on Instagram.

Walker is a third-generation commercial fisherman from Whangamatā - a proud Ngāti Porou lad who has been fishing for 35 years.

He is out fishing when we catch up.

"Beautiful day up in the Coral Sea, five knots of wind forecast and cobalt blue seas this morning," Walker reports.

This trip he has three Filipino, one Dane, one Indonesian, and an Aussie crewing for him.

"They're spoilt little buggers," he says. "I am their coffee bitch. I have ground bean coffee upstairs and while the boys are hauling, I am baking them Betty Crocker chocolate cakes, blueberry muffins, and making bloody coffee. Only takes two minutes and the smile on their faces is priceless."

Walker has always felt a responsibility to educate people on commercial fishing. In New Zealand he was a one-man voice at recreational fishing events to dispel myths about the sustainability of commercial fishing and build a bridge between the reccies and commercial fishermen. That work is being continued in Australia and worldwide through his regular social media posts to large audiences.

He says it is not just educating people, but passing



TK passing on his knowledge.

on the knowledge that he, and other old timers hold to younger fishers coming through.

"Young people in Australia and New Zealand are encouraged to do trade apprenticeships. The only way forward would be to create a similar apprenticeship-based system for masters. There is the opportunity for young people who want to experience this amazing lifestyle to earn the big dollars. Most young people who try their hand at deck work don't hang around because they don't see a future in it. There is no pathway currently for them to accelerate their future.

"Walker Seafoods in Mooloolaba, where I work, is one of the few companies over here in Australia to offer young deckhands training and financial assistance to get their skippers and engineering qualifications. As far as I know there is no government incentive for them or anyone else to do this. If there was an incentive to do this from Government, other companies would help create the future skills to carry on the industry."

Walker (no relation to Walker Seafoods) skippers the company's 24-metre catamaran targeting tuna. Walker Seafoods is Marine Stewardship Council (MSC) certified in the Eastern Tuna and Billfish fishery (ETBF).

"That appealed to me. I prefer working in MSC fisheries where the world's best fishing practices in sustainable fishing techniques are standard operating procedure."

Walker is an

Ambassador for Tuna Champions, an Australian Government led initiative to educate recreational fishers on best practice for catching, handling and cooking or successfully releasing Southern Bluefin, Yellowfin, or longtail tuna.

"I work closely with Tuna Australia performing gear trials, tori line development for seabird conservation, and other projects and support Marine Stewardship Council Australia by providing content for their social media and promoting sustainable fishing over my various social media platforms."

He is now upping his educational game.

"I intend to use my knowledge and experience to improve the industry that has served me well for so long. This will include educational content across the industry on our website as well as raising awareness and knowledge of sustainable practices to the public and bridging the gap between the recreational and commercial sectors.

"With a push on education and awareness I believe there's opportunity to switch more skilled young marine professionals onto the commercial path. It's great to see the engagement from these guys through my social media channels and I intend to encourage the next generation of commercial fishermen."

Walker's family have not relocated to Australia, maintaining the family home in Bay of Plenty and now that the borders are open, he comes and goes as frequently as he can.

"I miss the family, but the move has been very successful, skippering a purpose built vessel with great well trained, mostly international crew has made the transition easy and it's a very healthy well managed fishery. Mooloolaba is a vibrant successful port and the local fishers have been very welcoming. The tropical weather is a welcome bonus and certainly eases my aches and pains and I can come home whenever I want a break."



The face of experience.



Tuna caught with MSC certified sustainability.

He says pressure on the industry from environmental NGOs and reccie fishers is not as intense in Australia.

"With the advent of The Statutory Fishing Rights (SFRs) there is actually very little pushback from NGOs or the recreational sector in Australia. All Government committees have representation from these and other stakeholders. The ETBF is considered sustainable by law under the *Environmental Protection Biodiversity Conservation Act* (EPBC Act). The recreational and NGO sectors are generally pleased by the regulations on the ETBF including electronic monitoring (EM) which requires several full-time cameras on all vessels."

Walker continues to spread the commercial fishing gospel to recreational fishers.



The crew of *Sharpshooter* heading out into another sunrise.

"I have speaking engagements at various game fishing clubs sharing offshore fishing and electronics advice and sharing fishing and meteorological information on local fishing conditions on my social media platforms which has been very well received by Australian recreational fishers. I enjoy the same trust and respect here in Australia as I do at home with New Zealand's recreational fishers."

Walker says the challenges to commercial fishing are similar on both sides of the Tasman.

"Just like New Zealand, we are battling incredibly high operating costs, irregular access to international airfreight, and crew recruitment in a challenging labour market."

He says the number of experienced fishers leaving the industry is a problem in Australia and New Zealand.

"This is a huge concern to the whole industry with very few young crew progressing to skipper. The issue of skilled operators departing the fisheries in Australia was exacerbated by the mining boom in the nineties. Many of the skippers left for fly-in fly-out jobs on barges and tugs. Australia now imports skilled fishermen from Indonesia and the Philippines under a visa system like New Zealand.

"Without experienced skippers we don't have a fishery. As the older fishers exit the industry, they are taking their knowledge with them without passing it on to the next generation as we did in the owner/operator days when the knowledge was passed from father to son."

Walker says knowledge on harvesting, fish biology and habits, migration and local history is irreplaceable and leaves the next generation at a serious disadvantage.

"I recall as a young fisher attending all the Federation meetings and conferences where Taffy Martin and Peter Stevens ran through the current issues of the day, I often think, in many ways it seems not much has changed, we still have much the same challenges in today's world.

"While we now have healthy sustainable fisheries, without fishers to harvest our seafood we will be tying our boats up.

"We need to continue educating the public on the advances the industry has made. We have a lot to celebrate but fail to capitalise on these successes and continue to suffer a bad public image.

"The clear trend over my various media platforms is that the public know very little about our industry or our advances in stock management and sustainable harvesting.

"We need to address this."

TK is passionate about his advocacy work and one day he hopes to be in a position where he can step back from fishing fulltime and do more of it.

"I can see myself touring the ports promoting sustainable fisheries and careers in the industry."

New Mayor's maritime vision for Nelson

New Nelson Mayor, Nick Smith is in his dream job. After decades advocating for the people of Nelson as their local MP in and out of Government, his full attention is now on the city he has called home for 34 years, as Lesley Hamilton reports.

Smith has hit the ground running, despite little currently being 'business as usual'.

The new Mayor inherited the damage from the August 2022 storm, one of the worst natural disasters Nelson City Council has had to deal with in its almost 150 years of existence. It is estimated the council alone will face a bill of \$40-\$60 million to repair the infrastructure. While Smith says the council hopes to claim some of that back from insurers and central government, ratepayers will probably still be up for around \$35 million.

With a global recession looming and the cost of living already hitting households hard, Smith says setting rates in these circumstances is 'the job from hell'.

However, although the city is fully prepared to address core business first, the new Mayor has not let that get in the way of his long-term vision for Nelson.

And that vision is about everything maritime.

Nelson is the largest fishing port in Australasia with the satellite businesses that support that fleet contributing to an already strong maritime-based economy.

But Smith's vision goes further.

He wants to see the city even more well known for its blue economy, and a hub of both commercial and recreational pursuits on the water.

Nelson proudly celebrates its maritime past. The Seafarers Memorial Trust is a powerful bronze statue on the waterfront honouring those who lost their lives

at sea and sits on the Sunderland Memorial Pier, which was constructed just for the memorial.

The names of those who arrived in the province by ship as early as 1842 are also remembered. The sailing ship *Fifeshire* carried the first of many, and an Early Settlers statue on Wakefield Quay commemorates the pioneers.



Nelson Mayor Nick Smith.



The Seafarers' Memorial remembers those who have lost their lives at sea.

Smith says his vision goes further.

"My vision for Nelson is extending our already strong maritime credentials. From Lord Nelson, who is one of the great mariners all the way through to today where we are proud to be home to New Zealand's largest fishing port. We have more men and women working in the seafood industry than any other part of New Zealand.

"The Cawthron Institute is unique in being scientifically independent, but also being focused on the marine sciences from both an ecological and economic point of view. We also have a huge range of specialist businesses that support our fishing fleet and our maritime industries. Whether they are maritime lawyers, marine engineers, whether they provide nets or provedoring services, there is a network of services that are at the heart of Nelson's marine economy. I want to see that strength further capitalised on by having them work more closely together and by stretching the opportunities that they provide for Nelson in both employment and economic growth."

Smith's vision extends into the area of recreation and the environment.

"I have just established within council a specific Marine and Tāhunanui Sports Facilities Taskforce – be it sea kayaking, waka ama, sailing, or surf lifesaving because again I want to capitalise on Nelson's connection with the sea.

"People may not see the connection between sea sports and the seafood industry but, in fact, it is through that connection with the water, such as sailing that



Steve Sullivan, managing director of Aimex.

people develop the love of the sea that encourages them to contribute to maritime industries.

"I love the way Nelson owns its marine heritage, whether it be the seafood festival or the Blessing of the Fishing Fleet. Every one of those adds colour and uniqueness to Nelson and we need to drive that even further, whether it be arts or sports, or our culture, I want all of that to be screaming 'Nelson is New Zealand's seafood capital'."

And Smith is doing his part; "look I am just addicted to seafood. Be it King Salmon from where my wife works as a commercial business partner, to snapper, blue cod, mussels, or oysters, I can't get enough."

Smith points to the new state-of-the-art Sydney Fish Market which is currently under construction and says you have to ask yourself what else can Nelson do, given the size of the seafood industry and the many other maritime attributes it has.

And the businesses at Port Nelson and beyond are right behind Smith capitalising on the region's marine spaces.

Even before Smith was Mayor, major plans for a redevelopment at the port were underway under former Mayor and cheerleader for the maritime industry, Rachel Reese.

Marine engineering company Aimex got the ball rolling on a new slipway but the project soon became so big, Port Nelson has joined the project with further funding from central and local government.

The primary funders of the nearly \$20 million project are Port Nelson and central government, which is contributing \$9.8 million through a mixture of equity, grant and debt, from the Covid19 Response and Recovery Fund. Kānoa - Regional Economic Development & Investment Unit administers the government's contribution. Supporting funders are Aimex Ltd and Nelson City Council.

The plans will see the smaller slipway of the two current ones replaced with a vessel hoist marine facility that will raise vessels via a 550t capacity travel lift.

Steve Sullivan, managing director of marine engineering company Aimex, says it will be a gamechanger.

"At the moment they have the main slipway, which has a capacity of 2500 tonnes, but the problem is we will tie up that slipway for a boat that may be 300 tonnes, so it stops us being able to get another refit in," Sullivan says.

"We went to government and local government and told them our existing slipway, the smaller one of 120 tonnes, was past its use by date. Even the inshore boats are not 100 tonnes anymore, they are 300 tonnes, so we are losing out on work we could bring to Nelson because of it.

"While we get most of the work we bid for, we don't even bid for work if we know the slip is not available or too small and so we are probably missing out on another 40 percent on top of what we get,"

Sullivan says in order for the project to go ahead, a large amount of land had to be purchased and some businesses bought out, so Port Nelson stepped in.

Hugh Morrison, chief executive at Port Nelson, says the larger of the port's two slipways, Calwell, will continue to be maintained, with the other area at Nelson slipway developed to allow a new marine hoist facility to operate.

"Until now, the Calwell Slipway has been over-utilised by taking vessels that were too large for the smaller Nelson slipway but nowhere near the capacity of the Calwell operation," he says.

The project has two key components; firstly, removing contaminated marine silt from both the existing Calwell Slipway and the new marine hoist facility harbour bed, this



The Early Settlers commemorates those who arrived by ship to settle Nelson.

FEATURE

material being stabilised and used as fill in the new facility, and secondly the construction of new wharves, hardstand, environment treatment and utilities, for the new vessel hoist facility.

The capital works surrounding the new lift will cost \$16 million and will be a positive opportunity for the local construction market.

The key driver for the project is to support the growth of the outstanding marine services industry that Nelson has. This will be achieved by increasing the capacity of the facilities in the critical 200t to 500t area, while still allowing larger vessels up to 2500t to be serviced.

In addition, the modernised facilities will help promote the currency of the industry. Also important is the improved environmental aspects of the project, including the removal of contamination from the harbour floor and improved treatment of contaminations from vessel maintenance operations.

Morrison says there are reservations from some vessel owners around using the marine travel lift.

"Some of the smaller vessels are timber and they are a bit uncomfortable around travel lifts so there is an education process to go through."

He says that stems from issues with previous lifts.

"Tauranga was one of the earlier ports to have a travel

lift and there was some early commentary around the strop 'squeezing the vessel', so when they put the vessel back in the water, because it had been somewhat pressured, it had some gaps between the planks. Those issues have been addressed through improved design of the lift strops. "

Morrison says, despite that, there are some operators that still do not think the travel lift is for them.

"We are hoping we can still talk with these people and talk about options. Even if we explore some type of cradle for the smaller vessels and lifting the entire cradle and the vessel, there is a way around these problems."

Morrison says they are interested in building a Nelson marine service cluster so they can help each other win work for the region.

"Obviously the companies are competitive, but there is a benefit in keeping us all financially healthy, so people choose to come here knowing we have the critical mass to do what they require. On-going dialogue with the larger fishing operators, Sealord, Sanford and the Talleys is important to find areas that the slip and hoist facilities can assist them"

The order for the travel lift has been placed with a 12 month build and deliver timeframe. Civil works will commence on site from June 2023 and be completed early 2024.



Hugh Morrison, chief executive at Port Nelson.

Join Women in Seafood Australasia



and support the interests of seafood women

Women in Seafood Australasia (WISA) is a network inclusive of those who support furthering the interests, positioning and opportunities for women in the seafood industry. From women working on the boats, in farms and factories, post-harvest and processing, leading innovation or research, new ventures, management, or government and policy making, WISA welcomes members across the entire supply chain. WISA also welcomes men and non-binary members who align with our vision and mission.

