SEAFOOD NEW ZEALAND

Consumer research guiding mussels to world markets

Sustainable tuna hits global milestone

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In this issue

ISSUE #265:

Welcome to the December issue as we head to the end of a tumultuous year that has included world trade turmoil, a fractious US election, ongoing virus restrictions, increased environmental pressures and unprecedented budget blowouts.

On the home front we have a re-elected standalone Labour Government and a new minister in David Parker succeeding Stuart Nash after one term and an enhanced fisheries portfolio that encompasses oceans.

We live in interesting times.

Our cover story features the innovative consumer testing conducted by Plant & Food Research in conjunction with the Cawthron Institute that is helping boost greenshell mussel production, our number one export species.

The seafood sector is filled with strong characters and we meet two of them – Pam Williams, a rare woman in a tough masculine world, who founded a Whanganui deepsea fishing company, and retiring scientist Alistair Jerrett, who masterminded Precision Seafood Harvesting and the export of live snapper to Japan.

News coverage includes the launch of an extensive project to keep fishers safe at sea and optimism for paua on the Chathams.

You can also read about a cutting-edge packing solution for seafood as an alternative to non-recyclable polystyrene and sustainable tuna hitting a global milestone. And in the Coromandel a onetime seaweed nuisance is being turned into a lucrative crop.

Our best fish 'n' chips column continues to celebrate the country's number one takeaway – this time we profile the Mapua Smokehouse and add a related delicious recipe. We also feature the views from the regulator, Fisheries New Zealand, and Seafood New Zealand chief executive Jeremy Helson and a call from Federation of Commercial Fishermen president Doug Saunders-Loder to do the right thing on the water and promote our industry.

We wish you and your families and colleagues a safe and happy Christmas and New Year and look forward to bringing you the best of our vibrant industry in 2021.

Tim Pankhurst
Editor

From the chief executive

Dr Jeremy Helson

The year 2020 saw few conferences on the calendar as social distancing requirements in the wake of the Covid-19 pandemic emptied venues globally.

Seafood New Zealand's conference suffered the same fate in August, along with the Maori Fisheries conference and the Aquaculture conference.

The conference environment is an opportunity for the disparate entities that make up the diverse New Zealand seafood industry to come together – a rare chance to put rivalries aside and celebrate what we all have in common.

It was with that in mind that, this year, Seafood New Zealand decided to hold a smaller event to bring parties together.

The Seafood New Zealand Workshop was held at the end of November and followed a different format to a usual conference. Designed to foster discussion, rather than the participants being presented to, it was a chance to debate some of the more difficult issues facing the industry in a free and frank manner.

Facilitated by Phil O'Reilly of Iron Duke Partners, panels of industry and non-industry participants were provoked to give their views on five themes; Growing Market Value, Thriving Coastal Communities, Fishing with Care and Precision, Healthy Marine Environment, and Modernising Fisheries Management.

The industry was also grateful to have the newly appointed Minister for Oceans and Fisheries join the Workshop to talk about his new portfolio.

David Parker was relaxed and engaging, whilst admitting the portfolio was very new and he was still feeling his way through the issues. As we know, the issues are many, however the base on which the Minister gains the portfolio is strong. The Quota Management System has served us well, our fisheries are healthy, and innovation is constantly improving fishing methods and endangered species mitigation.

A Minister who listens to industry and understands the science that informs the decisions that need to be made is always to be welcomed. Mr Parker holds other, loftier portfolios and as Attorney-General, Minister for the Environment, Minister of Revenue, and Associate Minister of Finance he is also the highest ranked Minister for some years to hold the fisheries portfolio.

This is an opportunity for industry to make real progress on issues that have dogged it for years. Mr Parker is known for his keen intellect and ability to problem solve. However, we must also recognise Mr Parker's green credentials. He is an environmentalist, although we would argue that the large majority of the industry also values environmentally friendly outcomes whilst still providing quality seafood and contributing more than $4 billion to New Zealand's economy.

As we head into the Christmas break, I would like to personally thank you all for your contribution as an essential industry through 2020. You performed exceptionally well under difficult circumstances. You kept your staff safe, nimbly changed your retail methods and continued to supply fresh, quality seafood to New Zealand and the world. You also did far more than the average Kiwi realised to supply seafood to those in need through community outreach services and Marae.

You went over and above. You deserve a great break.

Keeping fishers safe at sea

Tim Pankhurst

There are still too many fishermen being injured and killed, says Darren Guard.

"We have to change that."

Guard is seeking to do just that with a MarineSAFE programme backed by the NZ Federation of Commercial Fishermen and $250,000 from the Accident Compensation Commission.

The first of a series of safety videos was posted last month and will be added to over the next six months.

The videos, with accompanying training modules and assessments, will cover induction – welcome to a fishing vessel and the industry; risk management including hazards on a vessel; fishing operations – the different methods and risks; lifesaving appliances and personal protective equipment; knife safety (20 percent of injuries are from cuts and stab wounds); wharf and loading safety and manual handling (51 percent of injuries are strains and sprains); and machine safety.

Experienced crew know when shifting fish boxes on a rough platform to use the motion of the vessel to their advantage. Tyros risk a strained back.

Guard, managing director of the Nelson-based firm he founded, Guard Safety, has written all the scripts.

"I've used fishermen's language, tried to keep it relaxed and put my experience at sea into it," he says.

"It is designed for new and existing crew and while educational, to also be a good yarn."

Guard has had a lot to learn too, in his case about digital editing.

He has worked with local company NakedEye Digital Vision to master filming, editing, post-production, script writing and voiceover.

His approach is driven by a view that land-based training is not fit for purpose, that those on shore do not understand the risks and hazards of commercial fishing.

The beauty of online learning is that it can be completed anywhere at any time – fishermen do not have to spend hours in a classroom on trips off, on their own time at their own cost.

And some have literacy issues and are not receptive to such formal education.

Guard says the penny dropped when his dyslexic daughter produced an intricate dragon made from rubber loom bands.

Darren Guard – fisherman turned educator.

He was astounded and asked how she had done it.

"I saw it on YouTube and they told me how to do it dad," she explained.

"Online learning is the way of the world, especially followed with real world experiences" Guard says.

The MarineSAFE programme is based on the inshore fishery but has an eye to expanding to the deepwater and aquaculture sectors.

There are milestones that ACC expects to be met, including a demonstrable reduction in harm.

Major seafood companies have operated the NZ Health and Safety Forum for several years and Guard works closely with that group.

Like his forebears going back to Jackie Guard who began fishing in New Zealand in 1827, Darren Guard has the sea in his blood.

And, like many, he has come close to disaster, having first-hand experience of the perils of fishing.

In his mid-20s he was skippering the Guard-built Kathleen G (named after his grandmother Gwen) in Cook Strait, trawling for hoki, when a vicious southerly struck.

In company with Pursuit and Lady Anna, they knew bad weather was due but believed they could get away with one shot, fill up and scoot home to Picton.

NZ Federation of Commercial Fishermen president Doug Saunders-Loder being filmed for one of the MarineSAFE safety videos.

Guard began hauling as the wind picked up to 50 knots and the swells built.

But unbeknown to him, one of the crew thinking he was being helpful had made some net modifications that allowed excess fish to be caught.

Instead of a maximum bag of 20 to 25 tonnes, there was as much as 50 to 70 tonnes in the net and it was pulling the boat under.

The stern was under water, the decks were awash and Guard was so frightened he got the crew into the wheelhouse and rang his wife Karen at 1am to tell her the situation was desperate, he had made a fatal mistake, that it was his fault, he loved her and it was goodbye.

"She still hasn't forgiven me for that call," Guard says, 24 years on.

But then he found courage and determination.

"I said a prayer and thought hang on, there's 200 years of boat building knowledge in this boat. No, this is not going to get me."

He kept the boat going ahead under full revs, got as much fish on board with the crew working in waist deep water as they could, and eased the boat around alongside the floating bag that was threatening to sink.

There was one shot at hurling a grapnel at a buoy attached to the cod end, hauling on that to release the knot and open the net up and flush out all the remaining catch.

They had survived, just, "and we got our load", Guard says with evident satisfaction.

"That's when I started paying attention to safety.

"Too many die from a mix of youth, enthusiasm, greed and bad decisions."

Guard, 49, left fishing in 2010 when his family sold their interests and did stints with Sealord and Maritime NZ before establishing his safety company.

"The thing I miss is the groan of the winches and the colour of the water turning blue before the bag hits the surface," he says.

"It took me 10 years to stop dreaming about that."

It is that practical background and understanding of a unique livelihood that qualifies Guard to be an ideal educator for the seafood sector.

There's no question our kiwi fishing fleet faces plenty of headwinds - complex regulation and compliance demands, shrinking inshore fisheries, costs that only seem to go up, human resource headaches and increased customer sensitivities in a demanding marketplace.

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Giving it all up to grow seaweed in the Coromandel

Take one highflyer in the Australian public service and one mussel farmer in the Coromandel and you get the most unlikely but inspirational story of the beginning of a seaweed empire. LESLEY HAMILTON reports.

Lucas Evans spent 20 years in the Australian public service, leading airport planning in the aviation space for the Australian Border Force and the go-to man to manage the airport arrangements for international political forums, rubbing shoulders with prime ministers, presidents and royalty.

Lance Townsend was dragged to Coromandel as a kid by his dad who decided he had had enough of being a Trinity College-trained, world famous classical guitarist and wanted to go fishing.

Then Evans married a Coromandel girl, the two men met and hatched a plan that would see the beginning of their now burgeoning seaweed enterprise, Wakame Fresh.

"I came over to Coromandel for a three-month holiday after I had finished a big job at the Commonwealth Heads of Government Meeting (CHOGM) in Perth. I looked after all the airport arrangements for the visiting Heads of State. I wanted a change and told Lance I wanted to stay in Coromandel and catch fish," says Evans.

"He was farming mussels by then and told me about this seaweed called Undaria that attached to the mussel lines and we talked all night. I went home to Canberra the next day and that was it. We turned it into a business over the next six months."

Townsend followed his father into commercial fishing when he was a teenager before moving into mussel farming.

"I did about 18 years for Sanford and developed their farms out here in the early days. That night with Lucas we stayed up until three or four in the morning talking about what the next best thing to get into would be. I had been in the mussel farming industry for 30 odd years and this seaweed just kept turning up on the lines and it was just a nuisance we had to get rid of. Originally, we were just thinking of harvesting the Undaria for fertiliser, but others were doing that. We knew it was edible, so we decided to

Undaria on the mussel lines, Coromandel.

go down that track," Townsend says.

Undaria is an invasive pest that is native to Japan and arrived in New Zealand on the bottom of a vessel. The two men began harvesting the weed by going out in small boats, blanching it and then freezing it in 2012.

Their first breakthrough came when celebrity chefs Wylie Dean and Mark Southon were visiting Coromandel.

Townsend says they were in town doing a wild food challenge.

"We had just blanched our first batch of seaweed and we offered it to them to try. They came back and told us our seaweed was amazing and asked for some more. That was our first sale."

