

# Seafood

NEW ZEALAND



**Special issue: Orange roughy -  
the road to redemption p13**



deepwater  
group



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# In this issue

The New Zealand seafood industry takes its share of knocks. Yet there are plenty of achievements worthy of celebration. One such arrived with the Marine Stewardship Council's sustainability blue tick for three orange roughy fisheries at the end of last year.

Nobody denies that roughy were hit hard in the early years of this lucrative catch – so lucrative, in fact, that it underpinned the development of New Zealand's deepsea fleet. Today the biggest volumes of fish caught in our Exclusive Economic Zone are species of lower value. Roughy is seldom seen on New Zealand menus. That's not because the fish isn't still being caught, however, but it is in high demand in China and the U.S. Conservative tonnages have continued to be taken from some areas while the industry has improved the science around stock assessments and sustainable catch levels, sometimes with Government assistance and more often on its own account, while roughy stock has been given time to rebuild.

Now the MSC has certified three roughy stocks, with work being done to ensure that others achieve its high standards so that they too can receive the blue tick. It's a remarkable turnaround characterised as a tale of cowboys, characters and conservation.

Much of this issue is devoted to that story and the book written to tell it, *Roughy on the Rise*. It is hoped that this book, just launched at a function in Wellington, will help convince the doubters that the industry today is made up of conservationists. And, thankfully, there are still lots of characters too.

While orange roughy dominates this issue, there is plenty more for readers.

Christchurch industry leader Charles Shadbolt is farewelled in an obituary that highlights his humility and generosity, while New Zealand King Salmon chief executive Grant Rosewarne explains more about why the company wants to move some of its Marlborough Sounds farms. There's some revealing new information on the recreational charter catch, and longtime seafarer and contributor Chris Carey delves into the challenges of towing at sea.

There's also a full report on a highly successful inaugural Women in Seafood breakfast held in Nelson on International Women's Day. It opened a window on the massive contribution that women already make to this country's seafood industry – and showed that there are many more opportunities to come.

**Tim Pankhurst**  
Chief Executive





Workers at the Sanford processing line in Havelock prepare mussels for export.

## Heroes of the half-shell

**Fiona MacMillan**

**They've done it – the first crop of mussels from the SPATnz hatchery in Nelson have performed superbly through to harvest size. This marks a major milestone in the mission to breed better, faster, stronger greenshell mussels, worth millions to the New Zealand economy.**

Billions of mussel eggs are spawned each year but only a tiny proportion make it to adulthood.

The New Zealand mussel farming industry has always relied on getting spat from the sea. The spat wash around in the ocean and are found attached to seaweed on the North Island's 90 Mile Beach or caught on ropes in the South Island's Golden Bay. Mussel farmers transfer them to their farms in the Marlborough Sounds and other regions.

That's a tough way to run a business - hoping that you'll have enough spat from one year to the next.

Chair of Aquaculture New Zealand

and mussel farmer Bruce Hearn knows firsthand what a frustrating business it can be.

"There are a lot of aspects to wild spat, it differs in quantity and quality, you never know when it is coming and when you can get it so there is no certainty."

However a team in Nelson has just changed the odds. The SPATnz crew have succeeded in breeding greenshell mussels at scale in captivity and after two years, their first spat are now fully grown mussels. The first 500 tonnes are progressively harvested over the next six months and processed at Sanford's Havelock factory.

SPATnz Operations Manager Dan McCall has been working towards this goal for over a decade.

"A big part of the process was figuring out how to grow mussels through all of their microscopic life stages. Once we figured that out, the challenge became trying to do it at scale and over 12 months of the year."

So SPATnz can finally enjoy one of the most satisfying moments in science – the team can say they've tackled a

problem head on and solved it.

Not only will the hatchery be a much more reliable source of spat, but the hatchery mussels are also faster-growing - from their introduction to mussel farms in Marlborough they have grown to harvest size much more quickly than the wild caught stock.

Sanford's Harvest Coordinator in the Marlborough Sounds, Phillip Hawke, says the hatchery spat are making his life a lot easier. "The hatchery seed grows so quickly compared to the wild seed and you don't get the huge variation in size, so it's more consistent, it's great. You just don't see this in the Sounds."

So, that's the faster part explained.

"But it's not all about faster growth" McCall said. "They've got to be strong mussels, resilient to the challenges associated with farming in the natural environment. This is a key focus of our breeding programme, and the results from the first batch are very encouraging with the mussels proving robust at every stage in the farming process."

Project leader Dr Rodney Roberts is quietly proud of his team's success.

"It's never been done before at this scale and it's not been easy. There

are still plenty of challenges yet to overcome but yes, it's a really proud day."

SPATnz is a Primary Growth Partnership programme, co-funded by the Ministry for Primary Industries and Sanford. The potential benefits were obvious – potentially another \$200 million in aquaculture revenue if SPATnz's handpicked spat take over from the wild stock.

But the risks were always there. SPATnz's funders will have spent \$26 million by the time the programme is complete and as with any innovation programme, there are still challenges to overcome.

Roberts knew exactly what he was taking on, but felt he had the right backing and the opportunity to build a great team, which currently numbers 17.

"The team is awesome. They are

a great bunch of people and it's very specialised work we do, which needs a whole lot of attention to detail and a lot of dedication from the staff, seven days a week 365 days a year."

Roberts said future challenges would be around scale. "This first hatchery batch makes us realise that our goal is achievable but the next challenge is to scale up our processes so that we can produce the number of mussels that the industry needs."

After that, the possibilities were huge, he said.

"It will deliver on all sorts of fronts. It reduces the cost of production, increases the product value and opens up possibilities for specialised lines such as nutraceutical products." And that focus on magnifying the health properties of greenshell mussels contributes to the "better" part of the

better, faster, stronger equation.