What WISA do

WISA's aim is to shift cultural and systemic barriers that prevent women from reaching their full potential.

Networking

WISA is a unique network. We believe that building genuine connections builds resilience. Through networking activities and communications, WISA provides visibility and support to seafood women and, disseminates relevant information to our members and the wider industry.

Increasing capacity and capabilities

WISA takes a practical, evidence-based, grassroots approach to the professional development of women and raising the profile of women involved in the seafood industry, with experiential and interactive learning at its heart.

Shifting culture

WISA aims to create a more inclusive industry that values, supports and listens to women. This starts through open conversation at all levels of industry. WISA believes that a more inclusive and diverse industry improves the working conditions, performance and wellbeing of all.

Become a WISA member today

WISA welcome New Zealanders to join our network. It is easy to become a member, and memberships cost AUD\$66 annually. Visit our website at www.womeninseafood.org.au/get-involved/membership for more information.

WISA would love to grow our network in New Zealand.

Membership to WISA is open to everyone engaged in the Seafood Industry in Australia, New Zealand and neighbouring islands of the Pacific.

To find out more about WISA visit our website at www.womeninseafood.org.au or follow us on social media @WomenInSeafoodAU.



Women in Seafood Australasia

Young Fish for new fish



Young Fish New Zealand founding member Ben Pierce.

Young Fish New Zealand is a new group seeking to connect young people working throughout all aspects of Aotearoa's seafood industry including fishing, marine farming, seafood processing, marketing, and science.

Founded by young industry members Maegen Blom, Ben Pierce, and Josh Wyber, the concept was pitched to over 500 industry leaders at last year's Aquaculture New Zealand conference and has since gained close to 100 members.

Young Fish have already hit the road, holding its first South Island meeting on the eve of last weekend's Twizel's Salmon and Wine Festival. Around 25 young people working in local industry attended the meeting held at Twizel's Mow Bar to connect, share a beer, and listen to industry speakers. This was followed by a networking event on March 10 at Mills Bay Mussels, prior to the Havelock Mussel and Seafood Festival.

Founding member Pierce was in Twizel to welcome the 'new fish' and discussed the importance of providing opportunities for young people working in the industry to connect, especially in remote areas.

"If we want to build a stronger and more resilient industry, we need to retain our talented young people," says Pierce.

"Providing opportunities like this one for our young people to connect is key to keeping them in the industry."

Mount Cook Alpine Salmon's Rick Ramsey spoke about the exciting opportunities available to young people coming into the industry.

"Our young people are the ones coming up with the new ideas which will help grow and sustain the industry," says Ramsey.

"They are the new breed of innovators."

Daniel Edmonds, Seafood Sector Manager for Primary ITOs was also on hand to talk about two new programmes on offer to people wanting to gain an industry qualification.

"The next Young Fish networking event will be 13 April at the Sanford and Sons Fish Market in Auckland, from 5pm."

Become a member

Under 35 and keen to meet likeminded people who are passionate about a future in NZ's Seafood Industry? Whether you are already part of the industry, looking for career opportunities or just interested in our sector, you're eligible to join Young Fish NZ to stay in the loop: <https://www.youngfish.co.nz/>

New chair for Sealord board

Sealord Group Limited has selected Jamie Tuuta as the company's new board chair, effective from 1 April 2023, replacing current Sealord chairman Whaimutu Dewes, who retired on 31 March.

Dewes of Ngāti Porou and Ngati Rangitihi descent, is a former chair of Moana New Zealand and deputy chair of Sealord from 1992 to 2008. He has served in a number of seafood related roles, including the first 10 years on the Treaty of Waitangi Fisheries Commission and has been chair of Sealord since 2016.

Moana board chair and Sealord director Rachel Taulelei says the board would like to acknowledge Dewes' more than 30 years of service to Sealord and the wider iwi fisheries sector.

"Whaimutu is part of the bedrock of Māori fisheries and has provided unquestionably strong guidance, leadership, and commercial acumen during his time in fisheries governance," Taulelei says. "I have no doubt we will continue to have Whaimutu's support as we continue his legacy."

"Ehara taku toa i te toa takitahi, ko taku toa te toa takitini," Dewes says.



Whaimutu Dewes.

"It is a privilege to serve on the board of Sealord. As with all service, that comes with challenges and the rewards that meeting the challenges provide.

"All success is derived by working together and I am confident that Sealord will continue to provide sound leadership in each and all of the areas that have an interface with our communities."



Jamie Tuuta.

Tuuta, of Ngāti Mutunga, Ngāti Tama, Ngāti Maru, Te Ati Awa, Taranaki Tūturu descent, is an experienced director with deep commercial and governance experience across various industries and sectors. Currently chair of Māori Television and Tourism New Zealand and a director of Moana New Zealand and a number of other boards, Tuuta is committed to the broader iwi commercial landscape and is passionate about iwi success in the fisheries space. He was formerly chair of Te Ohu Kaimoana for nine years until 2020.



Seafood symposium highlight

To nurture the marine coastal ecosystem, look to the land and climate. That was one of many messages in a compelling seafood symposium featuring science, economic and indigenous experts, as Tim Pankhurst reports.



s fish as the perfect protein



Fish is a sustainable protein.

Fish is the perfect protein.

That is not just the view of leading international seafood researcher Prof Ray Hilborn.

He was surprised to have the environmental credentials of seafood confirmed by Andy Sharpless, chief executive of Oceana, a US-based NGO.

Sharpless conceded that commercial fishing does not require herbicides or pesticides, or cause soil erosion and has a lesser environmental impact than other forms of food production like beef, chicken and pork.

Hilborn heartily agrees, adding that neither does fishing pollute the air or water, dry up rivers, drain the life from the soil, markedly reduce biodiversity, or significantly add to the global warming threatening our planet.

Hilborn, based at the School of Aquatic and Fishery Sciences at the University of Washington, was the keynote speaker in a one-day public symposium hosted by the Seafood NZ's Deepwater Council in Wellington on February 16.

Seafood NZ GM Deepwater Aaron Irving said the aim of the symposium was to celebrate seafood production, by highlighting the science that demonstrates that fishing produced food in a highly sustainable way, arguably more so than many other forms of food production.

"We are simply saying this is the science and it shows that fishing is a good thing," he said. "Rather than being disparaged, seafood production in New Zealand should be celebrated."

The presentations covering environmental, science,

economic and Māori perspectives attracted 70 attendees from government agencies, industry, and media.

The desire for open dialogue saw invitations extended to various environmental groups, but only The Nature Conservancy chose to attend and contribute.

In his presentation, Irving spoke about the New Zealand Fisheries Act, noting that when it was put into effect in 1996 it was "state of the art". It continues to be considered innovative and ahead of other Acts around the world in terms of balancing utilisation and sustainability and delivering an ecosystem-approach to fisheries management (EAFM).

Irving discussed the challenges of implementing EAFM in New Zealand's deepwater fisheries, including reducing incidental interactions with marine life and the aquatic environment, and outlined the unwavering commitment of deepwater fisheries to sustainability.

"Currently we have 19 New Zealand fisheries that are certified sustainable under the comprehensive science-based Marine Stewardship Council (MSC) Fishery Standard, demonstrating that these fisheries are in the top five percent of the world's best-managed fisheries," he says.

"Only the very best managed fisheries can meet the MSC standard and maintain it for over 20 years, as is the case for our hoki fisheries."

In introducing Prof Hilborn, Toroa Strategy director Tom McClurg said he was renowned and respected for testing assumptions against data.

"This is the hallmark of a good scientist.

"Consequently, Ray has challenged more than his fair

share of assumptions and upset more than his fair share of people."

"All food production has environmental consequences," Hilborn said. "I often started a course of my environmental undergraduates by asking, what's the lowest environmental impact of food? Usually, the best answers were roadkill and picking wild berries."

"In the 1960s to 1980s advances in plant-based food production were produced from the technologies of the green revolution, with better genetics, more fertilisers and more irrigation producing high yields and more efficient harvesting."

"The green revolution has run out of steam. No more advances are being made. Almost all of the growth in food production in the last 20 years has been due to bringing more land into production and almost all of this has come from tropical forests."

He said the biggest focus of the last 20 years in fisheries management is that fisheries can be and are being sustainably managed to produce food.

"We have made enormous progress on that. Most of the anti-fishing NGOs have given up that argument. They have shifted to, is the environmental impact acceptable?"

That led to "the big bugaboo that is, trawling".

He said a study claiming that trawling released more carbon than the entire global air travel was "preposterous".

A paper to be published in the Nature scientific journal headed by Prof Jan Hiddink from Bangor University in the UK estimated the impact had been overstated by 1000 times.

A review of 49 studies comparing organic carbon structures and seafloor sediment disturbed by commercial trawling in trawled and untrawled areas found no significant difference in 61 percent of the areas. In 29 percent of the areas there was less and in 10 percent of the areas there was more carbon in the sediments.

"There is no evidence that trawling results in lowering organic carbon in sediments overall," Hilborn said.

He highlighted the impact of land-based food production drawing on a study done in the Serengeti National Park in Kenya and Tanzania in east Africa that compared the biodiversity inside the park with the farmed areas bordering it.

Tony Sinclair, a former professor at the University of British Columbia in Canada, found grasses, herbs, trees, ungulates like wildebeest and zebra, carnivores including lions and leopards that preyed on them, insects, birds and raptors all largely disappeared in farmed areas.

The only species to prosper was rats and some insects



Cawthron's Volker Kuntzsch - no future without fishing.

that became pests in the absence of birds that fed on them.

"This is about the only study comparing an intact ecosystem to a farmed ecosystem," Hilborn said.

"In contrast, a fished ecosystem in terms of structure and function is largely the same as an unfished."

"Globally, most trawling takes place on mud and sand. The species that live there are pretty robust. They come back pretty rapidly."

"On most issues, the science is on the side of the seafood industry."

He blames the oil industry for diverting adverse attention to fishing.

In 1989 the oil supertanker Exxon Valdez ran aground in Alaska, spilling 257,000 barrels of crude oil into the ocean. It was an environmental disaster of monumental proportions that polluted 2100km of coastline.

"The oil industry needed another scapegoat," Hilborn said.

Commercial fishing became their ready target.

Asked why he thought fisheries got such a bad rap, he said disaster stories are much more appealing to the media.

"For environmental NGOs, it's how they raise money. Save this, save that, they are going to disappear."

He said the New York Times reported on its front page, and the BBC in its evening news, a claim that the world's commercial fish stocks would be exhausted by 2048.

Three years later when extensive studies rebutted the claim, this news only made page 18.

"You can publish crap but no one pays attention to the rebuttals."

Hilborn said the Pew Foundation, founded on oil wealth, stepped up its environmental funding, including a grant of \$1 million a year to Daniel Pauly, the architect of the international Sea Around Us project that alleged widespread misreporting of catches.

In New Zealand's case, University of Auckland academics,



Symposium speakers (from left) Tom McClurg, Prof Ray Hilborn, Volker Kuntzsch, Dr Stewart Ledgard, and Aaron Irving in the question and answer session.

in support of the Sea Around Us project, made claims that historically the actual catch was some three times that reported. They provided no objective evidence to support their claims, purportedly based on anonymous interviews that could not be verified, and the data provided in their report do not support their conclusions, yet their press release made leading news items.

"People say I get money from the seafood industry," Hilborn said. "Yes, I do, but scientific papers are written by a whole bunch of people representing pretty well all aspects of the community."

He is critical of marine protected areas as management tools, saying all they do is shift fishing effort, and the call for the protection of 30 percent of the world's oceans by 2030.

"We don't want to protect 30 percent. We want to protect 100 percent. We want to protect it from real threats."

Dion Tuuta, Te Atiawa Trust Whakahaere (chief executive) and former Te Ohu Kaimoana head, provided a Māori perspective on an industry where iwi are increasingly influential.

He said the traditional Māori world view understood that human wellbeing is inseparable from the natural environment, whereas a Western narrative increasingly views humanity as separate from and a blight on the environment.

The Quota Management System (QMS) introduced in the mid-1980s instituted necessary controls around commercial fishing, he said.

Quoting fishing rights negotiator Sir Tipene O'Regan, Tuuta said the QMS did something rare in Aotearoa in that it blended a Treaty right with a conservation system for the outcome of sustainable use, "which is a very Māori approach to resource management".

"The QMS is now 37 years old and continues to represent kaitiakitanga (guardianship) in action at a national level. It's generally misunderstood and maligned by those who oppose commercial fishing, but it has been a tremendous

success for New Zealand in moderating unregulated fishing.

"The fisheries Settlement in 1992 set off an explosion in Māori economic and political development."

While the 58 iwi organisations that shared in the Settlement allocation, which included 50 percent of Sealord and 20 percent of all quota, broadened their economic bases, their dependence on fishing and understanding and defence of it had diminished over time and needed to be rebuilt.

Tuuta said Māori were just as susceptible to fear-based messaging as any other sector.

"People, including politicians, make decisions based on their feelings and feelings are very easily manipulated.

"Urbanisation has all too often separated Māori from understanding where our food comes from.

"Zero impact will never be possible but it has to be the goal that we aspire to. I see our commercial harvesting evolving into cultural harvesting that takes just a certain amount of fish from the sea.

"The challenge is the industry needs to come together to tell better stories."

Dr Stewart Ledgard, a principal scientist at AgResearch, backed other speakers' claims that fishing has a smaller environmental impact in terms of greenhouse gas (GHG) emissions than other forms of food production.

He shared findings, with the full report due for early release.

"A study of the carbon footprint of New Zealand's deepwater trawl fisheries shows their GHG emissions are substantially lower than for beef, sheep, milk and pork production per 100 grams of protein produced," he said.