> **"We have uprooted, resigned from our jobs, and are now committed to contributing to the future of the New Zealand seaweed sector."**
> **– Lucas Evans**

While they started small and local, the ultimate goal was to sell it back to Japan where it is prized as a food, however they found that to do that the method of preserving it had to change.

Evans says the Japanese looked at their operation but wanted the traditional heavy-salted Undaria, or Wakame, they were used to.

"The Japanese came here several times and we went over there to learn their methods," Evans says.

Lance Townsend says it was a big change from the way they were originally processing their product.

Evans says salting makes a better product.

"It's all around keeping the colour, the texture and the flavour. The Japanese have been doing it this way for many years."

He says doing the salted method was far more complicated than they thought it would be.

"At every twist and turn we learnt something. We took a circular approach. Built something, tested it, broke it and then built something again."

The seaweed is harvested, immersed in hot water on the mussel barge which turns it from brown to emerald green It is then salted in a heavy brine before excess water is removed and it is packaged before freezing.

The mid-rib of the weed also has to be removed.

"And this is really labour-intensive work. You have the likes of China, Korea, and Japan who can produce it much more cheaply. So, the only way to counter that is by being the best of the best. Now some of those markets have started coming to us because they are dealing with issues in their own countries like contaminated waters that make our product more attractive than their own."

In 2019 Wakame Fresh were the first recipient of Sustainable Food and Fibre Futures funding to explore the feasibility of producing salted wakame for the Japanese market. This later led to the development of

Lance Townsend cutting undaria.

Lucas Evans on the barge.

The finished product.

a memorandum of understanding between the New Zealand Government, Ngai Tahu and their Japanese partners, outlining an opportunity to collaborate on seaweeds between New Zealand and Japan.

"That got a groundswell going. It also connected us to MBIE and MPI and gave us visibility," Evans says.

Those connections allowed Evans and Townsend to learn a lot about growing the business opportunity in the context of exporting. But, then Covid changed the game. Ever resourceful they are looking at it as an opportunity to diversify their product lines.

> **"I started doubting myself and asking Lucas if he was sure. He stopped the car, looked at me and asked if I wanted to turn back. We didn't turn back."**
> **– Lance Townsend**

Evans is passionate about the future of seaweed.

"It's going to be a long haul but hopefully the next generation will benefit from what we are doing now. We will wild harvest Undaria for the wakame, but I am passionate about the development of a seaweed farming sector in New Zealand, which may include multiple native and other species. For example, Asparagopsis is known to reduce methane in cattle when incorporated into feed. There are many other seaweeds which may have similar or equally exciting application," says Evans.

So passionate that Evans has given up his high-powered job in Canberra and moved permanently back to Coromandel with his family.

"We have uprooted, resigned from our jobs, and are now committed to contributing to the future of the New Zealand seaweed sector."

He says it's the right time.

"The time wasn't last year or a couple of years ago. The time is now, when the opportunities are looking clear and relationships are extremely strong. The timing is right. I didn't want to look back and think what could have been. I'm not sure we would be getting enough traction if I wasn't putting the energy in full time.

While Townsend has a fulltime job as a mussel farm skipper running a barge and crew, he is pleased to see Evans back for good.

Townsend says Evans' people skills were invaluable.

"I am the eyes and the ears on the water, sourcing the weed, organising the barges. And Lucas manages the business, attending to the compliance requirements, marketing, sales, finances and other business management. He has got us to where we are. We are an amazing team with two totally different roles. Those relationships and knowing who to call when you needed advice helped hugely.

"The seaweed is only there for three or four months of the year, so you have to get everything in place for that time. The other eight months I will be a mussel farmer. The good thing about it is the mussel farming slows down when the seaweed comes on and as a seaweed harvester you need people like me who can go out and collect it," says Townsend.

The next challenge is to further understand how Undaria harvesting may work in the context of mussel farming.

The pair originally worked alone but now work in collaboration with mussel farmer Gilbert James of Gold Ridge Marine Farm who was critical to the establishment of mussel farming in the Coromandel. He brought mussel farming to the region in the 1980s.

Evans says it makes sense to collaborate.

"We are excited at the opportunity to work with Gilbert and Gold Ridge. The infrastructure is already there, it's suited to seaweeds and, for a mussel farmer it may prove to provide an alternative source of income. Gilbert has a strong appetite for innovation and has provided us with significant support, such as access to a barge and water space. He and his team are supporting us to investigate opportunities to improve on all levels."

Townsend admits he was always the most cautious of the two.

"I remember when we had our first commercial batch of Wakame, in flash packaging, and we were driving to Auckland to sell it to restaurants and we got to Thames and I started doubting myself and asking Lucas if he was sure. He stopped the car, looked at me and asked if I wanted to turn back.

"We didn't turn back."

Gilbert James, Lance Townsend and Kennidy Hale.

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Optimism for paua on the Chatham Islands

Nici Gibbs

Paua industry leaders at a community forum on the Chathams.

In these days of restricted international travel, the Chatham Islands are experiencing a domestic tourist boom. Flights are full, accommodation is booked and tour operators are busy, all of which is a welcome change after the hardships of lockdown.

Covid-19 has also been creating challenges for the paua industry on the Islands. Like much of the rest of the seafood industry, paua has been affected by restrictions in international markets and the future remains uncertain.

Nevertheless, the feeling in the Chatham Islands paua industry is buoyant. Attendees at a recent paua industry meeting put their optimism down to three unique Chatham Islands initiatives – their Fisheries Plan, the Harvesters Forum, and the Community Fisheries Forum.

When former Fisheries Minister Stuart Nash approved the Chatham Islands (PAU4) Fisheries Plan 22 months ago, he said "it is my view that the plan is beneficial in providing more responsive, localised management of the resource, increased stakeholder commitment to management decisions, and a more transparent operating environment".

Since that time, the plan has started to deliver on its initial promise. Gary Cameron, PauaMAC4 executive officer, says the plan has been central to moving the industry forwards.

"It gives us a pathway and a focus. We now have a strategy for how we will manage the paua fishery and the industry is united around implementing it. Because it's out there for everyone to see, the plan also provides a catalyst for industry engagement with imi, iwi and the local community."

One of the highlights of the Fisheries Plan has been the successful use of industry ACE shelving to reduce commercial harvest levels by 40 percent to safeguard the fishery while it rebuilds.

"The plan allowed us to implement ACE shelving with a much higher level of transparency and certainty," Cameron says.

"In 2019 the Fisheries Minister decided not to reduce the PAU4 TACC because the ACE shelving was in place and was being carried out in accordance with the Fisheries Plan. This was a major demonstration of confidence in the industry and the plan by the Minister."

Paua divers have reported how the stock around the islands appear to be responding well to the management strategies in the Fisheries Plan.

"PAU4 is due for a stock assessment in 2020/21, so then we'll have a better picture of how the fishery is doing – but at this stage, all the signs are good," Cameron says.

It is widely acknowledged that the Harvesters' Forum has been crucial to the successful implementation of the Fisheries Plan. The forum was established by commercial paua divers to improve communication and to provide an independent voice in discussions with quota owners. The divers' direct observations of the fishery are vital when it comes to designing and implementing management measures. For example, the industry has divided the PAU4 paua fishery into over 50 sub-areas and, for each, the divers discuss and decide what the harvest cap and minimum harvest size should be. The sub-areas and harvest caps help to spread effort around the entire fishery and the variable minimum harvest sizes reflect the impact of local conditions on paua spawning opportunities.

Paua Industry Council CEO Jeremy Cooper says "in our experience, this degree of harvester engagement in fisheries management, and the resulting positive relationships with quota owners and with the local community, is unprecedented. We hope it will be a model for other paua fisheries as well as for other inshore fisheries where there is scope to improve relationships between ACE-dependent fishers and quota owners".

The third unique initiative on the Chatham Islands is the Community Fisheries Forum facilitated by Fisheries New Zealand (FNZ). All sectors of the community, including iwi, imi, commercial fishing and tourism, are represented on the forum which meets regularly to discuss local fisheries management issues.

Mark Geytenbeek, who co-ordinates the forum on behalf of FNZ, says although the forum was established independently from the Fisheries Plan and has a wider scope than paua, the Fisheries Plan has provided a focal point.

"The plan has improved relationships between FNZ and the paua industry on the Chatham Islands – it means we all know what's expected of us and our roles in helping to implement it," Geytenbeek says.

For those of us from mainland New Zealand, the Chatham Islands initiatives could point the way. But as Cameron says, this is just the beginning.

"Local management of local fisheries is something Chatham Islanders have been aspiring to for many years. There's still a long way to go, but we've made a positive start which we fully intend to build on."

Image and column courtesy of Nici Gibbs.

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Pam Williams – first lady of the seafood industry

Pam Williams in her Whanganui home with a background model of an Oyang trawler presented to her by the crew.

Statues are out of favour but if Whanganui ever commissions one, it should be to honour Pam Williams. Made of steel. TIM PANKHURST reports.

The figure's ideal placement would be on the breakwater where the Whanganui River meets the turbulent Tasman Sea, one eye on the fishing grounds, the other on the struggling provincial city Williams has done much to support.

The former fishing leader, a rare woman in a bruising male environment, was tougher than most she dealt with.

Over 30 years Williams built a fishing business from one trawler in 1965 to become the country's second biggest privately owned fishing company, overseeing discovery of lucrative orange roughy grounds and exporting to 36 countries.

The business was sold to Sanford in 1994 and Whanganui is no longer a commercial fishing port, the end of a remarkable chapter in the development of the New Zealand fishing industry.

But at the age of 87 Williams is still in business, as a founder and director of Air Wanganui, providing ambulance services and charter flights.

She launched her fishing career in 1965 with the purchase of a trawler, Stella Maris, built by Doug Wild at Wanganui Boats, convincing local lawyer Gordon Swan to invest and partner her in the business Whanganui Seafoods in the days before the region added an aitch.

That relationship was to last for 55 years, until Swan's death this year during the Covid lockdown.

"It's at the bottom of Cook Strait if you want to see it," Williams says of that first boat.

Orange roughy and hoki processing lines in the company's heyday at its waterfront factory.

A second trawler, Supernova, also built by Wanganui Boats, was launched a year later.

Oceana was next, purchased from the McManaway family.

Galaxy, built by Nalder & Biddle in Nelson, followed and a further trawler, Kaikohe, arrived in 1977.

The inshore busines was healthy but Williams was outraged at the plunder of offshore fish stocks by foreign vessels that was of no benefit to New Zealand.

"The Russians, all the Asians were there – they were having a ball," she says.

"Huge ships were coming in. They were in our waters, taking the fish back home in their factory ships.

"We had all the fishing nations in the world. There was no monitoring of what they were catching. They could do what they liked – and they did."

> **"I was telling them all about it, how to cook it. It was something new and something different and they loved it."**
> **– Pam Williams**

That all changed when New Zealand's territorial waters were extended to 200 nautical miles under the 1977 International Law of the Sea, creating the world's fourth largest Exclusive Economic Zone.