In production trials SPATnz has already produced several monthly batches on the scale to provide 10,000 tonnes of annual crop. It is aiming to reach a spat supply sufficient for 30,000 tonnes.

The SPATnz hatchery opened in 2015 at the Glen, just outside Nelson. The hatchery spat is now growing on 15 Pelorus Sound mussel farms.

Greenshell™ mussels is the trademarked trading name for New Zealand green-lipped mussels, with sales of \$350 million last year.



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Looking terrific, the made-over *Rehua* heading into Nelson after leaving Lyttelton's dry dock.

Sealord general manager group operations Doug Paulin said the completion of the refit had brought "a few small run-up issues" but nothing major, which was a credit to all the people involved.

## Refreshed Rehua back in action

**Bill Moore**

**Twenty years after being built in a Norwegian shipyard Sealord's factory trawler *Rehua* is back at sea after a \$6 million mid-life refit and five-year survey.**

Starting at the beginning of the year, the nine-week project included a major engine rebuild, replacement of fish-finding and trawl-monitoring equipment, upgrading the factory's conveyors and deck-head linings and adding two new fish oil tanks.

Machinery components were rebuilt from the winches to the refrigeration plant and main engine. There was a full repaint of the under hull and

topsides, and a new ice slurry system and machinery monitoring and alarm systems were added.

Most was done by contractors in Nelson, with propeller and rudder-shaft work carried out in dry dock at Lyttelton. All in all, the project was a year in the planning, with nearly 1000 separate jobs to tick off.

Sealord general manager group operations Doug Paulin said the completion of the refit had brought "a few small run-up issues" but nothing major, which was a credit to all the people involved.

The 66-metre vessel, which has a catch plan of more than 12,000 tonnes a year, returned to service on March 8, six days ahead of schedule, its crew of 43 setting off on a six-week trip to fish for hoki and squid in southern Antarctic waters.

Main contractors were Diverse Engineering, Aimex, Rzoska Electrical,

Brightwater Engineering, Sturrock and Greenwood, Wallace and Cooper, Lyttelton Engineering, Stark Bros and ENL Ltd.

Meanwhile, work is slightly ahead of schedule on Sealord's new \$70 million factory trawler, also being built in Norway. The 82.9m vessel's purchase was announced in August last year, and it is expected to begin operating next year, bringing 80 new seagoing jobs.

The trawler will be able to fish all Sealord's target species including pelagic fish such as barracouta, squid and jack mackerel.

Paulin said factory design was being finalised last month, which is also when the keel was laid.

It is the first brand-new new vessel Sealord has ordered since *Rehua* and its addition to the New Zealand fleet is seen as a major vote of confidence in the industry's future.

## Industry welcomes trade policy changes

The seafood industry welcomed the Government's launch of its refreshed trade policy, Trade Agenda 2030, by Prime Minister Bill English late last month.

Seafood New Zealand Chief Executive Tim Pankhurst said export trade was extremely important to the seafood industry, with exports for 2016 sitting at \$1.8 billion across a diverse range of

products and markets.

"We appreciate the work the Government has been doing in securing free trade agreements (FTAs) with our trading partners and the target to have 90 percent of New Zealand exports covered by FTAs by 2030 is worthy," he said.

"We also applaud the recognition by the Government that, as tariffs reduce through FTAs, other barriers to trade are emerging.

"That there is significant work to be undertaken on non-

trade barriers (NTBs) is to be congratulated.

"This cross-agency collaboration and coordination is critically important and the seafood industry looks forward to being actively involved in discussions on NTBs through its membership on the newly-formed Ministerial Advisory Group and through the relevant agencies.

"In an increasingly protectionist world we welcome all efforts to ease barriers to trade, which is so critical for our small nation's prosperity," Pankhurst said.

## MSC gets another tick

The Marine Stewardship Council, the body that has certified more than 50 percent of New Zealand's catch as caught sustainably, has become the first global sustainable seafood certification programme to be recognised by the Global Sustainable Seafood Initiative (GSSI) as meeting international requirements for credibility and rigour.

The GSSI benchmark is based on UN guidelines and was developed in consultation with eNGOs, global businesses, independent experts and government and intergovernmental organisations. The GSSI benchmark includes international performance indicators for governance, operational management, supply chain traceability and auditing. The MSC programme met all the essential components and 63 more relating to deep sea fishing, vulnerable marine ecosystems and data collection to demonstrate impact.



## Lobster fishers disappointed

NZ Rock Lobster Industry Council Chief Executive Daryl Sykes hit out at rock lobster management decisions announced by Primary Industries Minister Nathan Guy late last month. Sykes said the decisions did not address widespread thieving of crayfish on the North Island's East Coast.

"We should be well past the time when shared fisheries management decisions can only impact on commercial operators to address observed declines in stock abundance."

He said the decisions were informed by good science and generally supported the rock lobster industry, but the Minister was silent on actions to deal with "fish thieves" taking more than 160 tonnes of rock lobsters from the Wellington, Hawke's Bay (CRA4) and Gisborne East/Coast (CRA3) lobster fisheries every season.

The CRA4 decision had serious implications for the industry in terms of both social and economic impacts, Sykes said.

From April 1 the allowable commercial take in CRA4 will be cut by 108 tonnes, to 289 tonnes. The recreational and Maori customary allowances will remain at 85 and 35 tonnes respectively.



## Ministry cries foul over dirty ship

The Ministry for Primary Industries ordered a dirty bulk carrier to leave Tauranga for a thorough cleaning before it could come back to New Zealand, the first time it had acted in this way on biofouling.

In early March MPI ordered the DL Marigold to leave New Zealand within 24 hours. Ministry divers had found dense fouling of barnacles and tube worms on the hull and other underwater surfaces.