"It certainly looks very good for the seafood sector"

Ledgard's lifecycle analysis of GHG emission contributors included fuel usage, by far the biggest factor, packaging, plastics, refrigeration, vessel construction and anti-fouling across 21 deepsea trawlers, and found that compared to other deepwater fishing vessels globally, New Zealand deepwater trawl vessels have some of the lowest greenhouse gas emissions.

Globally, food production contributes up to 30 percent of human sources of GHG emissions.

The considerable economic and social contribution of seafood to New Zealand's economy was detailed by Hugh Dixon, data manager for Business and Economic Research Ltd (BERL).

The annual value to New Zealand's economy, based on five years of commercial catch data between 2017-22,

is estimated to have been \$5.2 billion from the seafood industry and related services.

This includes \$2.2 billion annually towards gross domestic product and \$1.8 billion in annual exports (now nudging \$2 billion).

Major export destinations were China, Australia, the US and Japan. The deepwater sector delivered 44 percent of the catch value. Hoki, squid and ling were the top three. In the inshore, snapper was the major contributor followed by jack mackerel and tarakihi.

This significant economic activity is generated from a tiny fraction of the world's total catch.

The global fisheries catch in 2019 was 92.5 million tonnes, according to the United Nations Food and Agriculture Organisation. The Oceania total was 1.7 million tonnes and the New Zealand contribution to that was 0.4 million tonnes.

The sector employed 16,530 fulltime equivalent workers, with 10,060 employed directly in seafood production. The largest areas of employment were Auckland (21 percent), Canterbury (15 percent), and Nelson (10 percent).

Cawthron chief executive Volker Kuntzsch backed Hilborn's case that it was not commercial fishing that represented the greatest threat to the oceans in his presentation titled 'No Future Without Fishing'.

"Sea surface temperature changes, ocean acidification, sea level rise are the big impacts that are there now," he said. "We are suffering from massive deviations in ocean temperatures."

Flooding, including inundation of Cawthron's aquaculture park at Glenduan in Nelson last August, earthquakes that caused dramatic coastal uplift such as that at Kaikoura, sedimentation that causes big plumes of silt and contaminants in Tasman Bay and forces closure of mussel farms, and coastal hardening where harbours, roads and other infrastructure destroyed the ecology were all significant factors.

Forestry slash could be catastrophic for organisms on the sea floor, with logs and rocks grinding them like a mortar and pestle, opening the way for invasive species.

"Recreational fishing has an impact that is underestimated. Between 2017 and 2018 there were an estimated two million fishing trips. On a good day in Auckland, some 7000 to 8000 boats are fishing, spearfishing, or diving in the Hauraki Gulf.

"But recreational fishing is like the gun laws of the United States. It is our birthright."

He showed an image of a marine wind farm, the turbines rising out of the sea.

"Isn't that a fantastic invention to replace fossil fuel burning on land?

"Why would we not feel the same way towards a trawler that harvests very sustainable protein and has much less impact on the environment?"

He said trawling impacted about 2 percent of the



Dion Tuuta, Te Atiawa Trust Whakahaere (chief executive).

EEZ versus 45 percent of cultivation on land where the biodiversity loss is so much greater.

"When you drive to Blenheim you see vineyards. You don't see the change that has happened there the total loss of the native ecosystems, replaced by grapevines. You always need to look at the complete picture."

A picture of an Iowa cornfield stretching across the plains to the horizon does not convey the loss of as much as 98 percent of its former biodiversity.

Marine wind farms have hidden impacts too, with the energy running in cables back to shore creating electromagnetic fields that deter juvenile fish swarms.

He said the seafood industry needed to be more transparent and should not be afraid to highlight some things that were done wrongly, instead of hoping problems will go away.

"Yes, we have an impact. We have as much impact possibly as turbines in offshore energy wind production."

In a comment aimed at Fisheries New Zealand, Kuntzsch said the marine management system needed to be agile and holistic where water temperatures impacted species distribution.

He also urged more investment in science and innovation.

"There is a long way to go before we can reduce the impact of a trawler on the bottom, to be more specific about the species we catch, how we can utilise waste. In Iceland, 100 percent of the fish has to be utilised for value-added purposes.

"It needs government funding to bring that shift about."

The presentations generated some media coverage, notably concerning Hilborn and Kuntzsch, and predictable outrage from those fundamentally opposed to commercial fishing, regardless of the science.

The ancient wisdom that there are none so blind as those that will not see continues to play out in modern times.

A lifetime in fisheries science

Tim Pankhurst



Ray Hilborn, charting the lower environmental impact of seafood production.

Ray Hilborn, tall and lean with an unwavering eye, is the seafood industry's favourite gunslinger.

His weapons are science and logic, with a relentless approach to corraling data and evidence.

His targets are anti-commercial fishing NGOs and academics and their media followers who would lock the oceans up and deprive the world of livelihoods and a source of healthy protein.

There is little or no equivocation in Hilborn's world.

The world's oceans are not being emptied of fish; sustainable fisheries can and are being well managed; fish is the perfect protein; fishing has far less environmental impact than terrestrial farming; marine protected areas do not rebuild fish stocks.

He delivers his findings in a commanding, confident manner. There is no room for ums and ahs in Hilborn's confident delivery beneath a bristling walrus moustache.

As a professor at the School of Aquatic and Fishery Sciences at the University of Washington, Hilborn has written or co-authored around 300 scientific papers, written three books and at the age of 75 continues to supervise graduate students.

His enduring fascination with fish is on three levels. He started his academic career studying population dynamics and turned to assessing fish stocks. And he is fascinated with fish as things of beauty, wondrous in their own right. His third motivation is more practical – he loves eating fish.

His opponents skew the science, trade on unfounded fears to raise money and in some cases are duplicitous or downright stupid, he says.

"The international advocate for sustainable fishing is the Food and Agriculture Organisation of the United Nations. They represent all the countries that are members, which is pretty much all of the world. They can't talk about how any country is doing, they have to talk in bigger terms.

"Their mission is to reduce hunger and nutritional deprivation. They are saying we can and do sustainably harvest fish. Where we're not, we need to improve. I'm not the only one saying that.

"FAO is saying 30 percent of the world's fish stocks are over-exploited. That says 70 percent are not over-exploited and we need to fix those 30 percent."

He rattles through a summary of fishing nations and stocks. Norway, Iceland, Canada, the US, New Zealand and

Australia remain the top countries with well-managed stocks.

"The EU has made a lot of progress in the Atlantic, reducing their fishing pressure and seeing stocks start to rebuild. South Africa's industrial fishing has got quite a good track record. Peru is doing very well in its largest fishery, the biggest fishery in the world – the anchoveta at five million tonnes a year. Chile had a lot of overfishing but is rapidly moving to more of a science-based system.

"Japan has been seeing its catch decline considerably, as it used to rely largely on overseas fishing. It has updated its laws to mandate management by maximum sustainable yield, which it didn't have before.

"Internationally, tuna fisheries are generally doing quite well. Pacific bluefin and southern bluefin are still classified as overfished but are rebuilding. Atlantic bluefin is booming. Some of it has received Marine Stewardship Council (MSC) certification.

"Atlantic bluefin was an orange roughy-type story, advertised as a disaster of fisheries management, and it's totally turned around in the last 15 or 20 years."

On the downside, the Mediterranean is overfished "and is not a pretty picture," the Adriatic is very heavily trawled and there is a dearth of information on southeast Asia, China, Thailand, Indonesia, and India stocks.

"Fishing pressure in south and southeast Asia is enormous."

In 2012 Hilborn published *Overfishing*, the thrust of which was the world's overall fish stocks are not collapsing, as many claim or believe, and some have shown a remarkable recovery.

A decade on, he says that remains the case, although that is not the popular narrative.

"The oceans are largely unchanged by fishing," he says. "It's what the science says.

"But you don't raise money with the public by saying that, you raise money by saying the oceans are being emptied of fish."

He continues to refute that.

He and his wife Ulrike have friends on the Kapiti coast north of Wellington and holiday and work from there. He wrote both recent books there.

"I can write very fast but it's very rough and my wife over the following months turns it into more acceptable prose."

The couple is slowly working on another book, to be titled *The Environmental Cost of Dinner*, that compares the production impacts of various protein sources including beef, pork, chicken and fish, along with crops.

He says seafood production has lower environmental impacts than almost all other forms of food production as measured by greenhouse gas emissions; carbon footprints; usage of water; pesticides, herbicides and

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antibiotics; soil erosion and biodiversity loss.

He stresses that does not make him anti-farming.

In the summer of love in 1967 when the long-haired, post-war generation was revelling in free love and psychedelia in San Francisco, young Hilborn was working in the dust and heat on a Jolly Green Giant pea harvester.

Ulrike was an organic farmer selling her produce at a local market and the Hilborns' son is a dairy and crop farmer.

"We need all forms of food production," he says.

It does not bother him that he is the face on the anti-fishing NGO dartboards and is happy to retaliate.

One prominent opponent is Sylvia Earle, an ocean explorer backed by National Geographic, a long-time advocate of closing the oceans to fishing.

"I was at a World Bank workshop on the oceans with people from all over the world including the Pacific Islands, and she said they should stop eating fish, just eat more coconuts."

Hilborn's globetrotting includes spending half of each summer in Alaska studying the sockeye salmon fishery, which is thousands of years old.

"As soon as native people came to North America they started catching this abundant resource," he says.

"It's been an industrial resource since the late 19th century. This year they had 60 million fish processed in three weeks, the biggest run in recorded history. It's certainly benefitted from climate change because it's a population right on the northern edge of the range.

"At the same time, the snow crab fishery has completely collapsed. Climate change is driving everything at the moment.

"For coastal fisheries like snapper and tarakihi, the two big drivers are climate change and terrestrial impacts. It's not fishing."

He is long familiar with the New Zealand fishery, estimating he has made 50 visits here since 1985.

When Hilborn first visited New Zealand, the QMS was about to be introduced but without an understanding of the fishery.

"They did not have a science programme to say what's the trend in your fish stocks? What's the abundance?"

"John McKoy, then the director of the Greta Point lab, said we have to set an allowable catch every year and we haven't done the science to even understand how many fish there are.

"It took a long time for the Government to catch up with the science they needed to do it well. That happened in the 90s, developing the capacity to assess the stocks."

He says New Zealand has done well since in ensuring the sustainability of the resource, gaining MSC certification of all the major deepwater fisheries.

The QMS is not perfect though, in his opinion.

"There are problems. One is you get aggregation of ownership. It drifts away from the fishermen to investors or processors, or a few fishermen aggregate the quota. That is one of the unresolved issues of the New Zealand-style QMS.

"In many countries maintaining small-scale fisheries is an explicit social objective. Many of the big industrial firms that fished in Alaska are now partially or majority-owned by the local communities.

"It's not an objective in the New Zealand Fisheries Act. That makes New Zealand fisheries somewhat unique in global fisheries. The system was put in largely by economists. The economic theory is you will maximise the economic value of your fishery."

However, he sees the increasing degree of Māori ownership of the fishery as "the biggest protector from the Green movement".

He continues to take a keen interest in the New Zealand fisheries development and shows no signs of slowing down in his eighth decade.

"It's what I do. It gives my life meaning."



Farmed whitebait on the menu

Tim Pankhurst



Tonnes of farmed whitebait in store.

Ten kilos of farmed whitebait were served to celebrate the launch of an ambitious aquaculture venture at Bluff cultivating the delicacy.

At 3300 whitebait larvae per kilo, that represented 33,000 of the tiny fish.

Production will soon be in the millions as the iwi-owned Manāki Whitebait, registered to Tahu Whāoa Group Holdings Ltd, looks to grow as much as several hundred tonnes annually.

That is good news for whitebait lovers as the wild catch continues to decline, the season shortens and prices soar.

The fish grow to harvestable size in just 12 weeks,

fed on a fish pellet which has discarded prawn shells as the main ingredient.

The feed is imported from Japan, but the company is looking to develop a local sustainable byproduct, with salmon frames a possible source.

Manāki aquaculture manager Paul Decker says the market demand is huge.

"We could sell a hundred tonnes tomorrow given the amount of people who want to buy it.

"There is a helluva lot of interest from the restaurant trade, which had gone off whitebait because they believed the wild-caught product was not sustainable.



Invercargill mayor Nobby Clark sampling the product.

"The farmed product also has a shelf life that exceeds wild catch three to one.

"We kill them at 2 degrees and they stay in the cold chiller at 2 degrees. That gives a shelf life of 10 to 14 days."

He says endangered whitebait in the wild will not become extinct but commercial whitebaiters may well do so.

Whitebait is the only species not subject to a quota or a catch entitlement and the total catch is not documented.

Decker believes it is in the order of several hundred tonnes.

"It is not right to commercially harvest a species that is in decline due to habitat loss."

But he says it would be a tragedy if individuals were not able to continue whitebaiting.

He says there is another threat to whitebait, an introduced one that is not fully recognised.

"Brown trout. Kill a brown trout and save a whitebait. There is no doubt brown trout is the biggest predator of whitebait. Wherever you find brown trout, there are very few whitebait."

The company aims to ensure there will be plenty of whitebait through production of brood stock in two facilities – one at Warkworth north of Auckland and the other at the Bluff growing site.

Adults are held in freshwater, while the larvae grow in seawater, replicating the life cycle in the wild.

"The whitebait project has proven that we can scale up production," Decker says.

"We need to grow the business to produce 150 to 200 tonnes per year. In 2024 we will produce 26 tonnes which will create approximately 10 jobs with a view of growing this to 40 jobs in all areas of the production, supply chain and sales and marketing of whitebait."

As for price, Decker says not to expect whitebait to get cheaper in the short term.

The market wholesale price this season was around \$100 per kilo. It retails, often in 100gram portions, for as much as \$160 to \$200 a kilo.

Research and development costs are considerable and the price will reflect that but Decker says whitebait is the seafood equivalent of fillet steak.

"A kilo of whitebait is a kilo of product. It's not like chops where you throw away the bone, it is a filleted fish product."