Williams wasted no time in stepping into the sudden void.

Until a New Zealand-owned fleet could be built up, the Government encouraged joint ventures with overseas fishing companies.

Williams lobbied Ministers – including Jim Bolger (Fisheries), Brian Talboys (Trade) and Prime Minister Robert Muldoon - for deepwater quota and was rewarded with one of the seven licences granted, beating off powerful and influential applicants including corporate raider Brierley Investments.

Oyang Fisheries of South Korea was identified as a suitable offshore joint venture partner and Pacific Oyang Ltd, was formed, with Williams as its managing director.

Two deepwater freezer trawlers – Oyang No.3 and Oyang No.5 – were provided under the agreement. Larger vessels – Oyang 85 and Oyang 86 – later replaced them, demonstrating the Koreans might be good at building and operating fishing vessels but were singularly unimaginative in naming them.

"Before we only looked at snapper and things on the coast," Williams says.

"We had no idea we had all these other species. We'd never heard of orange roughy. And we found it in very deep water out west on the Challenger Plateau. Others claim they found it first, but our Korean vessels found the orange roughy and it became a very popular commodity. No one can argue that."

The Oyangs had the west coast roughy fishery to themselves for a time but word got out of the vessels returning to port laden with huge catches of 6-700 tonnes.

The company also joined an industry-wide consortium prospecting for new roughy grounds and had success at Puysegur to the west of Stewart Island.

It was one thing to catch the fish, another to process it and find markets for it.

A factory was built in the port area at Castlecliff, along with a 3000-tonne cold store.

The tricky Whanganui harbour entrance needed to be dredged and the company paid for that too, eventually leasing the port and running it through a subsidiary company, the first port in the country to be privately run.

At its peak the company employed 150 permanent staff in the factory, plus part-timers and contractors, selling under Neptune (inshore) and Trident (deepwater) brands.

Williams travelled widely, including to the Boston Seafood Show to promote the strange new fish with the unprepossessing name.

"I was telling them all about it, how to cook it. It was

An Oyang trawler unloading at the Whanganui port, an event that drew big crowds.

something new and something different and they loved it. It just took off. It was so popular. We could never get enough of it.

"American chefs loved it. It was so white. You could throw it against a wall and it would maintain its texture. It had very little taste, you could make it into anything, whereas New Zealanders like flavoursome fish."

In the late 80s the company entered a joint venture with the Russians to catch hoki with the vessels Kalinovo and Ugolny and the following year Serdolik and Mys Baranova.

When the Berlin Wall fell and Communist rule throughout eastern Europe collapsed, the crew of one of the vessels tore the hammer and sickle flag from the stern and presented it to Williams. She has it in her garage.

They also caught squid, with 20-30 squid jiggers coming from Japan every season, and entered a joint venture with Nippon Suissan and another with a Faroe Island trawler Polor Borg 1, although the latter did not go well.

"They didn't fit in with our style at all," Williams says. "They had silver service and bought a silver tray to serve dinner on."

> **"They called me President Pam and bowed every time they saw me. Of course, I loved that."**
> **– Pam Williams**

They were sent packing and after 12 successful years the joint venture with Oyang was also terminated.

The Koreans were popular, not least with the local ship girls, nicknamed the Mole Patrol. And there were raucous nights in the Castlecliff Hotel's public bar, known as the Pigpen. Money flowed, the port boomed, jobs were suddenly plentiful in what had been a depressed backwater.

Locals would line the wharf when the big boats docked and welcomed these mysterious newcomers.

A Korean cook on one of the vessels, Hak Rae Lee, was in demand at dinner parties ashore. He married a Kiwi, settled in New Zealand and opened a restaurant in Rotorua.

In Korea, the no-nonsense female fishing leader conducted business in prestigious clubs in Seoul, the first woman to enter such domains.

"They called me President Pam and bowed every time they saw me. Of course, I loved that."

She became used to being the only woman at the many business functions she attended.

"I never had any trouble," she says, of working in such a macho industry. "It's a myth, spread by men."

She was never intimidated, used to male company, having grown up with five brothers on a remote hill country farm in Whanganui's Waitotara Valley.

When her father died in her final year at secondary school, she was required to return home and work the sheep and beef farm with her two older brothers, supporting their mother and three younger brothers at boarding school.

She farmed in her own right before deciding on fishing as the business to be in.

"Farming was not going too well. I looked at fishing and thought it was a cottage industry. It was staring you in the face."

Williams was no country hick with dimpled elbows and scone mix in her hair.

Undoubtedly tough and shrewd and unafraid of risk, she had style, always well dressed and commanded fierce loyalty among her large staff.

She was always Mrs Williams, never Pam, to staff, even amongst the management team.

In the rough-hewn wider industry, she was commonly known as Ma Williams but the hillbilly image that evoked was far from the truth and did her a disservice.

Solander Fisheries founder Charles Hufflett rates Williams as a good friend but they got off to a rocky start.

"Our first encounter in 1966 was a stern telling off," he says.

"I was skipper of the Sea Harvester II and fished this large vessel inside the rolling grounds off Whanganui. Pam told John Treadwell, then managing director of Sealord, that large vessels should not be 'poaching' on

Nicola Williams today on the site of the former factory that brought prosperity to a struggling provincial city.

inshore grounds used by her fleet.

"I received a clear instruction not to trawl there again."

But they later worked together in a politically charged sector undergoing rapid expansion.

"These were times of great administrative change and Pam was a stalwart in fighting those which were impractical.

"Armed with a large handbag she was a force to be reckoned with. Even the youthful Peter Talley would keep his distance. There was a close relationship with Sealord in the early days and a mutual respect."

Current Deepwater Group chair Tom Birdsall worked with Williams on industry issues and also trod carefully.

"Pam was ferocious and did not take prisoners," he says.

> **"Farming was not going too well. I looked at fishing and thought it was a cottage industry. It was staring you in the face."**
> **– Pam Williams**

Williams never saw business – or life – in gender terms. Her considerable achievements were due to business acumen, grit and sheer hard work, not because she was a woman.

She turned down nomination as Business Woman of the Year but did submit to a Queen's Service Order for services to fishing and admission to the Fairfax Business Hall of Fame.

In an interview with the National Business Review in 1991 she provided an insight into her relentless drive.

"I play golf about once every three months. My industry doesn't lend itself to any extra-mural activities. If you have a business and you want it to succeed, you have to give it everything."

Williams' daughters Nicola and Philippa also worked in the business, first as teenagers on the factory floor.

Nicola, who has a Masters in Business Administration, became the company's finance director but her mother is still clearly the boss.

"Do you mind me making some comments?" she asks Pam during our interview at the expansive family home in Whanganui's upmarket St John's Hill.

"Not at all - if they're sensible," is the tart response.

She is not about to confirm her age either.

"Certainly not," she says. "Hundreds and hundreds. You should know better than to ask a woman how old she is."

Williams has packed plenty into that long life.

She had enormous self-belief in a robust, challenging industry and led from the front.

In life threatening conditions she would be up all night talking to vessels on the ship to shore radio she had installed in her home.

When Wanganui Seafoods was sold to Sanford for $36.5 million in 1994 ($62 million in today's dollars), Williams was bitterly disappointed when the company was moved out of Whanganui with the loss of many jobs in what was a significant blow to the local economy.

Then Sanford head Eric Barratt, who negotiated the deal on behalf of his board, says Williams will probably never forgive him but says there were no guarantees, either legal or verbal, that the company's operations would not be moved and Whanganui was not well situated.

Williams disputes this, saying there was a covenant in the sales agreement concerning maintaining local operations and this was why she did not accept a higher offer from an international company.

She maintained a fishing connection after the sale, chairing for five years the Fisheries Authority Committee, charged with bringing non-quota species into the Quota Management System.

Williams also headed the Accident Compensation Commission's finance and investment committee for nine years and served on numerous local boards and gave generously.

Daughter Nicola has continued in the same vein, spearheading a $50 million fundraising for a Sarjeant Gallery rebuild currently under way in the heart of the city.

The family's impact on the small, isolated river city has been immense and wrote an important chapter in this country's rich fishing history.

Orange roughy - the newly discovered deepwater fish that the Americans could not get enough of.

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COVER FEATURE

Consumer research guiding

Greenshell mussels, unique to New Zealand, are the country's number one seafood export. Innovative consumer research is helping ensure that remains so. TIM PANKHURST reports.

mussels to world markets

Size does matter when it comes to greenshell mussels and the China market.

That is one of many key findings from long-running, newly released consumer studies conducted by Plant & Food Research in conjunction with the Cawthron Institute.

The work centred on establishing Asian taste preferences for greenshell mussels, which are native to New Zealand and are the country's number one seafood export earner.

It began seven years ago, conducted by the consumer and product insights sensory team at Plant & Food Research's Auckland laboratories.

The project was in support of the New Zealand aquaculture industry's ambitious growth target of $1 billion in sales by 2025, almost doubling current returns.

Mussel exports totalled a record $336.5 million in the year to August 31.

Mussels are exported to over 60 countries.

The US is historically the major market, taking around 30 percent of the total, but has been hit hard by pandemic disruption and China is latterly the strongest market.

Then follows Korea, Thailand, Australia, Spain, Canada and Germany.

Frozen half-shell mussels were by far the dominant product, returning $225 million on 22,090 tonnes.

Frozen whole, frozen meat, processed powder, mussel oil and live were the other major categories.

The aquaculture bar was lifted even further last year when the Government released a strategy for a $3 billion aquaculture industry by 2035.

Cawthron is identifying and breeding for more stress tolerant and efficient greenshell mussels (Perna canaliculus), along with monitoring important product traits including size, colour, texture and odour/flavour.

The Cawthron-based programme, led by aquaculture group manager Dr Serean Adams and senior scientist Nick King, engaged Plant & Food Research to conduct consumer sensory research under a Ministry of Business, Innovation and Employment programme to grow and secure the country's shellfish aquaculture sector.

A total of 128 recently immigrated Chinese consumers were recruited and offered a variety of mussels prepared in different ways and grown in various locations.

Individually quick frozen greenshells were harvested from Marlborough, Coromandel and Stewart Island in January 2018 in small sizes and the following month in large size.

The study was overseen by Nelson-based Plant & Food Research scientist Dr Nicholas Tuckey and presented some serious logistical challenges.

"We had to control the entire process from harvesting to the consumers," Tuckey says.

"We had to work out how to prepare them and get them to Auckland – 120 samples over two days.

"The assessments were of colour, texture and flavour and we also had to be conscious of not overloading the consumers. People can only eat about six mussels at a sitting and provide us with reasonable information."

The results were surprising – size and colour were seen as more important than taste and texture.

"We thought there might be an ideal size but, in their minds, they were looking for something larger," Tuckey says. "It was an interesting finding; size really was a prime feature."

This is quite a different preference from the European and US markets.

Cawthron aquaculture group manager Dr Serean Adams.