"The longer the vessel stayed in New Zealand, the greater chance there was for unwanted marine species to spawn or break away from the ship. So we had to act quickly," said MPI's Border Clearance Director, Steve Gilbert.

The DL Marigold arrived in Tauranga from Indonesia and had been due to stay in New Zealand waters for nine days.

The ministry was told the vessel would go to Fiji for cleaning before returning to finish discharging a shipment of palm kernel expeller.

Gilbert said it wouldn't be allowed back without proof it had been thoroughly cleaned.

New rules will require all international vessels to arrive in New Zealand with a clean hull from May 2018. Meanwhile, MPI can take action in cases of severe biofouling.



## Drones to watch fishing

UK-based Martek has won a two-year drone contract from the European Maritime Safety Agency (EMSA).

Part of a five-year E67 million (\$NZ103 million) EMSA project to improve coastguard monitoring and surveillance of maritime activity, Martek's contract includes providing the drones and their remote pilots, other ground crew and long-range antennae. Video and drone sensor data will be streamed live to a control centre.

Designed for the marine environment, the drones will assist with search and rescue, border control, pollution monitoring and the detection of illegal fishing and drug and people trafficking.

A typical task involves the deployment of a drone from the deck of a ship to a specified area of interest.

## Environmental award entries sought

The Ministry for the Environment's 27th annual Green Ribbon Awards are open for entries until May 10.

The awards honour individuals, communities, organisations and companies working to protect

and manage New Zealand's environment. Past winners connected to the seafood industry include Te Korowai o Te Tai o Marakura and Guardians of Fiordland Fisheries and Marine Environment.

Among the award categories are protecting our coasts and oceans, protecting our biodiversity, caring for our water, and leadership

in communication and education. Winners will be announced on June 8.

**For more and to enter:**  
[greenribbonawards.org.nz](http://greenribbonawards.org.nz)

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## OCEANS OF INNOVATION

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## Calling all seafood industry stars

Excellence and innovation in the seafood industry are again being rewarded with the Seafood Innovations Ltd - Seafood Stars' Awards that will be presented at the New Zealand Seafood Industry Conference this year, Chief Executive Tim Pankhurst says.

"The awards are a great way to reward innovation and excellence within our industry and tell stories about our

seafood, our people and our ongoing commitment to sustainability.

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

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

– **Seafood Innovations Ltd - Future Development Innovation Award**

- This award is presented to the person that has developed a new technology that does one of the following;

- reduces waste by adding value to by-products or waste, or
- reduces adverse impacts on the marine environment of fishing or farming seafood, or
- reduces adverse impacts of fishing or farming seafood on protected species, or
- increases the efficiency of production of seafood, or
- makes a significant

contribution to health or science

- **Young Achiever Award** - This award is presented to a person, 35 years of age or under, who has demonstrated that he or she has made a positive difference to the seafood industry, and has the potential to continue to develop as an effective and respected seafood industry leader or role model.
- **Longstanding Service Award** - This award is presented to a person who has demonstrated that he or she has made a substantial positive difference to the seafood industry over many years, and who has been a highly effective and respected seafood industry leader.

The awards will be presented at the 2017 New Zealand Seafood Industry Conference on Thursday, August 3 at Te Papa, Wellington.

Nomination forms can be downloaded at [www.seafoodnewzealand.org.nz/industry/seafoodstars](http://www.seafoodnewzealand.org.nz/industry/seafoodstars) or request from [Karen.oliver@seafood.org.nz](mailto:Karen.oliver@seafood.org.nz).

Nominations close on 30 June 2017.





## Generous industry leader stayed close to factory floor

**Charles Shadbolt built the family business into one of New Zealand's leading seafood enterprises but remained a humble family man.**

The 67-year-old died at home on February 17 after a short illness.

Born into the business his father Howard had begun in a Christchurch fish and chip shop in 1956 and quickly developed into Independent Fisheries, Charles took over in 1980 when Howard retired.

He had left school at 15 and learned his personnel and management skills by working alongside company staff.

In an interview for Tim Pankhurst's

new book *Roughy on the Rise*, Charles recalled no favouritism as the boss's son.

"I was put to work filleting fish, opening and counting oysters, sweeping the floor, everything. Dad did it all too."

Those years left him with a lifelong regard for Independent's workers and when the decision was made to close the Woolston factory severely damaged by the 2011 Canterbury earthquakes, he strove to see that every staff member was well compensated and to help everyone who wanted another job to find one.

Independent had got its start processing oysters, later moving into whitebait and turning red cod and barracouta into fish fingers and crab sticks for the Australian market.

It bought its first boats in the 1970s, and got more involved in deepwater fishing after the introduction of the Quota Management System in 1986. Today it operates three Ukrainian-built 105 metre factory trawlers out of Lyttelton, with 480 staff on rotation at sea and 60-100 shore-based.

Its mainstay species are hoki, jack mackerel, squid, southern blue whiting and barracouta and it operates on a no-waste policy, with markets for everything from livers, roe and fishmeal to squid beaks.

Still fully family-owned, Independent has built long-lasting commercial links around the world, with Charles having made many overseas trips to develop and maintain business relationships.

He was made an Officer of the New Zealand Order of Merit (ONZM) in the 2017 New Year's Honours for his

philanthropy and services to the fishing industry.

The commendation said that his contribution to the industry spanned 50 years, during which he'd built Independent into a major private company with more than 1000 staff at its peak.

Charles was also a significant philanthropist, contributing to many Canterbury organisations for more than three decades.

These included the Canterbury Charitable Hospital, St John, the Salvation Army, St George's Cancer Care Trust, Conductive Education NZ and Canterbury Inspire Foundation. Through his role in setting up the Kurashiki-Christchurch Sister City Exchange programme, more than 20 disabled students and their carers have travelled between the two cities on cultural exchanges.