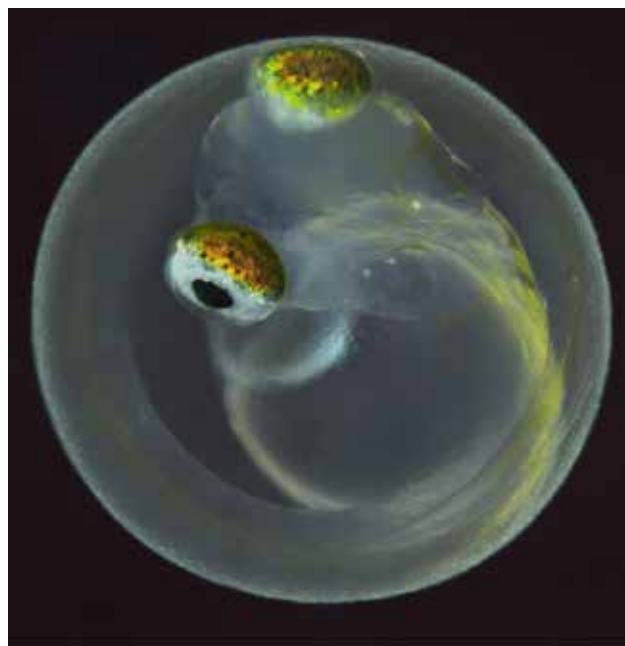
He cannot detect difference in taste between farmed and wild whitebait but says the farmed product is purged before harvest and the fish are pale with no matter in their gut.

He calls wild fish gutty bait, or blackbait.

The whitebait project is a boon for the aquaculture centre of excellence at Bluff's former, abandoned Ocean Beach meatworks where a paua farm is already established.

Invercargill and the wider Southland province face substantial employment and economic losses with the threatened closure of the Tiwai Point aluminium smelter.

Aquaculture expansion, including salmon farms and seaweed development, is seen as a partial saviour and is being enthusiastically backed by local authorities.



A whitebait embryo. Image: Stephen Moore.

Marine protected areas



Phoenix Islands Protected Area – the world's largest MPA.

Marine Protected Areas (MPAs) can be valuable tools for ocean conservation; however, they are not a cure-all, and, in some cases, they can have far ranging negative effects.

Calls to lock up 30 percent of the ocean by 2030 make a good slogan, but would doing that actually be beneficial for the environment?

MPAs come in all sizes and in various degrees of conservation. There are small or large coastal MPAs, and there are closures of very big tracts of ocean that are called Large Open Ocean MPAs, or LOOMPAS.

Let's bust some myths on MPAs.

Myth: The more open ocean you prevent any fishing in, the better for the planet.

LOOMPAS are indiscriminate closures of ocean based on square kilometres, or a percentage of the world's whole ocean area, as opposed to closures to protect specific marine life. Closing such a large area to any fishing just moves fishing to adjacent parts of the ocean that are not closed. There are no borders to keep fish in a particular area. And, by only preventing fishing, they do not address other important ocean issues such as climate change and ocean acidification.

Myth: If you close off ocean areas to fishing, it benefits fish populations inside and outside the MPA.

A 2023 paper by scientists is the latest research to show this is not the case. In the study, Hampton et al 2023, recently published in *Frontiers in Marine Science*, they look at the case of Kiribati's Phoenix Islands Protected Area (PIPA), which in 2015 banned all fishing and became the world's largest MPA, covering 408,250 square kilometres of ocean in the Southern Pacific Ocean.

Before PIPA was established, an average of 22,000 metric tonnes (MT) of skipjack and 1900 MT of bigeye tuna were caught in the area. The paper's authors have exemplary credentials in Pacific tuna and they found that the PIPA MPA did not improve the overall population of tuna, beyond a moderate increase inside and on the outskirts of the closed ocean space and offers further proof that MPAs simply move fishing pressure elsewhere, and often to more sensitive and pressured areas of the ocean.

Myth: The fishing industry is just opposed to all MPAs.

Untrue. The fishing industry globally has a vested interest in protecting the ocean, but they would prefer it was based on science. Small coastal MPAs, if well enforced, are invaluable for protecting specific marine life that may be at threat, such as corals, seagrass, and kelp, which can be damaged by fishing gear. Seagrass and kelp forests are vital in sequestering carbon.

Myth: MPAs are only effective if they ban all fishing.

Marine protection should be targeted at the specific risk using the appropriate tool. Sometimes that will be a prohibition on fishing, but other times the required management will be different to address the risk (e.g. managing sedimentation or forestry slash). There are many types of MPAs and mostly they all have their uses if they are targeted at a specific problem. Some of these MPAs only limit certain fishing methods, not ban fishing completely. For example, Benthic Protection Areas (BPAs) ban fishing within 100 metres of the seafloor. This protects the seafloor but still allows fishers to catch fish in the waters above.

The New Zealand fishing industry approached the

MYTHBUSTERS

government in 2007 to propose 17 areas of seafloor that could be protected from dredging and bottom trawling through BPAs, and the government instigated them that year. That brought the area of New Zealand's EEZ protected from bottom trawling up to 32 percent. Before that, only two percent was protected.

Myth: Banning all fishing is much better for the planet.

There are some significant impacts on small

coastal nations when all fishing is banned. The marine environment is often the only source of food and income of indigenous peoples, and despite a switch to tourism being promoted as an alternative, this is unproven to be better for revenue generation or the environment. If the problem were fishing, fishing management measures to control how much fish is taken out are a better solution.

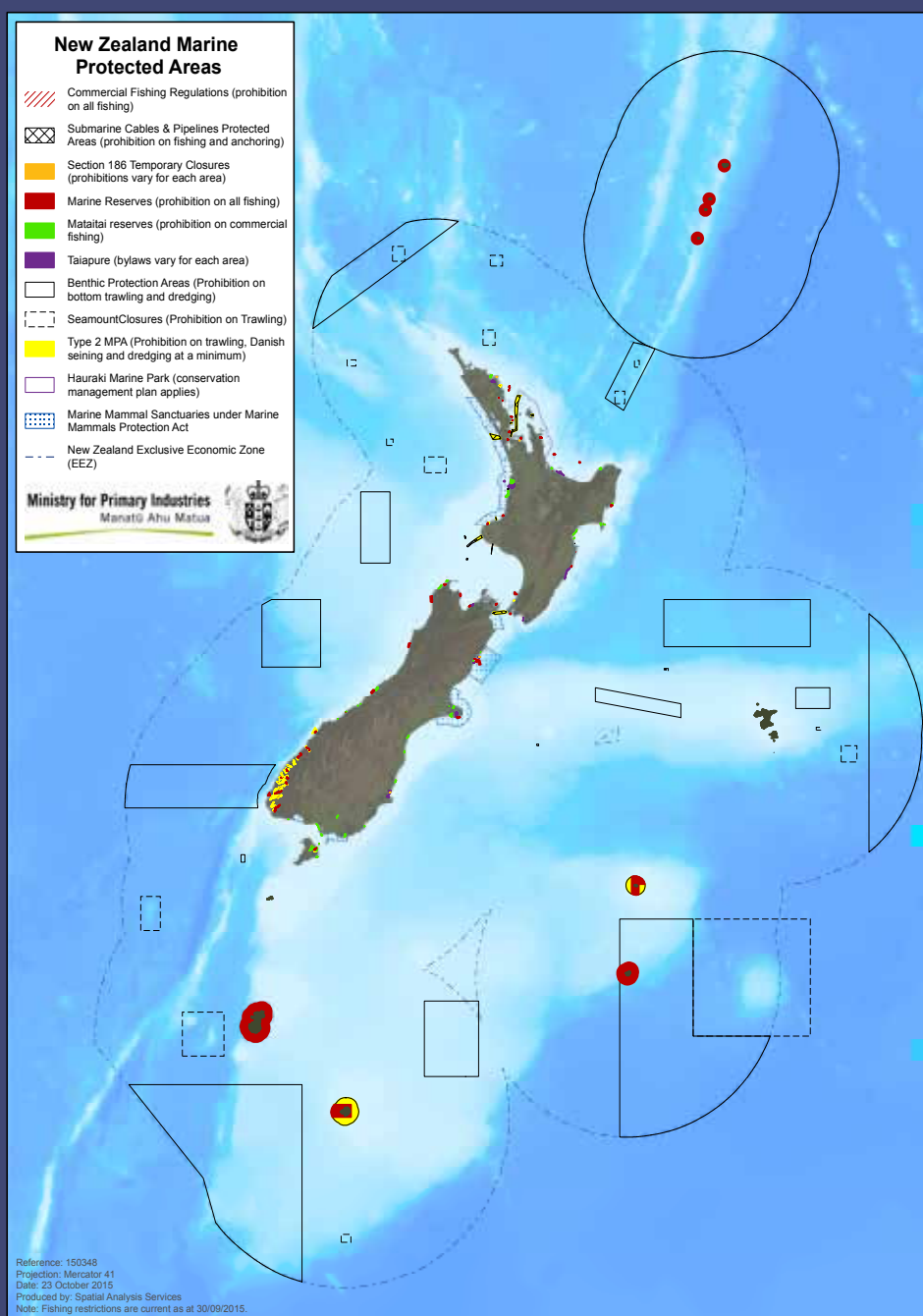
Myth: MPAs are the only way to protect the ocean.

Sometimes, MPAs are exactly the right tool, but frequently other measures are better for food production

and the planet. For example, robust fisheries management promotes healthy and sustainable fish populations. Encouraging fisheries management systems in parts of the world suffering from fish stock depletion through overfishing must be more of a priority, according to the United Nations. Sustainable fishing is an environmental imperative, but it should not be forgotten that it is also a social and economic one.

Myth: New Zealand is lagging behind other countries in marine protection.

New Zealand is leading the world in marine biodiversity protection with 30 percent of our waters afforded protection in some form. Overall, MPAs cover 7 percent (26.3 million km²) of the world's ocean with New Zealand contributing around 5 percent (1.2 million km²) of this total. Over 90 percent of New Zealand's EEZ has never been contacted by bottom trawl and over 30 percent of the EEZ is closed by law to bottom trawling. Where we do need to improve is protecting our coastal areas from land-based effects, and MPAs aren't the right tools for that.



New Zealand's marine protected areas.

The hidden impact of Cyclone Gabrielle

Mary Schumacher, GM FirstMate

We've all seen the devastating images of what's happened across parts of the North Island in the last couple of months.

It's fair to say that we've all been deeply impacted by what's happened to our Aotearoa whanau. Our hearts and thoughts are with those directly impacted; who have lost loved ones, homes and livelihoods.

For those of us in the seafood sector, it comes with an added sense of foreboding. We know, as many of the public may not, about what happens to the destruction on land and where it eventually ends up. And we know what this could mean for our North Island - East Coast fishing whanau.

It's the hidden impact of the devastation of the cyclone. As the sludge, silt, slash moves downstream and eventually into the sea, it's lost to view. And for some, easily forgotten because what can't be seen doesn't carry the same emotional toll of what can be seen.

But we know from floods and severe weather events in other parts of the country over the past few years, that this sort of land debris coming into our fishing grounds, our 'sea paddocks', can be damaging to our local fisheries and has potentially long-term fishery impacts.

In mid-February, FirstMate Navigators were deployed to support seafood families and business impacted by

Cyclone Gabrielle. We worked alongside Rural Support Trust, MPI, and local seafood companies, fishers, and whanau. It became clear very quickly that the seafood sector was significantly impacted by the cyclone.

We heard that there were significant concerns about the potential impact of silt on fishing spots and

that there were challenges accessing clean water to process the fish they were able to catch. It was unsafe for fishers to navigate at sea in the impacted region due to large amounts of floating debris from land. We heard that some fishers couldn't access their boats, their pots and for some this was a final blow after several months of poor weather and fishing. Thankfully, some of this has got a bit better recently.

Often sea impacts go unreported because land-based impacts are easy to see but those downstream or underwater are not so visual. We know seabed and fishery impacts can have an impact on customary, commercial and recreational fisheries as well. It can mean access to kaimoana is compromised. It's important that everyone understands that fishery impacts are often because of land based impacts not commercial fishing.

FirstMate's role is to help bring attention to the impacts on our fishers and we have been working to raise awareness to MPI and others. Our Navigators actually moved into the response coordination centres so they could be there in person to work in collaboration with the response organisations. After hearing reports of toxins in the Napier silt, we sent 3000 facemasks to our Napier fishers to help them be as healthy as possible as they began their clean up.

FirstMate have also been providing wellbeing support to individuals and often very distressed fishers and their whanau. Sometimes it's as simple as being a listening ear. Often the support we offer can be more practical. We connect these fishers, or their whanau, with support services, whether it's counselling, mechanisms to find aid, response agencies – whatever they might need, we try to find a way to support them.

If you're impacted by the cyclone and need support – of any kind - or know someone who does, then please don't hesitate to get in contact with FirstMate. You'll talk to a real person – someone who knows the seafood sector, and who understands. We'll work with you on what support might be most useful and we'll connect you to what you might need; whether it's a chat with a Navigator or a link to a service provider.

Call 0800 ADRIFT (237438), anytime between 7am and 10pm any day.



Mary Schumacher.

Cyclone recovery: supporting the Seafood Sector

Dan Bolger, Deputy Director General, Fisheries New Zealand

I'd like to begin by acknowledging the challenges faced by people and seafood businesses affected by Cyclone Gabrielle, with many still working through the immediate impacts and disruption.

There will also be long-term effects. We're planning what research is required and when this

can be done to help understand and manage the impacts of the extreme weather on the marine environment and fish stocks. We've already heard from many of you about what you are seeing out in the water. Thank you for passing on your insights, these are crucial to help build a picture about the immediate and longer-term impacts. Please keep sharing your valuable information with your local Fisheries New Zealand staff.