Asian consumers mostly associated larger mussels with "large", "fresh", "plump" and "shiny" appearances. The taste/flavour of larger mussels was generally perceived as "typical mussel", "ocean/seawater", "strong flavour", "sweet" and "savoury" and the texture was mainly described as "juicy", "moist" and "tender".

The small mussels were mainly associated with less appealing appearance descriptors such as "small", "dry", "dull" and "old".

Mussels are easily identified by sex – the males are creamy coloured, females are a distinctive orange.

The Asian consumers showed a strong preference for the females.

"The brighter the orange the more they liked them," Tuckey says.

The study also assessed attitudes towards health benefits, fresh versus frozen, and food safety with regard to seafood.

It found more consumers agreed that eating mussels promoted well-being.

"There was certainly a food safety concern, but it was nice to see a recognition of New Zealand as a safe place to source seafood from," Tuckey says.

The work involved a large team that included Auckland-based Plant & Food Research principal scientist Dr Sara Jaeger & scientist Tracey Phelps.

A subsequent study in mid-2019 was conducted online, drawing on 534 frequent consumers of mussels or salmon in China. The survey was designed to elicit an understanding of attitudes and behaviours towards mussels and salmon specifically, as well as seafood more generally.

It was commissioned by the Cawthron Institute to gather quantitative data to support New Zealand seafood sector strategies.

The work revealed the existence of two distinct consumer segments, identified as Confident Cooks and Anxious Avoiders.

The former group are already established and confident in their seafood eating habits. Any communication to them needs to focus on the flavour and quality benefits of New Zealand produce. Confident Cooks prefer fresh over frozen seafood, they are driven by the eating experience and believe fresh seafood is of better quality and taste. They agree that New Zealand has a reputation for quality seafood and are satisfied that imported seafood can be fresh.

The Anxious Avoiders, however, are nervous about the purchase and preparation of seafood. They are often inclined to eat seafood only if someone else prepares it for them

"This category potentially offers the biggest opportunity if we are able to address their concerns around the risks that they associate with preparing seafood, as well as talk to its health benefits," the study found.

Around 75 percent of respondents liked the appearance of mussels, agreeing they looked beautiful served in shells, with an equal number saying they tasted even better than they looked.

The majority of consumers (80 percent) agreed mussels are healthy, are low in fat and calories and "the health aspects of mussels are more important to me than their taste" (77 percent).

Opinions were divided over the statements "frozen mussels taste just as good as fresh mussels" and "frozen mussels are of higher quality than fresh mussels".

The Confident Cooks were advocates for fresh over frozen, both in terms of taste and quality.

The Anxious Avoiders tended to favour frozen over fresh. This was seen as signalling safety and ease of handling and preparation to this group.

Scientists had the logistical challenge of transporting over 120 greenshell mussel samples to Auckland over two days. Recruits then made assessments of each sample's colour, texture and flavour.

This group is also considerably more concerned about the risk of food poisoning from eating mussels (and salmon), reiterating the nervousness that these people feel when preparing and purchasing seafood. Given the frequency of food scandals in China, consumers are highly suspicious of their food sources.

This is a key area of differentiation between the two consumer groups, particularly in regard to salmon.

"In order to grow share in the Chinese market, it is of critical importance to address the concerns of the more nervous Anxious Avoiders segment," the study concluded. "This could include food safety credentials, authentication indicators, and pack and product cues that preserve integrity but also allow product inspection."

A large proportion of Chinese consumers claimed to look for sustainability labels when buying seafood.

Two thirds (68 percent) agreed with the statement "I am actively trying to replace some of the meat in my diet with seafood". This suggests strong potential for change in consumption behaviour in this market.

A related but separate study devoted to the US market was more challenging given its size and variation and came up with different results.

In May last year 800 consumers participated in an online survey, which included assessing attitudes to salmon as well as mussels.

Mussels have a low penetration rate in the US (only one percent of households purchased the product when assessed in 2014, compared with 15 percent for salmon).

"The relative rarity of mussels on the dinner plate gives mussels a slightly elevated status over salmon, which is perceived as marginally less sophisticated than mussels, though both products are typically highly liked and considered far from ordinary by consumers," the study found.

"While around 80 percent of those surveyed said that mussels and salmon are versatile and fit into many different meals, and most are confident cooking with them, there is still a large proportion of consumers who are nervous when it comes to preparing them. This concern is more marked for mussels than salmon. This uncertainty has led many consumers to only eat them in the dining out situation.

"Has this association with a special occasion elevated them to the sophisticated status that they hold for many? If consumers were to become more confident in preparing and buying these products, would their premium status diminish?

"As exporters to this market there is a need to find the middle ground – more frequent usage, while maintaining their specialness."

The study threw up other important pointers to the market and areas New Zealand producers could exploit.

Around 40 percent of US consumers believed imported seafood cannot be fresh.

"Therefore, New Zealand needs a good story around the benefits of their frozen seafood," the study said.

It suggested one approach could be "frozen straight from the sea".

While over half of consumers agreed that mussels and salmon from New Zealand were consistently safe to eat, around a third were not sure.

This raises the question about whether US consumers are even familiar with New Zealand as a source of seafood, the study authors concluded.

Only a small proportion of consumers have an allegiance to buying locally produced seafood, which was seen as good news for our suppliers.

The work has been especially valued by Sanford, New Zealand's largest seafood company, which has invested heavily in mussel development through its SPATnz hatchery at Glenduan in Nelson.

"Previous research had focused on mussels cooked from fresh, but we wanted to focus on frozen half shell mussels

Study overseer Dr Nicholas Tuckey.

because this is the predominant product form," SPATnz general manager Rodney Roberts says.

"It is really valuable that Plant & Food Research has developed rigorous methods for comparing the sensory properties of mussels. The instrumental methods of measuring size, colour and texture could offer a screening tool that is highly cost effective compared to human sensory panels.

"I can see potential to apply this in breeding programme assessments, as well as in optimizing mussel processing operations."

He says SPATnz and Sanford had provided 20 selectively bred families from the mussel breeding programme, plus equivalent sized wild mussels from the same bay as

> **"New Zealand greenshell mussel farming is one of the most sustainable forms of animal protein production on the planet. With growing demand for high quality, sustainable protein and the availability of new water space for mussel farming, there is huge opportunity to sustainably develop this iconic New Zealand industry."**
>
> **- Rodney Roberts**

controls. Each group of mussels was processed through Sanford's Havelock factory into half-shell frozen product.

The human sensory panels gave all groups similar liking scores, confirming the mussel families will be well accepted by consumers.

"New Zealand greenshell mussel farming is one of the most sustainable forms of animal protein production on the planet," Roberts says. "With growing demand for high quality, sustainable protein and the availability of new water space for mussel farming, there is huge opportunity to sustainably develop this iconic New Zealand industry."

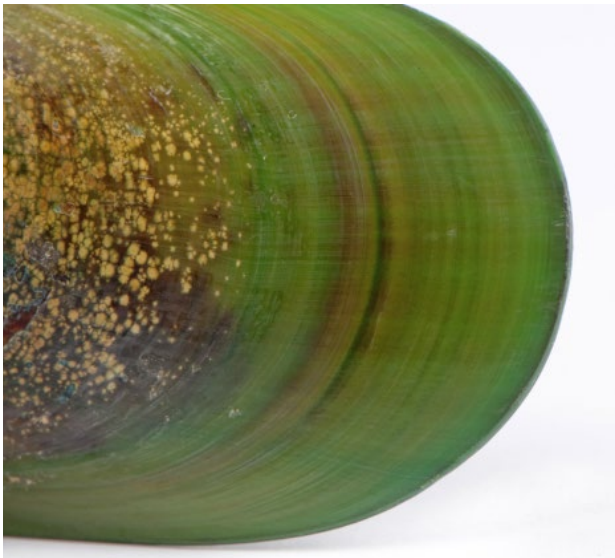
Tuckey is proud of what has been achieved.

"The team we assembled worked very effectively together and exceeded the goals that were originally set for the programme," he says.

"We delivered tools, workflows, knowledge and capability that are now available for the seafood-focussed breeding programmes taking place in New Zealand's seafood industry and scientific institutes.

"Working with such a talented group of people was a real highlight for me.

"Now, much like our industry, we're wanting to know how our global consumers will respond to a pretty challenging 2020."



Thinking outside the box: A cutting-edge packing solution for seafood

A new take on the humble cardboard box from Australian start-up, Planet Protector Packaging, is transforming the seafood distribution chain. EMILY POPE reports.

The innovative Lobster Protector offers all the benefits of a thermal product and more, wrapped up in a deceptively simple, sustainable carton.

One hundred percent kerbside recyclable, biodegradable and made from all-food safe materials, it is the first packaging solution that is plastic-free and performs better than polystyrene.

An overflow of plastic in the seafood distribution chain was the company's founding motivation to design an alternative product, says Australian sales manager Patrick O'Flynn.

"Seafood was always the target market, and the biggest packaging market in terms of its polystyrene use. The amount they churn through is phenomenal.

"They say polystyrene takes over 500 years to degrade completely, that's if it degrades at all."

O'Flynn and Joanne Howarth, PPP's CEO, were working at a Sydney distribution centre for Australia's leading meal kit provider at the time.

"Polystyrene was being delivered day-in and day-out," O'Flynn says. "We were receiving product in polystyrene, packing meal kits in polystyrene, then redistributing it in polystyrene. The toxic fumes that came out of that warehouse were overpowering."

By the time the duo left, they were packing thousands of meal-boxes each week; driving Howarth's mission to find a sustainable replacement.

It took 18 months from prototype to commercialisation, but the final product has really delivered, says O'Flynn.

"Our product performs better thermally and has better control over humidity, carbon dioxide and breathability – all important factors when shipping live seafood."

The solution comprises a number of different component materials to form an ideal shipping environment for rock lobster, crabs and crustaceans.

A corrugated outer, lined with a proprietary water-

The Lobster Protector features a fibre board insert and wool insulation to keep the fish fresh, chilled and free from excessive moisture throughout the distribution process.

resistant laminate, retains the boxes' structural integrity, making it suitable for wet-environments without detracting from its recyclability.

"That was important," says O'Flynn. "A lot of boxes on the market are wax-coated, or foiled-lined and claim to be recyclable. But you have to peel the aluminium off to recycle them.

"It's time consuming and not a viable commercial solution."

The print can also be corporate-branded in up to 10 different colours – a major marketing draw-card.

> **It has taken 18 months from prototype to commercialisation, but the final product has really delivered."**
>
> **- Patrick O'Flynn**

"It's much more aesthetically pleasing and with 95-97 percent of lobster being exported to China, packaging makes a difference," O'Flynn says.

"You can put a traditional white poly-bin on the shelves with the same product, but testing has confirmed time and time again that our carton consistently sells faster.

A wool insert provides superior thermal performance, keeping the lobsters at a food-safe temperature of 7 to 12°C.

Wool's hygroscopic properties have the added benefit of removing moisture and CO_2, reducing humidity and improving oxygen flow throughout the carton too.

"Lobsters are a live product. They breathe and tend to lose weight in humid conditions. A loss of weight means a loss in market value. So, we needed a solution that would control humidity and remove the build-up of carbon dioxide in the box."