Son-in-law and Independent's Managing Director, Mark Allison, said Charles was a humble man who put other people's interests before his own and who never sought the limelight.

"Family was the most important part of his life."

He said Charles was a good employer with his workers at heart, believing in "an honest day's work for an honest day's pay".

In his business dealings he used his word as his bond.

"A lot of his deals were done on a handshake and he was very big on sticking to a contract."

Apart from work and his philanthropic activities, Charles was a keen tennis player, and had a passion for cars, putting together a small collection.

He was farewelled by a large gathering at Christchurch's Transitional Cathedral.

Charles Shadbolt is survived by his wife Carol, his four daughters, Rachel, Cherie, Selina and Annalis, their partners, and 14 grandchildren.



# MSC Chain of Custody

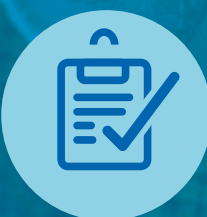
Chain of Custody certification can be a unique selling point for your business and allows your company to meet the increasing demand for sustainable and traceable seafood. For fisheries, it allows your product to retain value throughout the supply chain, correctly labelled and clearly identifiable from boat to plate.

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# Orange roughy - the road to redemption

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A special feature to celebrate the turnaround in New Zealand's orange roughy fisheries that's brought Marine Stewardship Council sustainability certification after two decades of science, study and slog.



# Long history to roughy's return

Bill Moore

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**The return of orange roughy to respectability as a sustainable fishery has involved science, determination and two decades of concerted effort by industry through the Deepwater Group.**

The story of the roughy boom that started in the 1980s and the resulting depletion of New Zealand's stocks has been endlessly repeated by fishing industry critics.

Much less known has been the long and difficult process quota owners went through to gain reliable data on the roughy stocks and establish a management regime to ensure that the populations could rebuild and then be regularly harvested without threatening their long-term viability.

This culminated in December last year with the announcement in London that three of New Zealand's roughy fisheries had received the Marine Stewardship Council's blue tick, regarded as the gold standard for sustainable fishing around the world.

That gives independent sustainability recognition to two-thirds of New Zealand's roughy catch, currently an annual harvest of about 6000 tonnes, worth \$50-60 million in annual export earnings.

There are good grounds to hope that in time and with more MSC recognition New Zealand's orange roughy fisheries could

sustainably yield around 10,000 tonnes a year.

That's a far cry from the boom times, when the catch peaked at 54,000 tonnes in 1989. The difference is a solid industry commitment to sustainable fishing - something it finds hard to communicate successfully to the public.

Deepwater Group Chief Executive George Clement has been involved with the orange roughy fishery since years before the group, which represents 94 per cent of quota ownership, was set up in 2006.

Clement's association with the seafood industry began in the 1970s when he was a scientist in the Ministry of Agriculture and Fisheries and he was part of one of the small groups that stitched together the Quota Management System introduced across New Zealand fisheries in 1986 and since often praised around the world.

His work with roughy began in 1992 and he said he and his colleagues quickly became aware that the science of the day simply wasn't good enough to manage multi-million dollar investments in perpetuity, and that the management regime wasn't adequate. "So we have worked assiduously to get better science than was being delivered through the Government's system.

"Essentially the science in the mid-'90s was saying that the roughy resources were in rapid

decline, but we didn't think the methods being used were accurately measuring the stock sizes.

"For instance the bottom trawl surveys on the Chatham Rise weren't sampling the spawning plumes, which rise some 80-100 metres above the seabed, are several kilometres long, and contain most of the adult orange roughy during the time of the survey.

"When the government scientists came back with a survey estimate of around 25,000 tonnes and we worked out from the length, height and density that the single spawning plume must contain around 80,000 tonnes, we knew that we had to rethink how to measure these stocks.

"When you go to where the roughy are, you find a lot of them. The traditional scientific approach was to randomly sample by trawl a few metres close to the seabed over a very wide area - essentially a two-dimensional sampling tool. But we actually needed to measure three-dimensional structures at discrete and known locations. That's quite a difference - imagine looking for needles in a haystack, you would have to do a lot of random sampling to find any needles and if you don't find any, you might think there are none in there. Our approach was to go directly to the needles and to measure their size."

So began an effort to get the scientists to change trawl surveys

Previous page: A deepwater view of a school of orange roughy on the summit of a hill on the Chatham Rise at a depth of 890m.

Picture: NIWA, Ministry for Primary Industries





George Clement addressing the 2015 seafood industry conference.



Andrew Stewart at Te Papa's wet collection store with the original orange roughy caught in 1957.

to acoustic surveys, Clement said. "First we were told by the scientists, 'there are no roughy in those mid-water acoustic marks'.

"So we put a mid-water net into the marks and caught a whole heap of roughy

"Next we faced a whole lot of technical reasons why acoustic surveys wouldn't work. All science requires assumptions and all science comes with uncertainties - you could [equally] put up a whole lot of reasons why the trawl surveys didn't work."

Facing strong resistance to change within New Zealand, the industry began to look overseas, contracting expertise from the United States, South Africa, and Australia. Progressively, the industry and scientists developed effective acoustic survey techniques and one by one answered each of the technical criticisms.

The Australian scientists at CSIRO had begun to develop scientific multi-frequency echo-sounders that could be deployed off fishing vessels. At the time,

NIWA wanted to conduct stock surveys from its research ship *FRV Tangaroa*.

The Kiwis went the Australian way. Clement said the CSIRO scientists were the best in the world at what they were doing and their equipment, developed specifically to be used from fishing vessels, was exactly what was required to keep the costs down.

"Most of the cost for this research is the cost of the vessel - we've got a dozen or so fishing vessels as capable, or more so, than *Tangaroa*. They're out there anyway, so why wouldn't you put the scientists and equipment on board a suitable vessel that is already on the grounds?"