Fisheries New Zealand people across the country are supporting the Cyclone Gabrielle response and are also available to help you get the advice and information you need.

There are also other places which offer funding, support and advice, including FirstMate for health and wellbeing support, as well as some Government agencies, local councils and community groups.

Full information about help that is available can be found on our website.

Seafood Sustainability Awards

After a challenging few weeks, The Seafood Sustainability Awards are a great opportunity to recognise those going the extra mile to contribute to the sustainability of New Zealand's kaimoana.

Entries from individuals, businesses of all sizes, iwi organisations, and not-for-profits from across aquaculture, fishing, innovation, and research are all strongly encouraged. There are a number of categories that can be entered, including Operational Innovator, Future Leader, Ocean Guardian, and Tangata Tiaki/Kaitiaki.

Entries will be reviewed by a panel of independent judges, representing different parts of the seafood sector. Rosemary Hurst, former Chief Scientist - Fisheries with NIWA, will be chairing the judging panel. Winners and finalists will be recognised at an awards event in Wellington on 6 June 2023.

You can nominate yourself or someone else. To enter and for more information on the awards, visit our website mpi.govt.nz/seafood-awards



Dan Bolger.

New tools developed to support multi-species management



View through trees, Nelson coast. Image: Robin Wilkinson.

A collaborative research project by Fisheries New Zealand (FNZ) and Sustainable Seas National Science Challenge has explored how mapping and modelling tools can support multi-species finfish management, with a case study focused on the Tasman and Golden Bay snapper fishery.

The project report, *'Exploring the use of a system diagram and multi-variate analysis to understand multi-species complexes in fisheries'*, included input from FNZ, the Department of Conservation, Nelson City Council and Tasman District Council, and fishers in Fisheries Management Area (FMA) 7. Oversight was provided by a kaumātua with extensive local knowledge. Collectively, the group provided knowledge and experience of customary, commercial and recreational fishing, marine environment and species conservation, local government policy and community values.

Project coordinator Eric Jorgensen says the group workshops provided valuable "on the ground"

perspectives. "It was people who have an interest in the same place, but we're all doing different things. There's a management responsibility and we need to build an understanding of each other's values and what is positively and negatively affecting those values."

Snapper was the primary/target species, while five other species were also chosen for analysis because they are often caught alongside snapper: tarakihi, John Dory, red gurnard, rig, and flatfish (in general). The group considered the species' biology, habitats and stressors, as well as fishers' activities, economic drivers, and FNZ management.

Several mapping and modelling methods were explored, including a system (causal loop) diagram. The diagram was used to visualise the relationships between fish and habitats, as well as between fishers and fish. The data showed that there has been a large increase in snapper populations in FMA7 in the past 10-15 years, due to internal interactions and external impacts. Previously, flatfish were the main target species.

SUSTAINABLE SEAS



Snapper. Image: Malcolm Francis NIWA



Abel Tasman National Park.

Eric Jorgensen says a range of insights into trends over time were highlighted by the system diagram.

“Going through the systems mapping exercise, you start to understand the different links. You start to see that, yes, when we trawl for snapper, we have some impact on the habitat. But that’s not the only habitat impact. The mapping provides a bedrock foundation for future work.”

To build on these insights, multi-variate analysis (MVA) was used to understand the patterns and similarities displayed by multiple species. MVA can inform which species to manage together or highlight which characteristics of those species need further study. It also takes into consideration issues that can affect fish abundance, such as climate change.

“We need to understand all of those intersections across the species, to support management decisions,” says Eric Jorgensen.

An agent-based model (ABM) was also created to explore our understanding of the relationships between the species, fishers, and the environment. ABM is a computer simulation that models the actions of multiple agents, such as snapper and fishers, and how they interact with each other and their environment.

Collaborative modelling tools (known as socio-ecological modelling) can improve analysis, as well as identifying knowledge gaps. The modelling tools are part of a broader initiative by Sustainable Seas to develop ecosystem-based management (EBM) in marine management. EBM brings together experts with diverse knowledge and experience to collaborate

on holistic and inclusive management of marine environments and the competing uses for, demands on, and ways that New Zealanders value them.

Eric Jorgensen says studying the variables and commonalities of multiple species leads to a deeper understanding of the marine ecosystem, as well as stronger bonds in the community.

“Those conversations that happen around the table, they help build relationships. They allow us to get some insight into the abilities and constraints of different parties. So for instance, people that aren’t part of the commercial fishing industry get a much greater understanding of the operating environment for fishers – such as the price of fuel and how that drives their ability to fish.

“These types of processes can help get everyone involved in terms of looking after a [particular] place. Looking after places also means looking after people.”

For more information: www.sustainableseaschallenge.co.nz/system-diagram-and-mva

About the Sustainable Seas National Science Challenge

Sustainable Seas is a 10-year research programme with the vision that New Zealand has healthy marine ecosystems that provide value for all New Zealanders. It has funded 75 interdisciplinary research projects that bring together around 250 ecologists, biophysical scientists, social scientists, economists, and mātauranga Māori and policy experts from across New Zealand. It is funded by MBIE and hosted by NIWA. For the latest research, tools and resources, sign up for the newsletter: sustainableseaschallenge.co.nz/newsletter

The importance of Te Ao Māori to ensure the sustainability of our fisheries

Caroline Read, CE FishServe

If there is one thing that is certain, it is change. And it is fair to say that this year has once again delivered a new mix of change and challenges for our fisheries sector.

Severe weather events made for a tough start to the year for many fishers. The impact of Cyclone Gabrielle was felt particularly by those in Te Whanga a Ruawhoro Hawke's Bay and Tairāwhiti, where residents faced a range of disruptions on both the land and water. A rāhui was put in place in the region by Mana Ahuriri Trust which saw a 10-day ban on fishing and the gathering of kaimoana.

Our client support team are the front line for fishers in relation to reporting when things go wrong. In the wake of the cyclone, the team received calls from those unable to meet deadlines due to the impacts they faced. Although FishServe must follow regulations in the same way fishers do, we felt the need to take action to support those whose fishing operations were most impacted.

This resulted in us waving our March Redevelopment Levy for those unable to operate. It was also pleasing to see the Government establish the Cyclone Gabrielle Recovery Support for Fishing and Aquaculture. Provided through Ministry of Primary Industries, it offers a raft of options for those affected. You can find a link to the fact sheet on our website www.fishserve.co.nz

It is in these moments of change, and recovery, that



Caroline Read.

I believe we must partner with Māori and to apply a Te Ao Māori view to our response, to ensure we can protect and support the sustainability of our fisheries for all.

It is poignant that last September marked the 30th anniversary of the Fisheries Deed of Settlement (Settlement Act 1992). This landmark settlement

delivered on the Crown's treaty obligations, righted past wrongs and set a platform for Māori to realise the potential of their fisheries taonga. Here, we have seen what true partnership and the recognition of Māori fisheries rights can achieve. Māori businesses play an integral role in the management of New Zealand's fisheries, with approximately 40 percent ownership of commercial fisheries.

Further demonstrating that partnership, in December the Government launched "Rautaki mo te Traurikura Embracing change for prosperity". Developed in collaboration with the Māori Primary Sector Forum – Ngā powhiri Taimatua – it provides a roadmap for accelerating the economic potential of the food and fibre sector in our changing world and realising opportunities in line with Māori-led values for prosperity.

Its three priorities of Mahi Tahi (partnership), Putea penapena (invest), Te waihanga (build) set a clear path forward. For us, the Fisheries Industry Transformation Plan will demonstrate Mahi Tahi. This plan is being developed to incorporate initiatives that reduce environmental impacts and support Māori seafood businesses to thrive.

This directly aligns with FishServe's work to maintain the smooth delivery of statutory services that underpin Aotearoa New Zealand's fisheries management, and the creation of meaningful information services to support the sustainability of those fisheries.

In our work we must acknowledge and respect the treaty relationships that exists as expressed in the Settlement Act 1992. Almost half of our clients are Māori businesses, so it is important that we reflect this in our approach and the delivery of our strategy.

Our mahi here is just beginning. The translation of our strategy into Te Reo is a first step in our commitment to reflect a Te Ao Māori world view in its delivery. I am looking forward to working with our Māori customers to continue this kaupapa and expand our efforts in a meaningful way.

Nāu te rouou, nāku te rourou, ka ora ai te iwi – with your food basket and my food basket the people will thrive.

You can find our Strategy: Te Tauākī O Te Rautaki Ahunga at <https://www.fishserve.co.nz/about>

A brief history of sea lions in the southern squid fishery

Ben Steele-Mortimer



Sea lions landing on one of our Southern Ocean islands. Image: Tamzin Henderson.

The New Zealand sea lion/rāpoka, a taonga (treasure) species of Aotearoa New Zealand, is one of the rarest sea lion species in the world and is classified as nationally vulnerable in New Zealand.

But why is this? Is this cause for concern a result of their limited geographic range? Are they nationally vulnerable because of their small population size? Over the years, some commentators have continued to point to incidental captures in the southern squid fishery as the cause. The reality is that the decline in numbers is down to multiple drivers.

The New Zealand southern squid fishery overlaps with the foraging range of sea lions, on the two relatively small but important fishing grounds adjacent to the Auckland Islands rookeries and outside of the 12 nautical mile marine reserve.

Sea lions are sometimes observed following fishing vessels, anticipating discarded fish waste and pulling fish out of the net while it is being hauled. Ever since the fishery was discovered in the mid-1970s by scientific survey vessels, sea lion interactions have been reported.

In the early 1990s, New Zealand sea lion captures in the Auckland Island or southern squid fishery (SQU 6T) became a cause of great concern to the seafood industry with an estimated 70-140 sea lions being caught in the nets annually.

At the time, few measures in place adequately reduced the risk to these marine mammals and the monitoring of the fleet was relatively poor, with low

numbers of government observers present in a fleet of up to 50 vessels.

In 1992, a Southern Squid Fishery Operational Plan was implemented, which set a limit on the number of sea lion captures that when reached, closed the fishery for the remainder of the fishing year. At around the same time, Motu Maha Marine Reserve was established within the Territorial Sea, which provided further protection, noting however that fishing did not occur within 12 nm.

However, since the 1990s the New Zealand sea lion population has been well studied and the science undertaken by DOC, MPI and NIWA is comprehensive and robust. There are estimated to be around 9850 NZ sea lions in New Zealand (including 2000 breeding females), with about 68 percent of the entire population breeding on the Auckland Islands.

Dr Jim Roberts, a scientist specialising in the study of New Zealand sea lions at NIWA, said in a 2019 risk assessment report that “the known threats to the Auckland Islands population include deaths relating to commercial fisheries at the Auckland Islands, including southern arrow squid and scampi trawl fisheries, *Klebsiella pneumoniae* infection-related mortality of pups, and indications of variable and/or limited prey availability and consequent nutritional stress”.

Roberts also noted in an earlier report that “the most pessimistic view of mortality caused by captures in fishing trawls can only explain a fraction of the decline

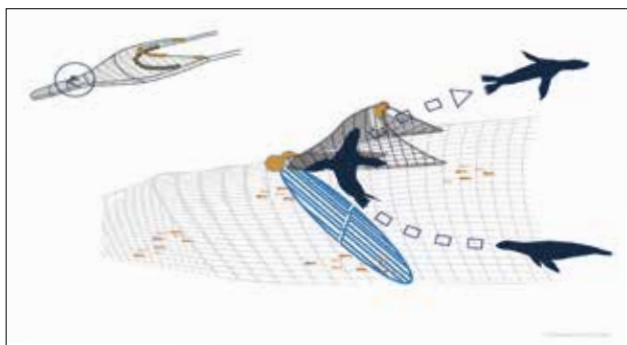


Figure 2 Diagram of Sea Lion Exclusion device.

and it's clear that something much larger is affecting the sea lions. Low pup survival and the observations of field scientists during the breeding season point to food limitation and bacterial disease as strong candidate causes for the decline".

The use of SLEDs and reduction in captures.

The southern squid fishery is known to interact with sea lions and in the early 1990s, concern increased as to the effects of this fishery on the viability of the sea lion population.

However, over the past 30 years - particularly the last 20 years - significant progress has been made by the seafood industry and government to reduce risk to sea lions.

The development and implementation of Sea Lion Exclusion Devices (SLEDs) commencing around 2000 have become one of New Zealand's most successful fisheries incidental capture mitigation strategies and are recognised globally for their effectiveness. Today, as a result of the work of industry, government agencies and the engagement and cooperation of the deepwater fleet, the risk to sea lions from fishing activity is significantly reduced.

SLEDs are designed to allow sea lions to exit squid trawl nets, once inside the net (Figure 2). Initial designs were based on turtle exclusion devices used in the Australian prawn fishery and were altered to suit the physiology of sea lions and the larger trawl nets. There was significant research into prototype development at the Australian maritime research facility in Tasmania using scale models, then in full scale on vessels.

With government support, Deepwater Group and its operators began implementing SLEDs across the entire squid fleet. Initial deployment was ad hoc with no standards, specifications or checks. Since 2006, Deepwater Group has required that certified (i.e. annually checked and manufacturer-approved) SLEDs be used in the SQU 6T fishery at all times. SLED use in the SQU 6T fishery has increased from 44 percent of tows in 2002 to 100 percent of tows from 2006 onwards (Thompson et al 2015).

The full rollout of standardised and certified SLEDs has resulted in a substantial reduction in the number of observed sea lion captures. Observed sea lion capture rates decreased from 1 capture per 100 tows in 2005 to an average of less than one capture per 1000 tows after 2010, with 100 percent observer-reported adherence to the SQU 6T Operational Plan in recent years. In addition, after 2013, observer coverage in SQU 6T increased from around 30 to 90 percent, improving the certainty and quality of information reported.