Opting to use a natural fibre not only improved product quality but led to lower mortality rates compared to traditional packaging, O'Flynn says.

The only glitch with wool was that lobsters wore it.

"The functionality of the product performed fantastically in terms of thermal stability on our very first trial into China, but our clients were saying the fish arrived covered in wool fibres – like giant lamingtons."

A second iteration of the design incorporated a fibre-board panel, separating the wool from the product and drawing moisture into drainage apertures in each corner of the box.

It took seven different prototypes for the Planet Protector team to reach the ultimate solution, working with a number of key district bodies, exporters and seafood industry players along the way.

It was a challenging yet rewarding process, he says.

"Change is difficult in any organisation. Even something as simple as transitioning from a poly-bin to the same sized, corrugated carton - people simply don't like change.

"Guys on the floor, packing fish for 25-plus years, claim 'poly' is their friend. 'It's worked, we've always worked with it and we love it' they say."

Chief executives, the decision-makers of today, have inherited polystyrene – it is a product that has been used successfully for 70-plus years. Changing to a new product requires putting their name to risk, O'Flynn says.

"You've got a perishable, high-value product being shipped. That's a big financial and reputational loss for the business if things go wrong."

Like most new products, ensuring the Lobster Protector was marketed at a competitive price-point was crucial for persuading clients to make the transition.

At most, the product costs 10 percent more than a poly bin, performs better than its counterparts and ticks businesses' green credentials.

"That was the hardest thing. Refining the product, cutting costs and re-trialling until we found an acceptable level of performance that was that little bit better than everything else on the market."

And the response has been positive.

PPP chairman Peter Hofbauer (left) and Australian sales manager Patrick O'Flynn receiving the PIDA award for their Lobster Protector.

To date, the company's products have diverted six million poly-bins from the landfill.

PPP's client-base has only continued to grow too. Big-players like My Food Bag, The Dinner Ladies and The Meat Box have opted for the sustainable solution, as well as local Kiwi seafood businesses, Akaroa Salmon, Mount Cook Alpine Salmon, High Country Salmon, Clevedon Coast Oysters and members of the lobster industry across both New Zealand and Australia.

It's a product that everyone loves, says O'Flynn.

"When they make that decision to switch, they really like it. Not just because of its performance, but partly because of the positive response they get from their own customers and end-users too."

The company has plans to expand its operation to Asia and beyond in the next five years, but for now its focus continues to be set on seafood across the Pacific.

"We're looking at immediate growth in southern Australia and New Zealand. There's a lot of seafood in the South Island of New Zealand but with that comes expensive logistics for transporting it north and vice versa.

In addition to its manufacturing plant in Onehunga, Auckland; PPP are establishing a base in the South Island to help distribute its product at a more competitive price point.

"We all want the same thing – sustainable solutions that make a difference for the generations to come. We're gearing up to spread that on a global-level."

The Lobster Protector recently received gold in the 'Food Design of the Year' category as part of the Australasian Packaging Innovation Design Awards. The Lobster Protector will now represent Australasia at the World Star Packaging Awards in Buenos Aires in May 2021.

For more information, visit:
www.planetprotectorpackaging.com

The Seafood Protector

Developed in 2017, the Seafood Protector was the company's first commercially viable, sustainable, cold-chain packing solution for seafood.

Designed to ship processed seafood – fresh or frozen, whole fish or fillets, oysters and more – the Seafood Protector keeps product under strict temperature controls with minimal waste and environmental cost.

An eco-friendly high micron plastic lines the box and protects the seafood, with a wool insert placed on top of the contents for added thermal protection. The box is then sealed.

More than 50 seafood businesses across Australia and New Zealand have transitioned away from polystyrene to use the Seafood Protector.

It boasts:

- Temperature maintenance of between 0 and 5 degrees celsius for 24-72 hours
- Material that is completely recyclable, biodegradable, compostable, sustain able and renewable
- A water-resistant design
- 100 percent Australian and New Zealand wool
- End-to-end user education for proper disposal
- Minimal storage, transport and waste-disposal costs

PPP's original thermal packing solution, the Seafood Protector.

Eureka moments that drive innovation

Retiring Plant & Food research scientist Alistair Jerrett has had a profound impact on the country's seafood industry. TIM PANKHURST reports.

The scientific world is filled with random breakthroughs.

Greek mathematician and inventor Archimedes leapt from his bath crying "eureka" when he realised the displaced water was a means of establishing volume or density of objects under a principle of buoyancy.

Scottish bacteriologist Alexander Fleming accidentally discovered the antibiotic penicillin when a mould contaminated a Petri dish he had left out while on holiday.

Alistair Jerrett's discoveries have been a lot less dramatic but still far reaching.

Jerrett, science group leader of Plant & Food's seafood production group, was instrumental in developing export of live fish, improved harvesting of farmed salmon and the groundbreaking Precision Seafood Harvesting (PSH) trawling.

All three relied on an "aha moment", when a random thought or a serendipitous event led to a new development.

PSH was an overnight success that in reality was the end of a long journey.

Eureka moments are rare, relative to the often long and grinding years that are involved in turning discovery into useful innovation. Many come close but miss the decisive moment. The world of innovation has 100 Pete Bests for every Beatle, as author Matt Ridley puts it in How Innovation Works.

And the process can be painfully slow. "It's not saying no that's the problem, it's saying yes slowly," is another Ridley observation which one reviewer suggested should be framed above every bureaucrat's desk.

Jerrett's journey began in 1982 when he joined the then Department of Scientific and Industrial Research (DSIR), at Wellington's Greta Point, before moving to the Leigh laboratory north of Auckland to work on live fish transport with an eye to the lucrative Japanese market.

"The Japanese economy was booming and paying phenomenal money," he says.

"A DSIR director had been in Japan and seen the high prices being paid for snapper at Tokyo's Tsukiji market. At the same time the DSIR was looking to invest in research projects."

> **"That's been the thrust of most of my career. Look after the animals and they'll look after you."**
> **– Alistair Jerrett**

Jerrett's initial project was on tuna burning, aimed at arresting stress in captured fish and preserving the quality of their flesh.

"In extreme exercise they digest their muscles. We were looking at ways to stop that.

"These things are Ferraris. Caught on hand line lures, they would effectively run the tissues out of energy. They'd exhaust themselves."

His research took him aboard Daniel Solander and several other catch boats.

At Greta Point - now the National Institute of Water and Atmospheric research (NIWA) base – he needed a more accessible model species.

Kahawai proved the ideal subject, with a substantial muscle line and an explosive burst of speed like tuna, they were present in Wellington Harbour and could be kept alive.

The fish were iki spiked in the brain and as long as they were ventilated with water run through their gills, the other life functions would keep going and the rundown of the tissues could be monitored for days.

"My ex-wife said, 'what would happen if you didn't iki them?'," Jerrett says.

"So, I put a nozzle in their mouths, strapped them down and ran seawater through their gills. Once the flow starts, they stop moving. The fish were quite inert. I kept track all day and went home for dinner. When I came back to check the fish was very pale and not moving and I assumed it was dead.

"Oh well, I thought, and took it off the nipple and was taking it to the chiller when it woke up and flapped and skittered across the floor. It had been effectively comatose, barely consuming any oxygen.

"I called it tonic immobility initially and thought it was an anti-predator reaction, playing dead. It increases the chances of survival. You can do the same thing with various vertebrates. You can see it when you turn a chicken upside down quickly, they go flaccid and inert.

"This led to a project to develop a live fish transport system."

Jerrett worked with fisherman and entrepreneur Barry Torkington and Don Bell, a chemical and process engineer from Process Development Ltd to design a model, which went into production at Polar Products Ltd, now the home of Moana Fisheries.

The fish were placed in custom poly bins – four snapper per bin – in shallow seawater inside a plastic bag with a battery powered aerator that scrubbed the carbon dioxide out, and transported in an outer cardboard box, at a ratio of 10kg of fish to six litres of seawater.

Delivered live, with atonic immobility there was no need to apply an anaesthetic.

The price in Tokyo soared from $10 to $25 a kilo for iki-spiked chilled snapper to $70 a kilo for the live fish.

Jerrett did similar work on live fish for the DSIR in Melbourne before settling in Nelson with Plant & Food and taking on a new challenge – improving the quality of hoki, the commercial fishery's most abundant and biggest earning species.

He was alarmed at what he saw when hoki trawls came aboard.

"A lot of the shots were very short, but the fish was bulk stored in pounds and often had to be broken out of the ice and vacuumed out of the hold," he says. "Some were good, some were mushy. Horrible. A large number of the fish were just trashed. Quite a number would not have heads, just be pulp.

"After demonstrating that simple casing and icing, rather than bulking, was superior we needed to figure out what was actually happening during exhaustive harvesting during trawling.

> **"The industry has clever people - the skippers, the crews, the salmon farmers. Just give them the proper tools, they'll use them."**
> **– Alistair Jerrett**

"I knew from our live transport work on snapper the value of quickly and humanely killing animals was in terms of high value sashimi production. Without any ability to control the trawling operation I needed a new model species.

"King salmon were the only species around at that time that we could get that could be tank-reared without the stresses experienced by wild fish brought into captivity. Coincidentally, the farmed salmon were showing a number of the same fillet defects on harvesting as shown by trawled fish. The harvesting process was pretty brutal.

"This showed that we didn't have control even over farmed fish. It became obvious that we needed to walk before we could run – tackle harvesting under the relatively controlled conditions of fish farming before we could attack harvesting in the open ocean. King salmon became the model for wild fish harvesting."

If stressed, salmon, like tuna and hoki, will exercise until exhausted and their flight can cause the tissue to rapidly break down. Struggling during harvesting can also cause bruising, red spots in the flesh and gaping in their fillets.

The Nelson Plant & Food team that brought PSH to fruition.

The question was: how do you quickly euthanase an animal that does not want to go near you?

"We had been using benzocaine, which is used in sunscreen as a topical anaesthetic," Jerrett says.

"I bought a bottle of clove oil at the local pharmacy and had an aha moment. I mixed it with alcohol, put it in the tank and it poleaxed the fish."

That led to the development of several formulations with subsequent patenting and production in Lower Hutt of the product marketed as AQUI-S, now used in aquaculture harvesting and handling around the world.

> **"You can flatten a battery by trying to start a car, or you can run the interior light for days." – Alistair Jerrett**

Jerrett also worked on catfish in Mississippi during the development, showing that rested harvesting was widely applicable. Rested white muscle tissue can stay alive days after harvesting in many species.

Jerrett remains a director of the company.

"After developing AQUI-S and showing the benefits of rested harvesting, we felt confident enough to go back to working on hoki, armed with a better understanding of what fish quality could be in the absence of stress and exhaustion," he says.

"That was the genesis of the PSH."

Jerrett figured he needed to see what was going on in the net to explain the marked differences in the state of the fish.

For that he needed a camera attached to the trawl and found ready support from then Sealord chief executive Graham Stuart and his team.