The group found answers to most of NIWA's challenges through this work. A tough one was finding a way to prove that the fish being measured acoustically via echo sounders were, in fact, orange roughy and not other fish types in the mixed species aggregations. It turns out that orange roughy are effectively

a "stealth fish" with very low acoustic reflectivity - making them relatively hard to see on an echo sounder. Individual fish of other species, at times mixed with orange roughy, may provide an acoustic reflection of the same strength as that from 60 orange roughy. It is essential to get the species mix right.

The problem was how to get close enough to the roughy so that they could be photographed and filmed at the same time as they were being measured by the echo sounder to verify what was being measured was indeed roughy, Clement said.

"You can see roughy at over 1000 metres on an echo sounder, but to see them with a camera and a video you need to get closer than 10 metres. As soon as we got our cameras down close, they'd move away.

"The solution was to fit scientific equipment on to our fishing nets in order to acoustically measure, video and photograph individual fish, and from that and the other data



CSIRO scientists working on the Acoustic Optical System.



New Zealand orange roughy being processed at sea for premium quality.

we could determine the species mix and establish their target strengths.

"At the time, NIWA weren't interested in using our nets as a stable underwater sampling tool, but CSIRO said it was a great idea." The Australians put up some money, the New Zealand industry provided more than \$1 million, and the result was the first Acoustic Optical System, the AOS, capable of operating down to depths of 1000 metres or greater.

The scientific equipment sits on the headline of a trawl net, which can be precisely positioned close to the orange roughy, close enough to gather the information the scientists need.

The industry started its first multi-frequency acoustic work with CSIRO in 1998 and the scientists soon established that industry's first estimate of 80,000 tonnes on the Chatham Rise pretty much agreed with theirs. But it took many years of study and refinement before "we really got it nailed", Clement said.

"We had to think outside the

square and invent things that didn't exist. By 2012-14 we had collected a lot of really good scientific information from our main orange roughy fisheries, Sealord had purchased their own AOS and, alongside CSIRO, had developed the world's first underwater fibre optic link so we can see in real time what is going on 1000 metres below the vessel. By then we'd started working out how many roughy were down there, and there are lots."

The next stage was to put all of this information together into a valid stock assessment. "Counting wild fish is not like counting sheep in a paddock," Clement said.

"You've got to say, 'Well, we've mustered half of our paddocks and we think we've got half the fish and we've counted 100 of them, so we think we've got 200 there.' Then you need to assess the ages and many other things."

At the time, as New Zealand didn't have a valid stock assessment model, the Deepwater Group found another party, Wellington company Innovative

Solutions Ltd, which was able to find a pathway through the maze and how to take account of the age structures of these populations, he said.

That took a further three years.

"By 2014 we had numbers from acoustics, from AOS, from our boats, and a stock assessment model that met all of the Ministry for Primary Industries' (MPI) science and information standards, and the four stock assessments were accepted."

These were the first orange roughy stock assessments that MPI had accepted in 14 years. They superseded the earlier work that had overstated the stock depletion, Clement said. This meant the industry and the Government now possessed really good estimates showing that three of these stocks had rebuilt, and that this had happened from a base that wasn't as low as previously thought. The way was open to sustainable management and to seek MSC certification.

Three of the four stocks submitted - two on the Chatham





Amaltal Explorer during an orange roughy survey trip.

Rise and a third on the Challenger Plateau - met the MSC standard after two years of rigorous investigation. The fourth, along the Mid East Coast from Gisborne to Kaikoura, was judged to be improving but to be still below the desired stock size. "As for the other three stocks, each of which had very low catches, at times set to zero to rebuild the stock size, the Mid East Coast has a very low catch limit in place. It ought to get there within another 10 years, all going well," Clement said.

"In the late 1990s, industry was being told by scientists and managers that orange roughy couldn't be managed and that the stock sizes were so low it would take a hundred years or more for them to come back. We had confidence that with the right science and the right management measures orange roughy fisheries could be managed sustainably - as has been proven."

Other orange roughy fisheries, around the North Island, off the west coast of the South Island and

southwest of Fiordland are still being measured.

Clement said the key ingredient to good fisheries management was to know how much could be taken as a percentage of the stock.

"With fish like hoki, which are relatively short-lived and fast-growing, you could probably take 15-20 per cent each year. At the moment we're taking about 8 per cent; it makes sense to leave more in the water because we get better catch rates, improving the harvesting economics.

"With orange roughy in the early years we were probably taking up to 20 per cent, based on science from northern hemisphere fisheries. For roughy, we didn't get the 'How To' manual, and we have had to work out how best to manage the fisheries through trial and error, and through responsive management. We're now taking 4 per cent or less, harvesting fewer than 4 adult fish from every 100 in New Zealand waters. That's very conservative by world standards and we believe it is working."

He said the challenge the

industry faced now was in letting all New Zealanders know that "we've got the best-managed fisheries in the world".

This was in the face of negative publicity and recent university studies which simply invented data to support anti-fishing beliefs.

"No industry is perfect and we still have some areas that need tidying up, but the media's attention on the negative and conspiratorial stories distorts the true picture. It is understandable why the public might hold negative views that are often based on very inaccurate information.

"The minister's under pressure, the ministry's under pressure, and we're under pressure. We have been accused of being thieves, vagabonds, rogues, cheats and worse. Most of this is from the ill-informed or from those who simply do not trust Government or industry."

But the record spoke for itself, Clement said. The industry had met the MSC's sustainability standards, the highest in the



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**"You could line us up against any marine fishery in the world - our low levels of interaction and our mitigation measures with marine mammals and seabirds in the deepwater fisheries are exemplary."**

world.