Numerous studies conducted by government-contracted researchers on the efficacy of SLEDs have been thoroughly reviewed by experts through government-led scientific working group processes. These studies have shown that most sea lions are likely to survive following their exit via a SLED, however, there remains the potential for a cryptic element as a small proportion of sea lions may still die as a result of the interaction. To account for this, FNZ and DOC set a 'cryptic multiplier' to include the very small amount of unobservable deaths in the overall estimates.

Collaborative research and investment in the Auckland Islands.

To monitor the population, DOC leads a field project to count sea lion pups on the Auckland Islands between February and March each year.

The project costs between \$150,000 and \$300,000 every year, and 90 percent of it is funded by deepwater quota owners, with the Crown funding the rest.

Since 2003, the industry has contributed over \$4 million to monitor the population.

In the late 1990s when population monitoring became routine, there were increasing pup counts on the Auckland Islands. This was followed by a gradual decline in numbers after 2002, with an outbreak of *Klebsiella pneumoniae* (while at the same time, the fishing fleet was decreasing in size and capture rates of sea lions were declining). In 2014, the pup count dropped by 18 percent on the previous year and was the lowest count since 1995.

This triggered the Minister of Conservation and the Minister for Primary Industries to call for the development of the New Zealand Sea Lion/rāpoka Threat Management Plan (NZSL TMP). This NZSL TMP details a five-year plan of targeted research, direct mitigation, and regular monitoring at all known sea lion breeding sites. The scientific assessments that underpin the TMP have assessed the three main drivers of the decline to be:

- A halving of pup survival during the mid-1990s
- A drop in adult survival during the mid-2000s, and
- Low pup production through the mid-2000s.

The plan which is due to be reviewed this year also looks to better understand threats, including *Klebsiella*

pneumoniae, nutritional and climate change stress, other environmental threats, and fishing impacts.

Deepwater Group was a committed participant in the NZSL TMP process, along with government agencies, environmental NGOs, and marine mammal experts.

To date, Deepwater Group remains fully engaged in the TMP process and continues to ensure the squid fleet operates in alignment with Marine Mammal Operational Procedures and the Fisheries New Zealand SQU 6T Operational Plan.

Progress?

Between 2014 and 2022, pup counts on the Auckland Islands stabilised (Figure 3).

However, in February 2023, DOC reported an estimated 25 percent decline in the expected number of pups on the island. DOC has commented that “this apparent drop was not associated with an increase in sea lion captures in fisheries around the Auckland Islands”.

In 2022 there were two sea lion captures in SQU 6T, with 94 percent of the fishing events observed by government observers. Additionally, DOC noted that there weren’t any obvious outbreaks of *Klebsiella pneumoniae*. Neither were there any indications of widespread disease outbreaks at the colonies.

Stakeholders of the TMP are puzzling over what may have caused the decline.

According to DOC, “one hypothesis is that the warmer than usual ocean temperatures may be affecting food availability, as some fur seal pup counts have had similar results this year”.

- **Ocean temperature changes:** According to MetService project manager, Malene Felsing, “the fishing industry has been instrumental for the roll-out of the Moana Project, which is helping researchers, industry and government better understand oceanographic and water temperature changes across the whole of New Zealand’s Economic Exclusion Zone”.

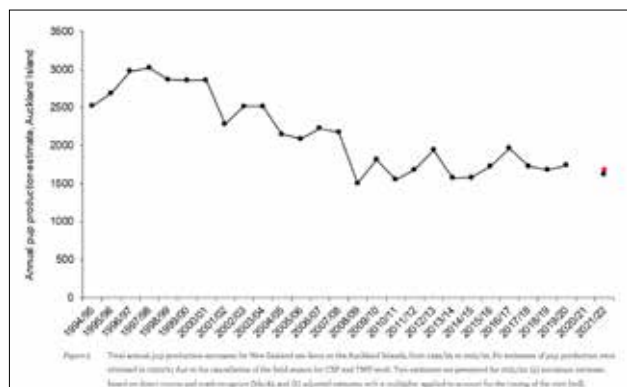


Figure 3: Total annual pup production estimates for New Zealand sea lions on the Auckland Islands.

Temperature sensors are deployed on fishing gear and temperature profile data are collected and automatically sent to a database to help improve marine forecasts and hindcast modelling, including forecasting the marine heatwaves that have been present throughout New Zealand waters for the last two years. The sensors are providing vital subsurface temperature data that we have never before had, which has greatly increased our understanding of our changing seas.

• Pup counts on Stewart Island/Rakiura and the mainland:

Despite the challenges faced by the Auckland Islands population, sea lions have begun to expand their range north from the subantarctic islands. Since the 1990s, breeding females have been returning to Port Pegasus in the southeast corner of Rakiura, and Otago Peninsula. These small but rapidly growing populations of sea lions on Rakiura and the mainland show the species is demonstrating adaptability and resilience.

Summary

The Southern squid fishery in New Zealand operates in areas that overlap with the foraging range of sea lions. These areas include two small but important fishing grounds located adjacent to the Auckland Islands rookeries and outside of the 12 nautical mile marine reserve.

In response to concerns about the impact of the fishery on the Auckland Islands sea lion population, the government and seafood industry have made significant efforts since the early 2000s to understand the effects of the fishery and develop new mitigation tools and approaches to reduce risks.

Over the past 20 years, the squid fishery has successfully reduced observed sea lion captures by around 90 percent since 2004 with a high degree of certainty, and the seafood industry remains committed to continued investment and partnerships to better understand risks to this taonga species.

Despite the stabilisation of these counts in recent years, the recent significant drop in New Zealand sea lion pup counts in 2023 is a major concern to deepwater quota owners.

The New Zealand seafood industry is committed not only to mitigating its own risks of harm but also to collaborating closely with researchers, DOC, and FNZ to investigate the causes of the decline, prioritise research and management efforts, and ultimately restore New Zealand sea lion populations to safe levels.

We firmly believe that achieving this goal is within reach.

One of the boys

International Women's Day takes place every year on March 8 and celebrates the social, economic, cultural, and political achievements of women around the world. Janan Jedrzejewski chats with 28-Year-old Kayla Durrant about being a young women at sea.



Durrant has been fishing since she was 25 years old.

"I always tell them, 'just treat me like one of the boys', otherwise, I'm not going to learn anything."

Mangonui native Durrant is a driven young woman who, in her own words, 'ran off to sea and never came back' at the age of 25. Until recently, she was a commercial long liner deckhand for the MacNicol brothers on *Kiella*, which she still does fill in trips for, but is mainly based on mussel barge out of Houhora. In her own words it's an "awesome opportunity" and has "really spiked my interest in aquaculture, with many more opportunities to extend my skills and knowledge."

For Durrant, it's a unique adventure surrounded by nature and with that, comes many opportunities to share her experience on social media – despite the patchy reception.

"Got a lot of selfies," she quips, "Skipper's always giving me shit about it."

"It's the beauty of it. For me it's an exciting job; you see something new every day. For me, the sunsets or sunrises, the dolphins, the whales, the birds; it never gets old. I could see a thousand sunsets and every one of them is different and I appreciate every single one of them."

"Got thousands of photos and videos on my phone," she laughs, "my skipper gives me shit about that, too."

She recalls her favourite memory was when she first jumped on *Kiella*, during what was her second or third trip.

"We were hauling our gear and we just saw maybe 100 meters off, a big humpback whale, feeding on some krill. So, we just idled up to him and he just swam around the boat just really performing."

"That was probably one of my most special moments."

The crew meals are another draw, Durrant explains.

"Every now and then, we'll eat something we've caught. I do a nice, creamed fish meal sometimes, do a little bit of cooking here and there, otherwise Skipper will do a nice roast or nachos."

"On the days we eat fresh fish, it's really good. It's quite nice. I put up stories on my Facebook like 'we've just finished out day and I just followed it up some nice snappers and cooking them'."

"It's kind of cool to still be at sea and that fish has just been caught, fresh as, you're eating it hours later."

How does social media savvy Durrant cope with not



Kayla Durrant - small in stature, big in work ethic.

having reliable access to the phone network? Surprisingly, it also turns out to be another enjoyable aspect of life at sea. "It's all good, we all moan a little bit, because we like to watch our funny videos and sit and have our downtime after work and but it's kind of nice sometimes. I've been on one [boat] where we've been up the Three Kings (Manawatāwhi) for a week straight with no reception and it was quite peaceful actually - sort of being out from the world.

However, it's not all Insta pics, foodie stories, and stunning landscapes – the days can be grueling.

On a typical day, Durrant explains the crew are up on deck from anywhere between 2am to 6am, coffees in hand, to set the gear, putting between 4000 to 6000 hooks on the line.

"After that, we sort of dig all our ice. That takes a couple of hours to do, that job. And then we're into hauling the line back up again, and that can take anywhere between Five hours to ten hours to do, and that's nonstop. No breaks. You just go hard, in any type of weather.

When the fish comes in, Durrant and her crew 'ikejime' them; a humane practice that originated in Japan of quickly and directly 'spiking' the fish.

"So, they all hand-killed and slurried in icewater. after that we pack them all, let them set, and pack them all

into bins individually and in real nice. That takes another couple of hours, and then baiting up the gear after that.

"Our days can sometimes be from 2am all the way through till 10pm or 11pm at night."

The comradery is one of the many motivators that helps keep Durrant going.

"We chat a lot to each other on the boat. Had some good laughs. There's not a lot of free time and, if we do get like a couple of hours or something, we usually like taking that time to have a rest. Have a nap. Because you're so tired, sometimes only getting four to six hours sleep a night - If you're lucky. So, any spare time, we're usually straight to the bunk room or having a shower.

Despite the heavy workload and being in a male-dominated field – Durrant thrives and encourages others to do the same, as the rewards are there for those that want them.

"I'd say it's not for everyone," she laughs, "definitely not."

"Sometimes it awakens something in you, and you don't even know it's there until you do it.

"I'm only five-foot two. I'm little and I get a Lot of shit from the boys because I'm short and petite, but I've outworked some guys twice my size. They can't even hack a couple of hours on the sea.

"Even if I do complain about something, more than a boy would, they'd be like 'Kayla, you told us - treat you like a boy', and I'm like 'that's right'.

"It's hard work. It's all work but the rewards, I guess, I appreciate more than other people do; the sunsets and the dolphins.

"If you think you're hard out, give it a go, it might be for you. The money's worth it. It's good money, that's just one of the perks of sort of living this lifestyle. I work 'week on, week off' for half the year and I'm still making as much as someone who was working every week.

"All the stuff you get to see and the things that you learn, it's made me a lot more alert, because I work really fast. You've got to be really on point - it's the second most dangerous job in New Zealand. So, you've really got to be on your game, because people die if you don't do your job properly and look out for each other.

"It is definitely rewarding. I'd recommend more women to do it. We've got attention to detail, I guess."

Not too long ago, she recalls being at a crossroads, deciding if a life at sea was really for her. However, having met her new partner at sea and getting noticed for her hard work, she's in it for the long haul.

"Life is good, I've got the fishing bug. Between the three or four mark you think 'is this the life or want or do I want something else?'

"I wanted to stick with it."

She's now focused on her next goal - working towards her skipper ticket.

Fishermen's hash



Image: Harbour Fish.

You can't go wrong serving this as a brunch dish, but it's also a great weekend lunch or light dinner. A poached egg on top is a nice touch. The mix will easily keep for a day or two in the fridge, if you want to prep in advance.

Ingredients

For the Avocado Smash

- 2 ripe avocados
- ½ lemon, juiced
- Flaky sea salt
- Black pepper, freshly ground

For the Fish Hash

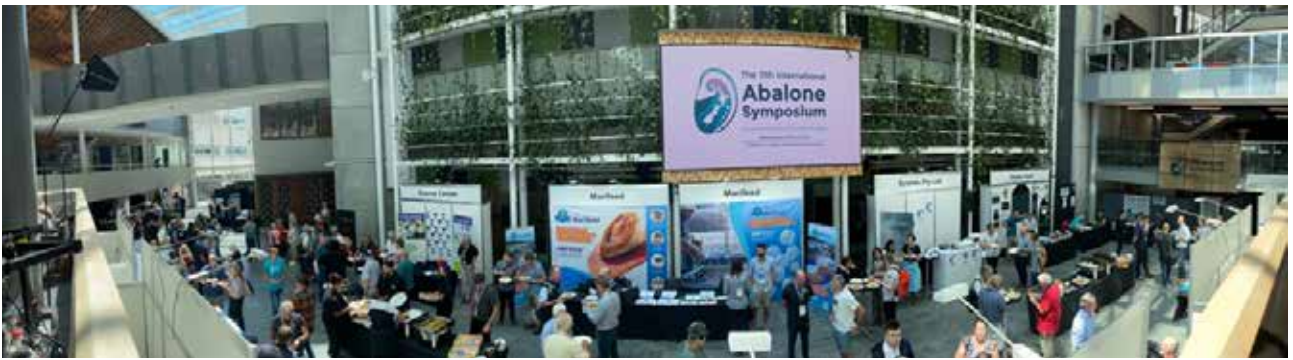
- 300g white fish, diced
- 3 medium potatoes, grated
- 3 spring onions, finely chopped
- 50g chorizo, finely chopped
- 2 tbsp rice flour
- Flaky sea salt
- Black pepper, freshly ground
- 2 eggs, beaten
- 3 tbsp oil

Method

1. Open the avocados, remove the stones and scoop out the flesh into a bowl.
2. Mash the avocado to a smooth consistency. Add the juice of 1/2 a lemon and season well with salt and pepper. Mix well and set aside.
3. Finely dice the fish into small pieces and place in a large mixing bowl.
4. Grate the potatoes with a cheese grater. Squeeze out all the excess water from the potatoes once grated (use a clean tea towel to do this if you need to). Add to the fish, along with the chorizo, spring onion and rice flour. Season with salt & pepper.
5. Add the beaten eggs to the fish mix and fold through, making sure all ingredients are well combined.