"Deepwater capable cameras were very expensive and often quite delicate, so we developed our own rugged and effective cameras, along with a number of custom analytical tools," Jerrett says.

Working with Suzy Black, he says his next aha moment was finding fish were swimming for long periods in the net before becoming exhausted and falling back into the cod end. The dying and dead fish blocked off the net, creating a bow wave. The key was to slow the water velocity.

"You can flatten a battery by trying to start a car, or you can run the interior light for days," Jerrett says.

"This concept was to explain how to get very high-quality fish muscle tissue. The concept we tried to embed was rested harvesting. It is hard to do in trawls but PSH demonstrated that controlled harvesting was possible.

"If you can keep swimming at maintenance levels, with a very low metabolism, rather than exhaustion levels, you could get live fish up on to the deck."

And after much experimentation that has been the outcome – fish landed in prime condition.

Seafood Innovations Ltd (SIL) provided early joint funding before the Government's Primary Growth Partnership stepped up with $28 million, matched 50:50 by Sealord, Sanford and Moana. About $48 million of the $56 million total has been spent.

"A really nice cock-up led to the version we've got at the moment," Jerrett says.

"We miscalculated how much stretch there was in the net and we could see small fish in the low flow being displaced out, being able to escape. There was a selectivity component as well as live fish. We ended up with a system that is effectively high grading and not killing the fish."

Jerrett believes that hoki treated with care is superior to the much higher value snapper.

"Being nice to your animals is just good business," he says. "That's been the thrust of most of my career. Look after the animals and they'll look after you. Graham Stuart used the phrase 'a true virtuous circle'.

"The industry has clever people – the skippers, the crews, the salmon farmers. Just give them the proper tools, they'll use them."

Jerrett is wearied by a demanding decade that included setting up a live aquaculture facility in new premises at Port Nelson adjacent to major fishing companies Talley's and Sealord and from battling bureaucracy.

"We wanted a mooring in Tasman Bay. It's been two years and we still haven't got it.

"On one hand there is a lot of support from MPI and then the process kicks in.

"Our biggest barrier is bureaucracy. What they know is process, not innovation and creativity.

"That is one of the reasons I'm chucking it in. I'm worn down.

"There should be minimal supervision needed to test new ideas, have an evaluation and if the harm is minimal, get cracking and get real data. Then sit down and review it and work out what the next steps, if any, should be. What happens now, even in order to get something simple there is a whole application process, a review panel, no guarantee of confidentiality and it can be sidetracked, there are so many hurdles.

"We've imported the EU (European Union). It's just too hard.

"They think they're doing the right thing, but they don't understand innovation.

"It's the Dilbert scenario – the bear dancing with the ant. Sooner or later, it ends badly for the ant."

Despite the frustrations, there are enduring achievements.

Timaru-based PSH manager Dave Woods worked on the project with Jerrett for eight years and found him to be extremely creative.

"He was the right person at the right time to bring that creativity to the commercial fishing sector.

"His lightning bolt moment came when he saw there were eddies in the trawl, areas of low velocity water flow and he transferred that across the whole trawl, moving from very turbulent to passive.

"I think we all hope in our professional lives that we leave things in a better state than we found them and Alistair can say he did that."

The PGP concluded in September 2019 but the three seafood company partners – Sanford, Sealord and Moana – continue to invest in PSH's development.

Changes in fishing regulations now allow the net to be used both inshore and in deepwater fisheries on a number of species. This flexibility will allow trawlers targeting snapper to also land hoki direct to the Auckland Fish Market without having to change gear. Size selectivity, benthic impact and Catch Per Unit Effort (CPUE) are all being monitored.

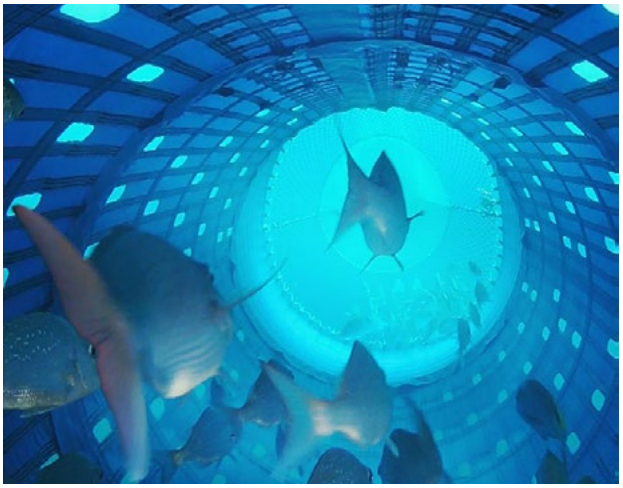
There is also international interest. Discarding of unwanted species is now banned in European fisheries but PSH allows fish to be returned live to the sea. That can mean all quota can be caught, rather than having a choke species that stops fishing effort because it mixes with other fish.

"I've had an awesome career and the opportunity to do the different things I've done," Jerrett, 60, says.

"But you get to the end of your run and it's time for new blood to take over. I've been in burnout phase, had a health scare and it's time to deinstitutionalize.

"My brother said it's 'persist or pivot' and I'm pivoting.

"I can cherry pick the things I want to follow up on. I'm a free man."



A PSH net in action allowing unstressed fish to remain swimming.

Live fish landed aboard a trawler using Precision Seafood Harvesting.

Sustainable tuna hits global milestone

Sales of Marine Stewardship Council certified tuna have more than doubled in the past five years, with more than 54,000 tonnes sold in 2018/19 alone. And with 28 percent of global tuna stocks having now achieved Marine Stewardship Council certification, the future for tuna looks bright. EMILY POPE reports.

It is one of the most widely consumed and popular fish in the world, but tuna's reputation as a sustainable protein has a history steeped in controversy.

The concern is understandable given the historical context, says Marine Stewardship Council senior tuna fisheries outreach manager Bill Holden.

"The Atlantic bluefin tuna population was severely depleted in the 90s after 20 years of overfishing," he says. "Numbers of Northern bluefin tuna have been in trouble as well."

But Holden says the state of our tuna, is increasingly positive, with the majority of stocks on the rise.

"Much of that growth in MSC labelled tuna is largely down to the healthy stocks and certification of tuna in the Western Central Pacific fisheries."

Globally, there are 23 stocks of tuna.

Of that, four core species comprise the 28 percent milestone: albacore, bigeye, skipjack and yellowfin.

The first tuna fishery to be MSC certified achieved certification in 2007. A major tuna milestone followed in December 2011, with the certification of PNA (Parties to the Nauru Agreement) – the world's largest tuna purse seine fishery. The PNA certification marked the largest volume of certified tuna catch to enter the programme.

"With that came improvements in data collection, management and operations on the water," Holden says.

New Zealand's West Coast albacore troll fishery achieved certification in 2011 too – a time at which there was large uptake in fisheries entering the programme, says Holden.

"It's been steady ever since.

"Together, with this fishery, almost half of New Zealand's marine catch is MSC certified, ranking 21st in the world in terms of its percentage of overall catch that

> **"It's the fish, but it's also the people. These fishermen understand that if the fishery is healthy, their livelihoods improve too. And that commitment to do better is more evident now than ever before."**
> **– Bill Holden**

is MSC engaged."

Voluntary and market-driven, fisheries that enter the MSC programme do so to improve their operations, optimise the health of the fishery and gain an advantage in the market.

The MSC standard operates on three core principles which every fishery must meet: examination of the species seeking certification; environmental impacts of that fishery; overall and specific management of that fishery. For tuna, that applies at a regional and international level.

"What makes tuna so different from other fisheries is that it is a highly migratory species requiring multi-jurisdictional management," Holden says.

"So as part of that process they look at the tuna stock and its management beyond the national EEZ. That's one of the biggest challenges of tuna fisheries."

A team of independent experts, the Conformity Assessment Body (CAB), prepares an Announcement Common Draft Report (ACDR), published on MSC's website. It invites stakeholders to provide comments on the report within a 60-day window. After a site visit and a review of stakeholders' input, the CAB produces a final report.

The outcome is a sustainability score for that fishery.

Underpinning the process are 28 Performance Indicators (PI) scored by the CAB. A fishery must score a minimum of 60 percent for each PI to achieve MSC certification. A score of 80 is considered "best practice" and a score of 100 a "perfect fishery". The overall score must be above 80.

Fisheries that score below 80 but greater than 60 still achieve MSC certification, but with conditions which must be met to maintain certification.

It's a very transparent process, Holden says.

"Each stage of the assessment has stakeholder input and the CAB's review identifies improvements that can be made in the management or operation of the fishery. It could be changes needed to the way a fishery operates on the water, for example.

"The idea is that during the five years of the certificate, the fishery would incrementally hit milestones that improve operations, data collection and management until it reaches unconditional certification at reassessment."

The assessment process from start to finish typically takes a year.

"It's the fish, but it's also the people. These fishermen understand that if the fishery is healthy, their livelihoods improve too. And that commitment to do better is more evident now than ever before."

Many of these aspiring fisheries voluntarily opt into Fisheries Improvement Programmes (FIPs). These are fishing companies, fishing industries and operators who are concerned about the sustainability of their fishery and opt into a FIP.

"Whether a fishery become MSC certified or not, they're all aspiring for a better fishery and to meet that standard within five to ten years' time," Holden says.

Some 40-odd tuna fisheries, representing 30 percent of the world's tuna catch, are currently engaged in FIPs.

"That's on top of the 28 percent of tuna fisheries in the MSC programme," Holden says.

"That means approximately 60 percent of the world's tuna stocks are potentially healthy. It's a massive amount of tuna in the pipeline."

With one in three consumers concerned that their fish won't be available in 20 years' time, the increasing amount of sustainable tuna is reassuring for consumers.

"You have eNGOs producing conflicting guides that tell consumers to avoid eating bluefin tuna or bigeye," Holden says.

"What they lack is the understanding that tuna is a highly migratory species, that's traded globally, with stocks varying by region.

"For example, a German seafood guide looking at bigeye could have a sustainability score that varies hugely from an American seafood guide rating the same species."

That's the beauty of the MSC programme, he says.

"It's backed by science and is a standard that consumers can trust."

Small boat Kiwi fishermen catch up to 2500 tonnes of

MSC senior tuna fisheries outreach manager Bill Holden.

troll-caught albacore each year, 99 percent of which is exported.

Talley's export sales manager Stuart Dixon says Spain was once their main buyer of tuna, but the international demand for MSC fish has meant the company's market has only continued to grow.

"We started supplying Asia, just 10 to 20 percent at first. Within three years that became 70 and 80 percent.

"We dipped our toe in and people now seek our product. MSC has been a big part of that diversification."

Acquiring MSC certification was a key part of Talley's assuring consumers of the sustainability of their seafood.

> **"Almost half of New Zealand's marine catch is MSC certified, ranking 21st in the world in terms of its percentage of overall catch that is MSC engaged."**
> **– Bill Holden**

"We understood very early on the importance of the MSC tick for consumers," Dixon says.