"We're proud of what we've done. New Zealand has 75 per cent of our catch from deep-water fisheries certified as being amongst the most sustainable fisheries in the world by MSC. I challenge you to find another country in the world that is doing better than that. That's more than 50 per cent of our total New Zealand catch by volume.

"You could line us up against any marine fishery in the world - our low levels of interaction and our mitigation measures with marine mammals and seabirds in the deepwater fisheries are exemplary."

Invited to join the Prince of Wales' International Sustainability Unit in 2011 and having just ended his term as chairman of Seafood New Zealand, Clement said he suggested a book on the orange roughy fishery not to hammer home the industry's commitment to sustainability after the mistakes of the past, but so that the stories of the people involved over the years could be told.

*Roughy on the Rise, The story of New Zealand's most controversial fishery*, was written by Tim Pankhurst and launched on April 11.

"Orange roughy built the New Zealand deep-water industry. If people read the book and understand a bit more and are entertained by the stories, that's fantastic. It's a story of the ordinary and extraordinary New Zealanders, the people who have lived and breathed orange roughy over these past 40 years. A story of gold rush, of awakening and of redemption – people, science, innovation, it's all there," Clement said.

"Since 2000 industry has invested \$35 million into science and innovation to ensure that we get roughy right. This spend is in addition to that by the Government, which has spent more than \$100 million since 1989 and recovered these costs from industry. Most of the information required to ensure that these valuable New Zealand fisheries are being managed sustainably and to meet MSC certification

requirements has been purchased since 2000."

He said the industry's leaders are now the "true conservationists" - in the sense of "wise sustainable use" noting that conservation was now seen by some as indistinguishable from preservation, which belied the proper meaning.

"We're here with quota in perpetuity and we're here to ensure these resources are managed in perpetuity. If we didn't have it right in the early days, it's up to us to get it right now. Millions of people depend on the New Zealand seafood industry to provide them with high quality sustainable seafood. That is a challenge we are up for.

"We've got hundreds of millions of dollars invested and, because we've actually got more at stake than the Government, it is up to us to ensure that our fisheries science and management practices remain world-leading."



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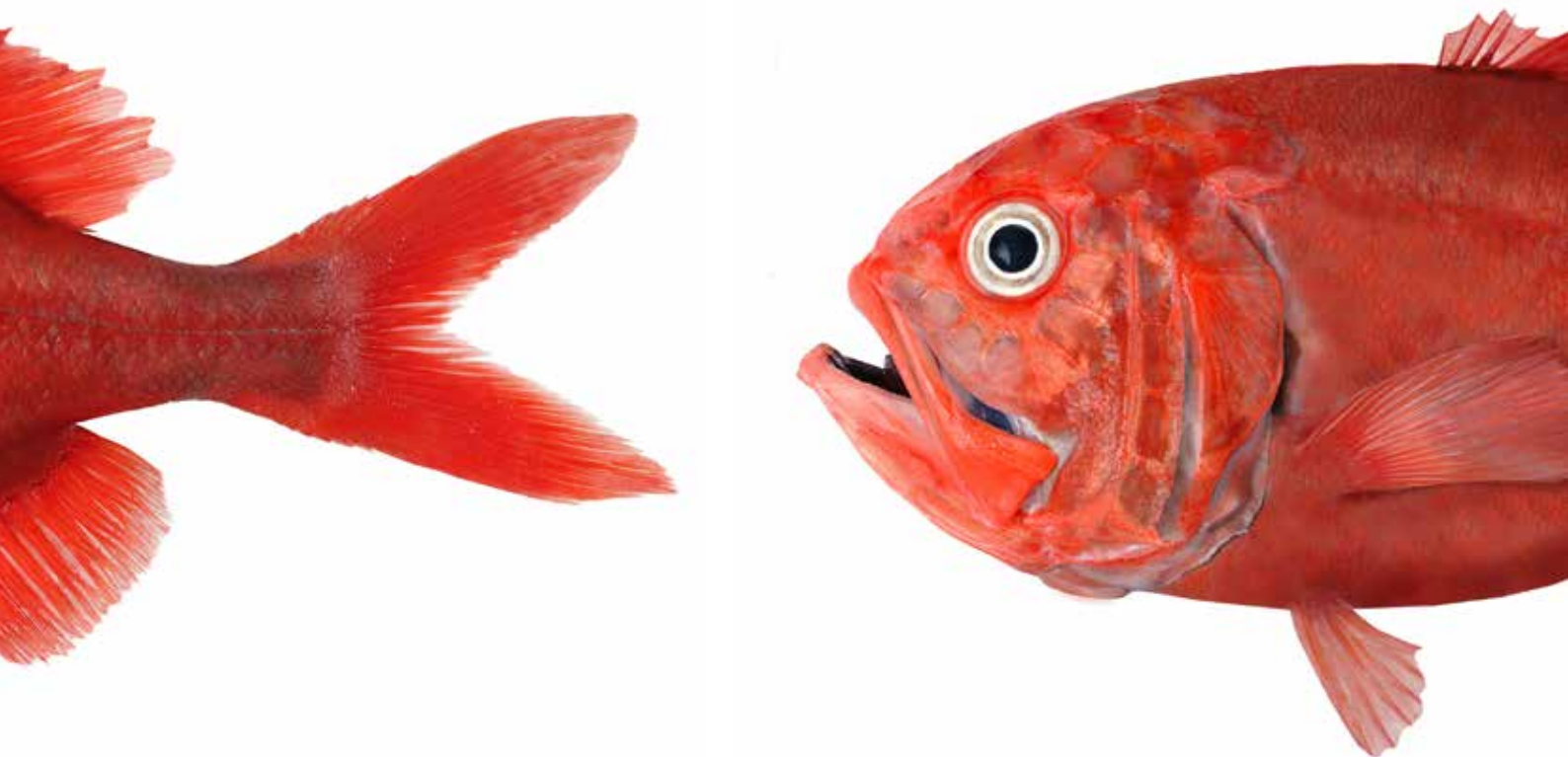
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## Marine Stewardship Council certification 'no small feat'

**Getting Marine Stewardship Council (MSC) certification for orange roughy was "no small feat", said Wellington fisheries scientist Patrick Cordue.**

Cordue, who developed the 2014 New Zealand orange roughy assessments, said the three fisheries that gained the MSC tick last year were the first roughy fisheries in the world to achieve it.