Hot topics dominate abalone symposium

The 11th International Abalone Symposium was held in Auckland in late February and New Zealand's commercial pāua industry was held up as an example of collaborative and sensitive stewardship of the resource, Lesley Hamilton reports.



The venue for the conference, AUT.

Some 220 delegates from 15 countries attended the first conference to be held in five years, the last being in China in 2018. Held at AUT it was opened by Trade and Export Growth Minister Rino Tirakatene and while much of the agenda was concentrated on climate change, the reopening of the Kaikoura fishery was also a hot topic.

Ngai Tahu kaumatua Sir Mark Solomon didn't hold back when he summarised the reopening of the fishery, five years post-earthquake, as a preventable disaster.

Solomon, the 13th generation of his family living in Kaikōura talked of pāua being a staple of their lives, although he said back in the 1960s, before pāua was commercially fished, they used it mainly as cray bait.

"I was talking to a mate who fished back then, and he told me he made more money out of the shell than the meat.

"I left school at 16 and worked in the freezing works. The average wage at that time was \$65 a week. I raise this because, in the 1970s in my first week of pāua diving I made \$986 in my hand."

Solomon says that first dive, he took one tonne of pāua, and he took it mostly from ankle deep water.

He says despite there being fierce opposition to abalone becoming a commercial species of what was traditional food, he has nothing but praise for the commercial industry today.

"I was the chair of a tribe for 18 years, was responsible for giving out customary permits, and I have been in the commercial game, and I believe that the most responsible

users of the Kaikōura coastline after the earthquake were the commercial divers."

The Kaikōura earthquake in 2006 caused the seabed to uplift more than six metres in some areas, decimating the habitat of pāua.

"The commercials cut their quota in half," Solomon says. "The recreational fishers, who had an allocation of five tonnes, took 43 tonnes. The view is that another 10 tonnes died through mishandling – that is, using screwdrivers to lift the pāua off, then just chucking them back in the water.

"Prior to the earthquake in Kaikoura, the customary take was 15 tonnes. After the earthquake, the Ministry added another seven tonnes – and that wasn't a request from the iwi, the Ministry just did it.

"The reopening of the Kaikōura fishery was a major gaffe by the Ministry. If I look at the commercial take, the recreational take, the customary take, and the wastage, the 90 tonnes of pāua was taken off our coastline in a three month period over last Christmas. That is not sustainable.

"In one day, during the reopening, more than 1500 recreational divers were counted in the waters off Kaikōura. To give you an example, in Goose Bay, a cousin went down, and it took her husband five minutes to get three good sized pāua. A week later, he went down to get another feed and it took him 45 minutes and a week later he couldn't find any in the Bay. It had all been cleared out."

Solomon says it got worse.

"We have a marine reserve on the Kaikōura coast, and



Paua skewers at the International Abalone Symposium.

we had DOC rangers watching it. In a single hour, over 90 recreational divers tried to go diving in the marine reserve. As the rangers stopped one group, other groups were walking past DOC staff to get into the waters of the marine reserve to get pāua."

Solomon says the kelp beds have also mostly disappeared with the huge sediment from landslides caused by the earthquake and the whales who made Kaikōura home and were central to the Whale Watch business his family began, have largely moved away to find food.

And climate change is also a very real threat.

"For the past five to six weeks, the water temperatures in Akaroa Harbour have been five to six degrees warmer than usual. We are going to have big issues going forward of sea temperatures affecting our stocks. We are now catching snapper and kingfish south of the Campbell Islands in the Southern Ocean. We have never seen that before.

"If you talk to the tribes at the top of the South Island, they will tell you the proverbs they have had about snapper for generations. The snapper comes into their waters in the start of spring and start leaving towards autumn. Snapper likes temperatures of around 18 degrees, so traditionally they head back north when it gets too cold. They are no longer doing that. You can now catch snapper year-round in the South Island. You can now catch snapper in Foveaux Strait."

Solomon ends with a warning.

"I think our pāua is a sustainable resource, but it seems a lot of Kiwis think it is their God-given right to go to the sea and take whatever they want. They don't understand it is a finite resource.

"When we submitted on the reopening of Kaikōura, we asked for a lot of things. We wanted to increase the minimum size from 125mm to 130, we asked for a three pāua per person limit. Look, I am a man with four kids and three pāua feed my family, I don't need any more. We have to change the mindset for future generations.

"The way the commercials have managed the Kaikōura pāua fishery has been exemplary. The recreational and customary users need to follow their example."

Professor Peter Cook, an adjunct professor with the University of Western Australia and a recognised international expert on abalone, says the common theme globally is we cannot expect expansion in abalone numbers but must work on managing what remains.

"There used to be big fisheries round the world – 20,000 tonnes coming out of the fisheries and now there is about 5000 tonnes coming out," Cook says. "They probably won't go down anymore because of the improved management, but the big problem is the illegal exploitation of abalone. Just from one country – South Africa - there are 3500 tonnes

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of illegal product coming out each year, and worldwide there is probably 7000 tonnes illegally coming out of several countries, including New Zealand and Australia.

"There are several reasons. Yes, it is high value, and in places like South Africa there is so much poverty, which will be a factor. However, you can't make that argument in other countries where abalone poaching is also rife. Some 7000 tonnes of poached abalone has a big effect on the world market. Also, most of the abalone that is taken illegally is of the bigger size, so it really affects the world market. In places like Australia and New Zealand we need better regulation of poaching but in other countries there seems little political will to do that."

He says, in Australia, poaching is more difficult because recreational fishing is highly regulated.

"For example, in Perth you can only go into the water as a recreational diver for four mornings a year and those mornings are set. On those mornings, all the divers come down, the fisheries officers are there, and you are only allowed one hour in the water – and there is a bag limit as well."

Cook says climate change and marine heatwaves are a very real threat.

"Each abalone species occurred in a particular place because that is where the conditions were right for them and if you change those conditions, which climate change will do, those species may not thrive there. However, research tells us that the abalone population will move. For that reason, aquaculture of abalone is the way of the future.

"Already way over 200,000 tonnes is produced worldwide – 218,000 tonnes of that comes out of China and it is still growing. Interestingly, you would think that that huge tonnage coming out of China would affect the price around the world, but it hasn't. And the reason for that is the domestic demand in China is so big they consume most of what is produced. The prices of abalone in Australia have remained constant and are expected to rise."

David Schiel, Distinguished Professor, Marine Science, Canterbury University has a long history in pāua research.

"I must share, though, that my career was almost cut short

on the first ever dive I ever did in the Chatham Islands," he says.

"I got thumped in the back of the head in murky water and I thought it was my technician swimming over me and kicking me, but when I looked up this Great White shark cruised on by. So, I did what any red-blooded, virile young male would do and crawled under a rock."

Schiel jokes that

his whole career has been charting the demise of every ecosystem he has worked in.

He echoes Solomon's despair at the way the Kaikōura fishery was reopened.

"The earthquake split the land from 35 kilometres inland to about 35 kilometres out to sea. It created a huge mudslide through the underwater Kaikōura canyon and did a lot of damage to the deepsea ecosystem for about 400 to 500 kilometres. The earthquake came in a little after midnight on a rising tide and lifted the habitat of lobsters and pāua out of the sea."

Schiel and his researchers were on site within a couple of days to start mapping the damage. "We had never seen anything like this in our lives. It was total devastation."

They made over a million scientific observations over six years. "So that gives you some idea of the corpus of work we can now call on.

"We counted a lot of pāua just before the recreational reopening of that fishery – and there was a very good recruitment of pāua along this coastline, then it opened.

"There were a lot of people who went out, there was a lot of illegal fishing, and in that three months we saw a 66 percent decline in the abundance, which took us down to below the levels we'd started with. So, there were two surprises. The first that those populations had been rebuilt up to a level I hadn't seen in thirty or forty years, and the other was that we managed to get most of them in three months.

"As the communications guy at Fisheries said, the fishers had a grand time. No kidding."

Schiel says the question he asked the Ministry was 'is it fishing? Or mining a resource?

"It was supposed to be five tonnes. The recreational fishers took 45 tonnes. And they damaged or discarded 10 tonnes. What's sustainable about that? Nothing.

"The Ministry like to work in tonnages. Let's work in demographics. There are about three pāua per kilogram, so five tonnes is about 15,000 pāua. You take 40,000 pāua over the quota that are aged 7-8 years, you've got about a million pāua years. Those pāua ain't coming back from any place unless you stop hammering the fishery.

"There's a famous paper that all of the academics will be aware of. It's called Tragedy of the Commons. It's a moralistic tale, sort of like Aesop's Tales for academics. Anyway, the idea is, if you have a common resource with no particular guidelines, except 'please don't do stuff', then the first person in is going to start taking the best stuff. That's what happened in Kaikōura.

"New Zealand's population is getting larger, we like seafood, we don't have to get a licence, let's go out and grab it. That is not sustainable. We have to do something about it and we should start with recreational reporting.

"We have a commercial sector that is strictly regulated, and we have a recreational sector that is a free for all.

"There is a quote from Benjamin Franklin. 'We must all hang together or most assuredly; we will all hang separately.'"



Sir Mark Solomon spoke at length on the Kaikōura pāua fishery reopening.

Festivals and filleters made for a festive and fishy March



Winner Sitiveni Kakala holding the Golden Knife Trophy – Tangaroa.



Green Lipped Mussels were the star of the show. Image: Richard Briggs.

Three festivals brought fun, food, and skill to the streets of Auckland, Havelock and Hokitika on the West Coast in March.

For the first time in many years, the iconic Golden Knife trophy was dusted off and competed for at the Indulge Festival on the Auckland waterfront on March 4.

Competitors were Raja Jaganathan of Sanford, Edmond Chan, also from Sanford, Laupo Pahulu from Moana New Zealand, and Sitiveni Kakala from the Kai Ika Project, who went on to win the grand prize.

Judging was based on speed and recovery – meaning the amount of fillet recovered from the 10kg of snapper they had to work with.

The winner's time was 6.13minutes with 37 percent recovery.

All fish and frames were donated to the Kai Ika Project.

At the top of the South, the Havelock Mussel and Seafood Festival had a stunning day on March 13. The weather started out foggy, but once it cleared, there was not a cloud in the sky. Pre-sales were up and on the day around 3600 people feasted on seafood, enjoyed celebrity chef Simon Gault, and danced to the entertainment, which included the Jordan Luck Band.

Further South, the Wildfoods Festival in Hokitika was also held on March 13 and a huge hit again, with people travelling from all over to enjoy the delicious and the weird. When not getting carried away with scoffing huhu grubs, locusts, and wasp brownies, there were delicious whitebait fritters, and Chatham Island seafood.



The Jordan Luck Band gets the crowd on its feet. Image: Richard Briggs.



The Hokitika Wildfoods Festival crowd. Image: NOMAD.

George Clement and Richard Wells farewelled

Tim Pankhurst



Deepwater Group chief executive Aaron Irving pays tribute.

Industry stalwarts George Clement and Richard Wells were farewelled at a function at Seafood New Zealand's Wellington headquarters in December.

Deepwater Group (DWG) directors, Fisheries New Zealand deputy director-general Dan Bolger, sector group representatives, and former colleagues paid tribute to the pair who made such a large contribution to the fishery over many years.

Clement was founder of the Deepwater Group in 2006 and was its chief executive until retirement at the end of the fishing year on 30 September last year.

Wells founded Resourcewise and his name is synonymous with the protection of endangered species and good fishing practices.

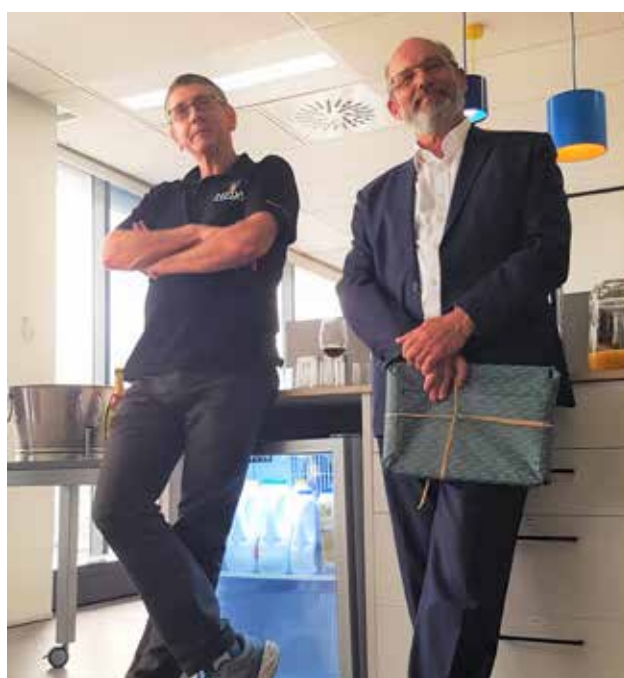
Deepwater Group chair Tom Birdsall and newly appointed chief executive Aaron Irving spoke of the considerable achievements of the pair and the debt owed to them by the industry.

They were presented with gifts and tribute books prepared by DWG's Inge Wisselink.

Wells responded in his usual salty manner, noting that when he first saw what was happening to seabirds at the back of boats he thought "what the f...?!"

Fishing companies responded to his alarm and effective protection methods and threat management plans are now standard operating procedures.

Clement was looking forward to an extended Christmas break with family and will continue to offer his expertise to DWG on a part-time basis.



Richard Wells and George Clement.

Right Time, Right Place – fisheries management through dynamic data

Fishery dependent data, collected by industry, is of paramount importance to inform peer reviewed science that in turn supports policy and management decisions, as project manager Oliver Wilson reports.

Industry has a long-standing reputation for supporting evidence-based decision making. Yet the utilisation of the data collected by industry to directly support operational decisions is lacking.

Fishers are striving to fish smarter, not harder, and adapt to changing environments, changing regulations, and shifting expectations from consumers to maintain their social licence. Pressures on operators are increasing and the challenges facing the industry require innovative operationally focused research.