"It wasn't necessarily that you could get a premium for that tuna but that someone would buy your tuna over someone else's. It gives fish the Mercedes badge rather than the Holden or Isuzu."

"When our hoki gained the MSC tick it had uptake into franchise stores in the United States. We've now been supplying McDonald's for over 30 years.

"It's the same for tuna. Both consumers and clients choose our tuna over others because it's sustainable."

Equally, Dixon says the process is about caring for the resource.

"We're at the bottom of the word. Our fishery is pretty sensitive to what other fisheries across the sea are doing.

"Now more than ever, it's important that we manage it with the hope that others follow suit and implement best practice."

And the non-MSC tuna? It's a thing of the past, says Dixon.

"In the early days, we used to get asked if we had any non-MSC albacore for sale, simply because it was cheaper. Now, people want to know where their tuna comes from, how it's caught and want to see our chain of custody.

"Any cost we incur from the process is certainly covered in the long run.

"It's pretty amazing how things have changed."

There are currently nine more tuna fisheries in the process of MSC assessment. MSC's aspiration is for 30 percent of global fisheries, not just tuna, to be in the programme by 2030, a goal that's well on track for fulfillment, says Holden.

Second from top: The blue MSC tag indicates the tuna has been sustainably caught and allows it to be traced back to the company.

Third from top: Chef Josh Niland breaks down an albacore tuna for the Generation Seafood Masterclass at Sydney Seafood School.

Fourth from the top: Tuna tataki.

Watching the tide flow at Mapua Smokehouse

Tim Pankhurst

The tiny tidal port of Mapua once handled much of Nelson's apple crop bound for Mother England.

These days it is a tourist mecca, bustling with visitors drawn by its shops and cafés and crafts.

The popular Smokehouse fish 'n' chip shop has capitalized on that with a major refit and expansion.

Owner Peter Pattullo closed the shop for 15 weeks over the winter and the Covid lockdown, reopening in late September.

The Smokehouse, based in an old apple storage shed has been transformed from a poky shop to a bright and welcoming fish and chip café and retail outlet serving the entire range of the Smokehouses' delicious hot smoked seafood products along with authentic Italian gelato made just down the road in Nelson.

The shop was opened in the mid-1980s by Dennis Crawford, who now lives on a boat in the harbour.

Pattullo, took it over in 2014, seeing it as a business he could grow.

The shop serves 200 plus customers daily in the summer peak, but its capacity had become severely constrained, often with very long wait times. But as part of the new fit out, the capacity has been doubled along with a dedicated gluten free offering.

Fortunately, there is plenty to do at the picturesque wharf, from sampling beer or wine, having a coffee, cruising the crafts, eating ice cream or simply watching the tide flow and soaking up the sun.

Just Another Day in Paradise, the blackboard at the neighbouring restaurant says.

The Smokehouse's staple fish is ribaldo, a deep-sea species that is solid, tasty and moist and batters and fries well.

"We always have blue cod as well, very popular with visitors from Canterbury," Pattullo says.

"It's a more expensive option but it sells very well.

"We always have a range – gurnard, turbot, snapper, gemfish – depending on the time of year and availability and we try and pick a price point that we feel gives good value across a range of fish and tastes.

"We have some terrific local suppliers – the likes of Talley's, Sealord and Guytons – and really value the

A delicious feed at an outdoor table – but watch out for the seagulls.

Mapua Smokehouse owner Peter Pattullo.

excellent relationship we have with these guys."

Sanford, Westfleet and United are also really solid supply options.

The shop is open every day except Christmas, from 11am to 8.30pm in the summer.

There is seating in the expanded shop but the outdoor tables on and around the wharf are ideal for the fish 'n' chips feed.

Just beware of the aggressive seagulls. If they're not stealing chips, they're leaving their foul mark on clothes and seats.

The shop warns customers not to leave their food untended and do not expect a replacement if it is pilfered.

There are two arms to Pattullo's thriving business – fish 'n' chips on the wharf and the preparation of smoked fish, chowder, pates and pies at a factory in Stoke.

All fish product is hot smoked in small batches in brick kilns using manuka wood shavings. All vacuum-packed product has a shelf life of 28 days.

Smoked species featured are snapper, kingfish, hoki, mackerel, hake and white, blue and silver warehou.

The products sell into about 100 supermarkets, as well as being on sale at the Mapua store.

"We have a very strong local brand and a very good reputation for our products," Pattullo says.

"It is a great form of healthy protein, something New Zealand does very well and the growth opportunities are out there."

The company's promotions stress the sustainability of New Zealand seafood.

"The New Zealand Quota Management System (QMS) for ocean run white fish species is highly regarded worldwide for its focus on maintaining fish numbers," its product guide states.

"Many of the stocks that were overfished before the introduction of the QMS now have sustainable catch limits in place. New Zealand is one of the few countries in the world that has an internationally competitive fishing industry that makes use of a natural resource on a sustainable basis.

"Preserving the environment is core to the fishing industry."

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RECIPE

Smoked fish salad with lemon and herbs

This healthy dish from Mapua Smokehouse is packed with colour, flavour and versatility. Perfect for those lazy summer days.

Ingredients

2 cups silverbeet, thinly sliced

1 can white beans, drained and rinsed (try borlotti, cannellini or haricot beans)

1 pear, thinly sliced

2 radishes, thinly sliced

1 large smoked fish fillet, such as warehou

1 bunch dill

1 bunch fresh mint

1 bunch flat leaf (Italian) parsley

Lemon wedges

Dressing

¼ cup natural yoghurt

Juice of half a lemon

Pinch of salt

Freshly ground black pepper

Method

For the dressing, mix the lemon juice, salt and pepper into the natural yoghurt. Arrange the salad onto individual serving plates – starting with the silverbeet, then scatter over the beans, pear and radish. Flake pieces of smoked fish over the top, then drizzle with the dressing. Roughly chop the herbs, scatter over and serve with wedges of lemon.

Report, promote, engage

Doug Saunders-Loder

Well, the polls are closed and New Zealand has unanimously voted for Labour to represent us all over the next three-year term

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

Regardless of your political persuasion, it is great that we voted for a mainstream representation as opposed to any coalition.

Of course, the most recent media reports indicate that the Government wants to appease one of the minor parties and appear to be speaking with the Greens in this respect. That is extremely frustrating in my view because it undermines the concept of democracy.

New Zealand has spoken and Labour have reigned supreme.

To engage with anyone outside of this just amplifies how exposed we are to politics in this world.

We can't change that now, but we should take the opportunity of engaging with our Labour electorate leaders and hold them to account in respect of the economic benefits primary production bring our country.

The fishing industry is an essential part of that and we should be encouraged to innovate, develop our fisheries further, provide employment opportunity and generate economic relief throughout the regions that depend on us so much.

New Zealand and the rest of the world need sustainably harvested protein, something you are all involved in providing. So, let's up the ante, engage with our local politicians and ensure they understand the importance of each and every one of your businesses.

We need to drive a positive, factual and excited narrative about the positives of our industry and not get bogged down in defending the green extremism that has been at the forefront of the past electoral term.

Of course, that requires a level of responsibility we all need to muscle up on.

Keep an eye on 'that guy'. The guy that performs at a level that undermines all your hard work. Challenge him and surround yourselves with those that want to be here for the long term.

A key aspect here is to report, report, report.

MPI have recently sent out reminders about seabird and marine mammal reporting and clearly there are still a number of you that don't. Don't provide any ammunition for criticism.

Promote the positives on the water and share that with your neighbour, community groups and your local MP. We are all in this together and have a good story to tell so let's really start that and drive the discussion, not react to it.

Federation promote this positivity in the first instance by considering the most important part of our industry, the people. That's you and yours.

I have reported in earlier updates that we applied and received funding from ACC that has allowed us to develop a series of health and safety resources designed to support you and your crew in understanding key safety messages.

The Federation has teamed up with Guard Safety who have identified eight initial subjects (proposed by fishermen) that will be delivered using videos and an online learning platform.

We launched this in September under the banner MarineSAFE. For information you require, please email: info@marinesafe.nz

The first eight MarineSAFE topics covered include; vessel induction, lifesaving appliances and PPE, manual handling, knife safety, fishing operations, wharf safety, risk management and machine safety.

We are excited at the prospect of providing free health and safety resources that everyone can use. We are not trying to reinvent the wheel with this and recognise that you all go to great lengths to ensure that your boat and crew are well looked after. However, based on what you have told us, there is a need for simple, 21st century platforms that anyone can use.

We will gauge our development on the feedback we get and continue to shape them based on your need.

It's new in the fishing year so I hope that with fresh quota packages and healthy fisheries there comes an enthusiasm for a positive way forward.

Good luck.

Talley's

2020/2021

ALBACORE TUNA SEASON

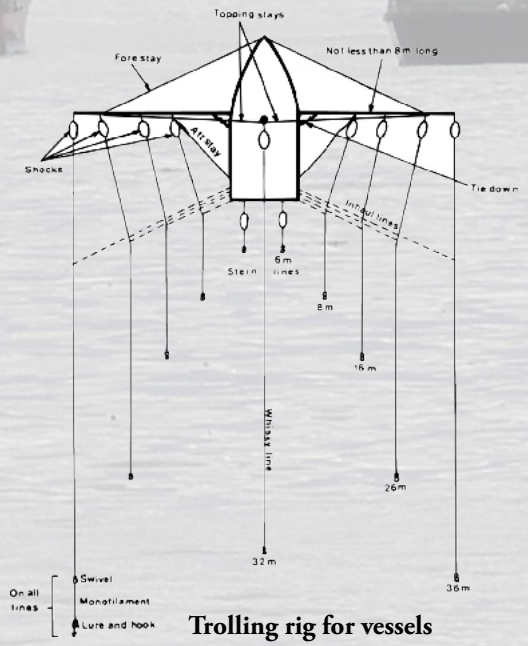
Talley's wish to welcome all Albacore Tuna fishermen to the South Island fishery where we operate the only complete chain of tuna receiving depots.

These buying stations are:

• Picton	Alf Reid		027 450 0501
• Nelson	Larry Moses	03-548 0109	021 438 387
• Motueka	Sarah Bradley	03-528 2800	021 284 2400
• Tarakohe	Alf Reid		027 4500 501
• Westport	Nic Langridge	03-788 9175	021 353 912
• Greymouth	Geoff Drake	03-769 9070	021 743 074
• All other Ports	Geoff Drake	03-769 9070	021 743 074

This season we will, as usual, offer our now legendary shore assistance to all vessel owners and crews.

- Speedy discharge
- Cleaning and sanitisation of fish holds
- Diesel at very competitive prices
- Use of our slurry bins
- Speedy payment
- Ice supplied



Trolling rig for vessels

We would like to buy your tuna, and will unload your vessel at any of the above buying stations. We will help you gear up your vessel so if you need assistance please phone us. Should you have a vessel that needs a skipper or, be a skipper who needs a vessel, please don't hesitate to call us. We welcome all enquiries.

PLEASE CONTACT

Doug Saunders-Loder
Talley's Group Ltd - PO Box 5, Motueka 7120
Telephone: 03 528 2823 - Cell: 021 527 472

Working together to lift our seafood industry

MPI's director of investment programmes, Steve Penno.