To do so they had to meet the very high MSC standards and to show that they had rebuilt from the overfishing of the 1980s.

"The largest uncertainty for orange roughy is the variability in recruitment that can be expected to enter these fisheries over the next 20 years as young roughy, given these have spawned from relatively low stock sizes," he said.

"In addition to the stock assessments, the industry also asked me to develop a robust harvest strategy designed to adapt to changes in the levels of new recruitment by altering future catch limits accordingly."

MSC Fisheries Standards Director Dr Rohan Currey said the

fact that roughy lived to very old ages suggested to many that they couldn't be sustainably harvested.

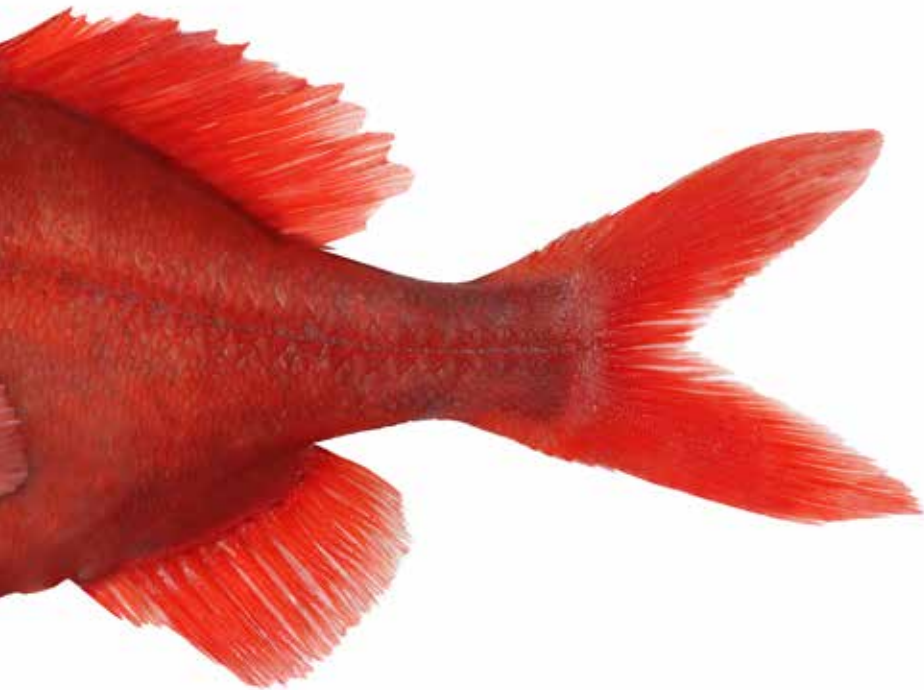
"This is not the case," he said.

"As long as the management system accounts for the life history of the species they catch, fisheries can adjust the level of catch to ensure sustainability."

In the case of roughy, the management approach includes ongoing surveys, regular stock assessments, and regular evaluation of the harvest control rules and catch levels, taking into account that roughy are thought

Picture: Terry Hann





not to reproduce until around 25 years old.

Currey said the roughy story was not finished.

"Certification requires fisheries to meet a very high bar of sustainability, but also incentivises improvements where these are needed. Other New Zealand orange roughy stocks have yet to recover to the point where they could achieve MSC certification."

This meant there was more work to do.

"We should not get stuck in the past. We want fisheries to improve and we should recognise them when they do. Positive change means productive, healthy oceans," he said.

The Marine Stewardship Council was founded in 1997 by Unilever and World Wildlife Fund as an international non-profit organisation to certify fisheries that meet their sustainability standards. MSC, headquartered in London with offices around

the world, works with scientists, fisheries, seafood producers and seafood brands to safeguard future seafood supplies through sustainable fishing, assessing wild fisheries only.

Its programme is science-based and meets best practice guidelines set by the United Nations Food and Agriculture Organisation (UNFAO) and the International Social and Environmental Accreditation and Labelling Alliance (ISEAL).

Its standards were developed in consultation with scientists, NGOs and industry partners, and it makes information on every step of every fishery assessment available on its website.

The blue MSC label can only be used on fish and seafood from fisheries it has certified as ensuring that fish are caught at levels that allow fish populations and the ecosystems on which they depend to remain healthy and productive for the future.

The label is limited to fish and seafood that can be traced back to MSC certified fisheries. Hundreds of random DNA tests are carried out on MSC certified products to ensure that its traceability system is working.

There are 20,000 MSC labelled products in supermarkets and stores in around 100 countries.

**For more: [www.msc.org](http://www.msc.org)**



# Kiwi characters abound in orange roughy history

Bill Moore

**Tim Pankhurst expected reticence when he approached the men who figured in the orange roughy boom of the 1980s. Instead he found a willingness to tell extraordinary stories of a time when the only limit was how much fish could be hauled on to a boat without sinking it - and a more recent commitment to scientific stock management.**

Today Seafood New Zealand's Chief Executive, Pankhurst has a background as an award-winning journalist and long-serving editor of some of New Zealand's leading newspapers including the Dominion Post and the Press. As a young reporter in Nelson he was one of the first to write about New Zealand deep sea fishing, and said he happily held his hand up when a book on orange roughy was suggested by SNZ Chairman George Clement to mark the long-sought certification of roughy by the Marine Stewardship Council.