Right Time, Right Place is a collaborative research project developed by Dragonfly Data to meet the needs of industry partners to provide useful information to support operational decision-making. The tool empowers fishers to adapt fishing practices and build resilience to climate change impacts within the existing management framework. Right Time, Right Place is seeking to meet both current and future challenges as well as embracing new opportunities.

The project is currently seeking funding through the Ministry for Primary Industries Sustainable Food & Fibre Futures Fund (SFFF), with in-principle support from Seafood New Zealand's Inshore and Deepwater Councils,

and fishing companies.

This is a solution for industry, by industry. The research outputs will support industry's desire to fish more dynamically and efficiently by using near real-time data to refine fishing operations. Enabling

improvement of environmental outcomes will benefit all stakeholders and support a thriving blue economy consistent with the vision of the Oceans and Fisheries Portfolio – *Ensuring the long-term health and resilience of ocean and coastal ecosystems*. SFFF funding being sought is consistent with the government's commitment to encouraging development of innovative solutions for issues in commercial fisheries.

Changing environmental conditions require fishers to adapt quickly, that decision making needs timely, accurate and useful data to inform fisheries operations in New Zealand. Laws Lawson, chair of the Inshore Council at Seafood NZ, is clear that Right Time, Right Place is about embracing our changing environment.

"To thrive in an ever-demanding environment it is imperative that fishers and operators are empowered with tools that use their data to support adaptive fishing practices and build resilience to climate change impacts within the existing management framework," he says. "We need an industry-driven, operationally focussed dynamic management platform to meet the challenge of adapting, innovating, and improving our approach to fisheries operations and broader fisheries management."

Dragonfly, an established research provider, believe in doing good with data and are working with industry to support operators and fishers to gain value from their own data. Philipp Neubauer, director at Dragonfly Data Science, explains.

"Right Time, Right Place will develop a dynamic ocean management platform that integrates an industry-led process with a predictive tool based on oceanographic forecasts and dynamic models of species distributions and



Laws Lawson, chair of Inshore Council, Seafood New Zealand.



Aaron Irving, GM Deepwater, Seafood New Zealand.



Oliver Wilson, project manager.

abundance,” he says. “This tool will use state-of-the-art dynamic models to maximise target catch, while minimising direct gear impacts and incidental captures of unwanted species. In other words, fishing in the right place, at the right time.”

Similar industry-led tools have successfully been developed overseas such as EcoCast , an Eco-Informatic Tool for Sustainable Fisheries, and BATmap, a Bycatch Avoidance Tool. Right Time, Right Place provides a New Zealand focused solution to our specific circumstances and regulatory environment.

Wilson says that with increasing operational costs, regulatory pressures, and a changing environment, it is imperative that fishers are supported with the operational tools to make informed decisions. The focus is not about telling fishers where they can or can’t fish. It is about empowering fishers with data to make the best decisions for their own operations. Adaptive fishing requires empowering fishers to gain value from their own data when making operational decisions to maximise their returns and minimise effects.

Expected benefits are:

1. Increased economic returns for companies and their shareholders as well as small scale vessel owner-operators
2. Optimised catch compositions to support management of quota and ACE packages throughout the fishing year
3. Increased catch per unit effort of target species
4. Reduced non-target bycatch
5. Long-term socio-economic and cultural benefits by sharing our understanding and learning about environmental drivers and responses of marine ecosystems and fish stocks in our changing oceans. This knowledge will, in turn, be useful to enhance their long-term sustainable use and mauri of Aotearoa’s resources.

Aaron Irving, general manager Deepwater at Seafood New Zealand notes that Right Time, Right Place fishing is utilising the power in the reporting and data provided by industry to support fishers to adapt to an ever-changing environment.

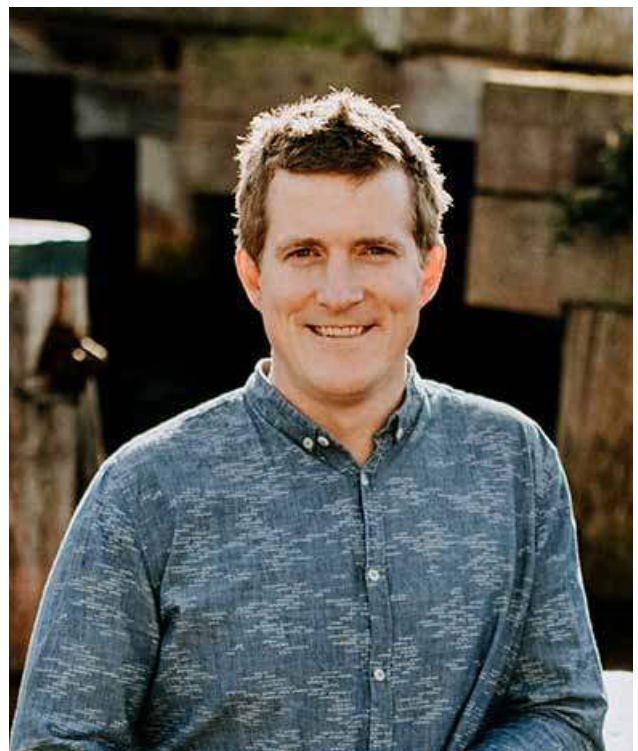
Wilson is enthusiastic about the huge potential for this project by establishing a framework that can provide hindcast and forecast models to support operational decision making. Discussions with FishServe are underway about how to most efficiently provide this operational tool to end users and enable the inclusion of new data streams to meet

current and future demand.

Caroline Read, hief executive of FishServe recognises the beneficial vision to provide access to this operational tool through existing infrastructure available to operators.

“Right time, Right place aligns precisely with FishServe’s strategy to ensure decision makers have easy access to meaningful information, we’re pleased to be able to engage on this work with Dragonfly,” Read says.

If you would like more details on the project or are interested in contact details for the project, email oliver@sustainablehorizons.co.nz



Philipp Neubauer, director of Dragonfly Data Science.

Denis Graham Palmer

A tribute from his son, Geoffrey Palmer

Many contribute to the New Zealand marine scene beyond what economists class as cost-benefit advantage.

Denis Palmer (20 June 1927- 21 December 2022) grew up in landlocked Feilding. Too young for WW2, an ember was implanted by the Port Nicholson Sea Cadets. A comprehensive Railways engineering apprenticeship instilled skill, planning, and a career.

Soon, he ran the western side Rimutaka Tunnel project generators, then plant at Erua and National Park logging camps, before maintenance of similar plant in Urenui, Inglewood, and Stratford. Hunting fed the family at times, and by 1965, with five children to support, decisions were made. With Government spending on infrastructure increasing, he created a mobile metal crushing enterprise. Unnecessary laws seemed to get Denis stirred up early on. His generators for the crushing plant were challenged as were his employee relations. No audit survived the acid test of on-site visits. His father was a postmaster but had a strong will reflecting a third-generation Kiwi history. Palmer did the "moonshine run" when the King Country was dry. Riding motorcycles and driving fast became a thing and he was a speedway, road racing, and beach champion between contracts.

He eventually sold up most of the business in Upper Hutt and a boat finally became a reality. The first, glass-over-ply cabin cruiser, split its hull in Wellington Harbour. After buying a property in Waikanae and viewing Kapiti Island daily, another boat was in order. A new bare 17'6" Lightning hull was fitted with a V8, Hamilton Jet, and his hand-crafted control features. The trailer was so innovative it set the pattern for top class items to this day. But no royalties. Several mechanical changes were made after a spectacular adventure up the Whanganui River that was made memorable due to his speedway bravado.

Returning to Porirua he finally had money for a house and a lifestyle that avoided his damaged spine, poor digit feeling, and arthritis. In 1974 the 14m motor launch *Mazurka* was purchased as a somewhat primitive but well-built corten plate carvel launch. Auckland built, it left a bit to be desired in Cook Strait, sporting an open scupper stern cockpit, shaft driven winch, 4cyl Kelvin engine and mechanical gearbox. A steep learning curve but Mana provided a wealth of local McManaway and Saunders knowledge.

The next two years had Palmer enthralled with the Marlborough Sounds, pioneering families, fishing, logging history, and farming. Modifications to make the *Mazurka* work as a safe and watertight Cook Strait vessel were prioritised.



Denis Graham Palmer.

Mussel farming was in its infancy and Marlborough development retarded by remoteness. Delivery of floats south was challenging. Ferry costs were high and unreliable even without local deliveries. Palmer recognised the issue and stepped up, careful to complement activities of existing operators like barge services and mail. Some simple framing design saw up to 150 floats delivered per trip to every nook and cranny of the Sounds. Three trips per week, weather permitting.

Vitally, many farmers, amateurs with vision, could only afford small batches which Palmer, unbelievably a one-man operation, arranged, loaded, delivered, unloaded, and secured those loads the full length and breadth of the Sounds. In addition, he transported building materials, water tanks, passengers, scientists, fishers, pets, and pest controllers. Over 650 crossings without mishap but many close calls due to others. Ensuring moorings were correctly positioned and safe was almost a hobby.

There were the many rescue missions, Cook Strait swimming records, free Boating Club excursions to Maud Island, mooring maintenance, wharf scouring, supplying

OBITUARY

fishing vessels with LPG during a ferry embargo, and supplying Mac's Brewery with bottles during the ABC cartel embargo. Palmer was always there when the small folk were backed up against the wall. Police, Navy, and Boat Club plaques were proudly mounted in the galley. He instigated many shearer's quarters being converted to casual accommodation to support outer farms beginning with Moleta's at Titirangi.

Bureaucracy, in the form of the Marine Board (now Maritime New Zealand), became a focus for some years. The book and more were hurled at him. Spies were placed and even Brothers Island lighthouse keepers in the Cook Strait were asked to report crossings. *MV Enterprise* was used as a chase vessel. This was great fun for Palmer and his many supporters. He mailed to the mast all of the survey requirements, *Mazurka* was possibly the most over-surveyed and capable vessel of its size in the world. Palmer took safety seriously. He gained Master River Ship, Engineer and Master Restricted Limit. The courts finally recognised this, and the battle was won politically, as he proved the case for the Cook Strait Corridor to be created. Ten years had lapsed, and the mussel industry had gained impetus, a southern float factory built, and an explosion in charter fishing boats were the new reality.

Without enough challenges, in 1984 Palmer farewelled his family, friends and enemies at Bill

Brownlee's wharf at Te Puru. Using self-taught dead reckoning and sextant he made Brisbane within three miles of target. Beyond circumnavigating New Zealand Palmer returned three times across the Tasman, and circumnavigated the Philippines, exploring Borneo and Indonesia. *Mazurka* was his home and became a competent and comfortable dive and back packer charter vessel. A Rolls Royce six-cylinder engine and twin disc gearbox made her an economical cruiser. Sail was added to make her more kindly. Naturally, the tender was a fast alloy jetboat of unique design. Many adventures were had and are a book alone. Scallop season raft-up with Rex and Betty McNabb were a highlight.

Failing eyesight had him sell *Mazurka*, which became a dive charter vessel in Tutakaka and he decamped to Brisbane. He missed his old mates and returned to Blenheim for some years but his mates passed on, so he headed back to Queensland enjoying the warmth and greater Government support afforded him. Palmer's longevity belies the adventurous, laborious, and high-risk life he lived.

A legacy? Palmer's family may feel they were secondary to his life and fate but anyone with guts, grit, and faith who met him, remember the day.

Home is the sailor, home from the sea, And the hunter, home from the hill.

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Hamish 027 220 5122
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Karyn van Wijngaarden
Partner
027 479 4345
Karyn@oceanlaw.co.nz



Hayley Campbell
Senior Solicitor
027 533 1350
Hayley@oceanlaw.co.nz



Kim Proctor-Western
Special Counsel
M 027 4800 690
kim@oceanlaw.co.nz



Mike Sullivan
Consultant
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Ford aux. 20kVA generator
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LOA 13.53m x B4.88m
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33m3 - 15tons.
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100 miles Expiry 2027
\$295,000



5371 TRAWLER BUILT 1981
LOA 19.81 x B 5.54 x D 3.07
Main Cummins KT19 272kW
Aux Isuzu & 25kVA generator
Twin Disc 516 5:1 gearbox
Fuel 7,500 ltr. Water 2,000 ltr
Fish hold 560 bins/35 t bulk
5 berths. New galley. Good
electronics. Split winches
Survey - Offshore Fishing -
100 miles Expiry 2026
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5359 TRAWLER TROLLER
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Detroit 6/71 174hp
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Ice hold 7 ton/140 bins
Double drum winches
Area 7 flounder quota
available. Survey limits
Coastal restricted to VHF
coverage
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Blyth Spirit.

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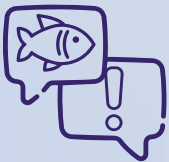
CONTACT Peter: 027 450 7585 | 0800 DEEP SEA | 0800 333 7732 | peter@deepsea.co.nz

www.deepsea.co.nz

SFMblue

A WHOLE NEW MARKET AT THE CLICK OF A BUTTON

SFMblue is an online digital trading platform connecting buyers, suppliers, fishers and wholesalers of quality seafood. It is a fast, intuitive, and user friendly tool that will transform the way you trade seafood.



DIVERSE RANGE & ACCESS

Easy and efficient procurement and ordering tool for purchasing seafood.



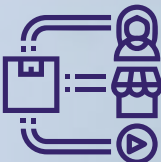
SET PRICE SALES

Use SFMblue to sell fresh product at set price, including while it's in transit to auction.



TRACKING & TRACEABILITY

Receive notifications on how your purchase is tracking and when it's available to collect.



NEW SALES CHANNELS

No longer just a market for fresh seafood. List your frozen, processed or long-life product on SFMblue.



Scan the QR code or head to
SFMblue.com.au for more information
on how you can join today.



Contact us:
+612 9004 1188
info@sfmblue.com.au