As Covid-19 continues to make waves around the world, New Zealand food, much like our passports, have gained the world's trust.

Our food sector is making a significant contribution both to New Zealand's economic recovery and by providing the world with quality New Zealand-made food products, and our fishing and aquaculture industry plays a big role in this.

New Zealand's natural landscape contains our most precious resources. As an island nation, this includes the ocean that surrounds us. Working together is essential to ensure there's enough seafood in our waters for current and future generations.

To maintain a high quality, sustainable supply of wild fish stocks and aquaculture we need science-based regulations. But more than that – we also need innovation.

Earlier this year the Ministry for Primary Industries (MPI) released Fit for a Better World – Accelerating our Economic Potential Roadmap which outlines opportunities for government and our food and fibres sector to boost export value and help New Zealand's recovery from Covid-19.

We're continually seeing innovation in the seafood sector to support sustainable practices in our wild fisheries and aquaculture such as improvements in fish catching technology, use of information technology, and new and novel products and approach to reduce waste. Continuing to improve and innovate will support our growth, and that's where MPI's Sustainable Food & Fibre Futures (SFF Futures) comes in.

The Ministry for Primary Industries (MPI) set up the SFF Futures fund around two years ago to support projects that address some of the most pressing issues in our food and fibre sectors. Climate change, pest and disease management, water quality, and food supply are just some of the areas of focus. And unlike previous versions of the fund, SFF Futures is open to innovative commercial fishing applications.

We're constantly on the lookout for fresh ideas to create more value. This includes protecting our fish stocks and seafood, right along the supply chain from ocean to plate. From multi-million-dollar partnerships to grass-roots $10k community projects – SFF Futures funds

projects of all sizes.

To date, MPI has funded two large-scale, seven-year programmes through its Primary Growth Partnership which now been incorporated into the SFF Futures. Precision Seafood Harvesting is a $48 million partnership with Moana New Zealand, Sanford and the Sealord Group, which has developed Tiaki, a new fishing method using a harvesting system that aims to target specific species and fish size. It also enables fish to be landed in much better condition than traditional trawls.

The other programme, which concluded this year, was the $26 million SPATnz programme. This sought to address our reliance on wild-caught spat by finding a way to breed consistently high-quality mussels in captivity year-round. This is a huge breakthrough for our mussel industry, which will provide significant economic returns.

SFF Futures also funds much smaller projects. For instance, Waikaitu Ltd, a Tasman district-based private New Zealand-owned crop protection company, is developing crop protection products based on the invasive seaweed, Undaria pinnatifida. They aim to transform this local seaweed from a costly mussel-industry pest to a sustainable, high value global market resource. Likewise, we supported Wakame Fresh to explore the commercial viability of turning Undaria into a premium edible export for the Japanese market.

Oysters also get a look in, through a project led by AquacultureNZ, which has developed a business case to establish a commercial-scale oyster hatchery and nursery.

SFF Futures helps bring ideas to life. It's a co-investment fund, so organisations are expected to contribute some cash – but we can consider combining this with in-kind contributions such as time, labour, and specialist advice. For community driven projects there's up to 80 percent co-funding on the table.

The SFF Futures team strongly encourages collaboration. Sharing knowledge and resources across organisations can really make a project take flight and create the outcomes they need. Above all, we're looking for proposals that are solutions- and outcomes-focused. Whether it's national in scale or related to just one local community, we are keen on initiatives that lead to positive, long-lasting change.

If you have good ideas that will make a difference to our fishing and aquaculture industries, I encourage you to get in touch and discuss your idea as a first step, no matter what stage your project is at. Around 50 percent of applicants are new to MPI and approximately 70 percent of applications are approved. The SFF Futures team can help you take your next step or see if there's a way to tweak your proposal, so it meets the criteria.

To find out more, talk to one of our SFF Futures representatives on 0800 00 83 83, email us at funding@mpi.govt.nz or visit sff-futures.mpi.govt.nz.

Changing Tides

This year saw the departure of three prominent chief executives – Te Ohu Kaimoana's Dion Tuuta; Sealord's Steve Yung and Sanford's Volker Kuntzsch.

Haere rā e te Rangatira o Te Ohu Kaimoana – Dion Tuuta

Te Ohu Kaimoana farewells te mātārae (chief executive) Dion Tuuta in early December after four and half years at the helm of the organisation. Dion joined Te Ohu Kaimoana following the 2015 statutory review process, navigating the organisation in an exceptionally challenging time, developing the largest fisheries policy unit outside of the New Zealand Government. At all times Dion has been steadfast in his commitment in honouring Te Tiriti o Waitangi and the 1992 Deed of Settlement, ensuring that the Crown honour its commitment to Māori.

"Dion has re-established Te Ohu Kaimoana as a strong national collective voice for Iwi fisheries and marine resources, and he was the perfect person to lead us through the post-statutory review period," says chair Rangimarie Hunia.

Dion led the organisation through many challenges such as the Crown's attempt to confiscate FMA10 from Māori without consultation, and a plethora of political issues in regard to the commercial industry in the form of attacks from media. Dion would always speak as a voice of reason, respect and truth in these exchanges and would not shy away from having challenging discussions.

Dion will be returning to work in Taranaki with his people as the Pouwhakahaere (chief executive) of Te Kotahitanga o Te Atiawa.

Tēnei te mihi ki a koe e te Rangatira o Te Ohu Kaimoana. Tēnā koe.

Volker Kuntzsch – Sanford

Having spent 25 years in the seafood industry on four different continents, it was fitting that Volker ended up down under. Straight from university, his first job in the industry had him dissecting thousands of hake at Sea Harvest in South Africa to determine a link between their reproductive stage, the area they were fished in and the quality of their flesh. Establishing that link was an eye-opening experience in utilising science to the benefit of the company, prompting an ambition to bring science and industry closer together.

Before joining Sanford in December 2013, Volker worked in Germany, the UK, Namibia, Japan and the US in roles ranging from quality assurance auditor to production manager and from marketing director to CEO.

Becoming the CEO at Sanford did not only turn the dream of living in New Zealand into reality, it also provided a huge opportunity to lead an iconic company towards achieving a compelling vision. Volker says previous experience had taught me how to bring unprofitable companies back to life. However, taking Sanford from a traditionally operations focused environment to a value-based business, complementing operational excellence with a focus on customers through innovation, service and sustainability, proved to be a mammoth task, he says. After all, Sanford was not in a critical state, which made the justification for the change far more difficult to explain.

"Nevertheless, transparency and ongoing communication, coupled with structural changes and a relentless focus on doing the right thing helped turn people engagement across the company to levels exceeding 75 percent," he says. "These levels reflect trust and enable change. They also reflect positive interaction with stakeholders and it was great to see how Sanford was increasingly referenced in a more constructive manner, than the seafood industry was generally used to.

"Building Sanford into a future oriented organisation that is now capable of creating greater and longer-lasting value from New Zealand's beautiful marine resources has been a great privilege.

"With more than 30 years in this industry I can hardly imagine leaving what has become my passion. While New Zealand is amazing, it is the wonderful people that have made my time here incredibly special. Needless to say, that meeting my wife Jodie here and growing our family over the last few years, makes this place all the more attractive. Yet, thriving on change and on making a difference and feeling so passionate about the seafood industry may have us move on in due course, albeit with a heavy heart. "

Sealord's Steve Yung succeeded by Doug Paulin

Officially taking the helm of Sealord on October 1, Doug Paulin's transition to chief executive officer was confirmed with a pōwhiri at Sealord's Nelson site.

The first internal CEO appointment in the company's history, Doug was formerly Sealord's general manager operations for eight years, moving into the role of chief operations officer for 12-months as he worked closely with outgoing CEO Steve Yung through a phased transition plan.

Doug began his career with the Royal New Zealand Air Force, followed by a successful 13 years with Lion Nathan working within sales and marketing.

Before joining Sealord, Doug spent five years as the chief executive officer for Hubbard Foods.

He has a BCom/LLB from the University of Otago, an MBA from Henley Management College in England and is a graduate of the Advanced Management Program at Harvard University in Boston.

Doug's whakapapa links him to Ngāti Porou and Ngāti Raukawa.

After leading Sealord for six years, Steve Yung is now the chair of Petuna Aquaculture, a salmon and ocean trout business in Tasmania owned by Sealord.

Sealord chairman Whaimutu Dewes extended his thanks to Steve for his huge effort in leading Sealord. He says Steve has done a superb job evolving Sealord into the organisation it is today with a strong performance culture, clear strategic focus in deep sea fishing and aquaculture, and consistent financial results.

Know your packhorse lobster

If you enjoy the occasional treat of a lobster dinner, then you are likely to be familiar with the fish markets, cafés and restaurants where you can purchase and enjoy such a meal.

But how do you know if your packhorse lobster has been sourced from a legitimate seller?

As local demands for packhorse lobster increases, so too does the opportunity for its illegal trade.

To combat this, Licensed Fish Receivers (LFRs) in the Auckland area are engaging in a horn tagging programme to ensure the ongoing sustainability and legitimate trade of these animals.

All packhorse lobster landed to an LFR premises in New Zealand will now be voluntarily horn tagged. This means, that each packhorse lobster for sale in shops and restaurants around New Zealand will have a white, numbered security tag attached to its antenna.

The tags are food safe, unobtrusive and the number identifies where the supply has come from.

The tagging programme will serve to reassure consumers their product comes from a legitimate source and will provide easy identification of illegal catch for fishery officers.

If the packhorse you receive does not have these official tags, ask why, as it may be illegal catch.

For more information on the tagging programme, contact North Island CRAMAC executive officer, Julie Hills: RLO@nzrocklobster.co.nz

New aquaculture facility set to harness seaweed's potential

A state of the art, 1000sqm aquaculture facility, was officially opened in Tauranga this November.

The facility is a New Zealand first – providing infrastructure for seaweed cultivation, from nursery stages to grow-out.

Funded by the Tertiary Education Commission's Entrepreneurial Universities programme and the University of Waikato, the centre is part of a $13 million algal biotechnology research project that is looking to deliver a closed life-cycle aquaculture production of seaweed.

"It is about a sustainable diversification of New Zealand's aquaculture industry and it provides a strong foundation point for the blue economy," said Waikato University senior deputy vice-chancellor Alister Jones.

Seaweed biologist Dr Marie Magnusson will lead the project, alongside seaweed chemist and husband Dr Christopher Glasson, marine ecologist Dr Rebecca Lawton and a world-class team of research fellows, technical officers and postgraduate students.

Magnusson says macroalgae represent a largely untapped resource for materials and bioproducts that will enable sustainable diversification of New Zealand's aquaculture industry.

"We're researching commercial applications of seaweed and potential ways to use macroalgae and their extracts for agricultural, human and animal health, and materials science applications," she says. "Aquaculture has a proud history in this part of New Zealand and this new impressive facility can help us take full advantage of future opportunities in this growing and high-value industry."

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