More than a year's work followed as he fitted in dozens of interviews and then writing the 350-page book around the demands of his day job. It consumed the 2015-16 summer and he recalled staring longingly out at the flat sea while wedded to his desk at his Wellington harbourside home.

*Roughy on the Rise - The story of New Zealand's most controversial fishery*, was finished soon after the certification came

through and Pankhurst said now that it had been launched he wouldn't be surprised if he copped some criticism from those who will see it as an apology for the fishery.

"I don't think it is. A condition of writing it was that it would be warts and all, that there might be things in it that some people would be uncomfortable with.

"There's no doubt about it, there was overfishing - but we didn't know what we were dealing with. The scientists were really struggling to come to grips with this strange fish."

The roughy fishery was far from the first time New Zealand went through a boom and bust cycle, with many other onshore and offshore examples both in the past and recent times.

"But ultimately with roughy we got it right," Pankhurst said.

"There are a number of roughy fisheries around the world, New Zealand's was the biggest. We made mistakes but we also did some really smart things. We closed fisheries - we closed the Challenger Plateau for a decade. We put in conservation measures. Roughy never went away, despite what some people think."

Some even thought it had been fished to extinction, partly because it isn't much seen on sale domestically. In fact the catch never went below 7000 tonnes, almost all exported to the United States.

"We're now seeing that three of the nine roughy fisheries have got that MSC certification, the three most important ones, two on the Chatham Rise and one on the Challenger Plateau out to the west, and we've got another one coming that's probably going to be worked through certification. So it's a story of redemption really, a marvellous success story, but that's not widely recognised."

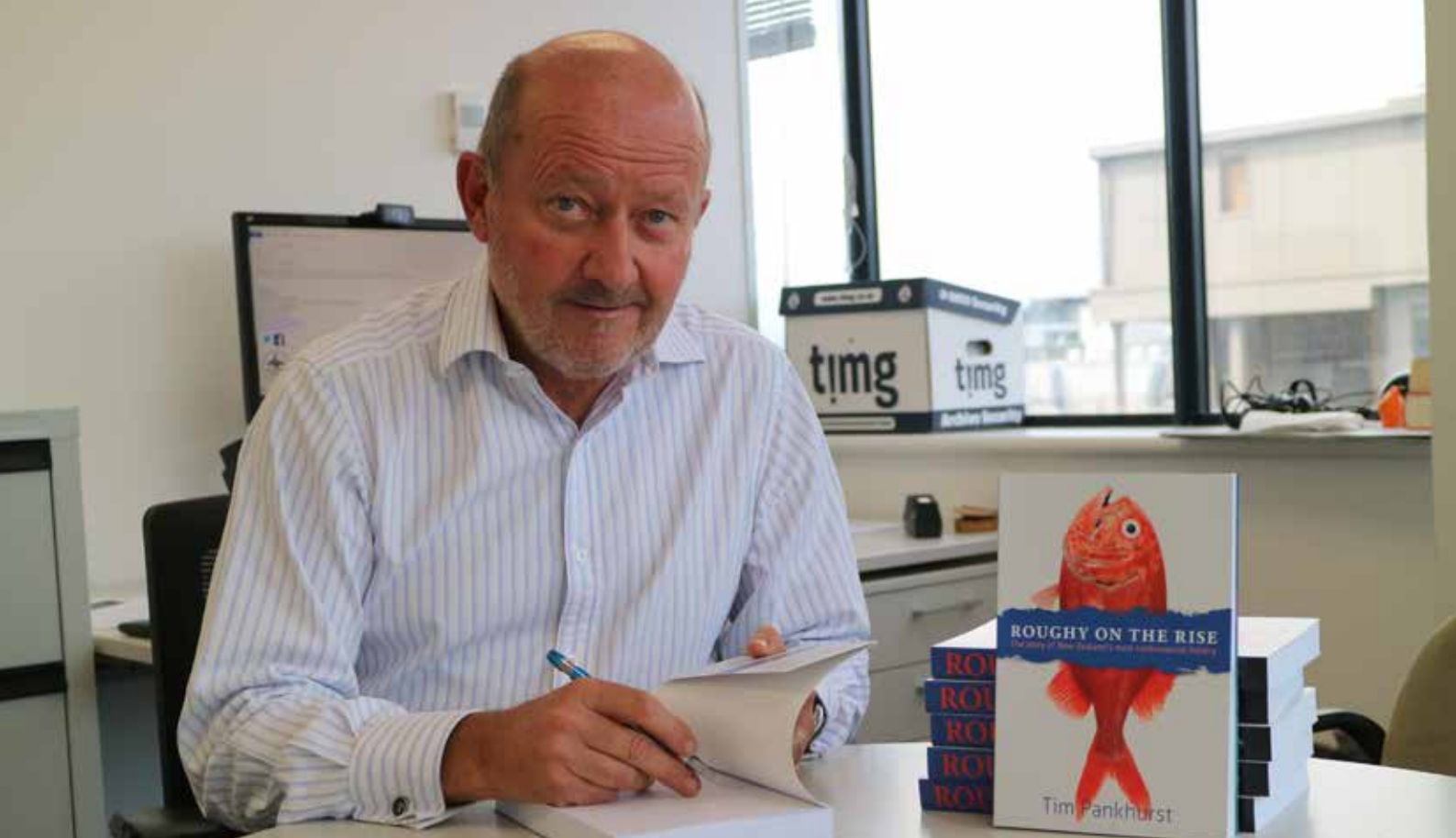
Pankhurst said he'd thought it might be difficult to "chisel out" the reminiscences of the roughy fishing pioneers, some of whom were at the end of their careers or had moved on to other things.

"It was the opposite. They really wanted to talk about an extraordinary time in New Zealand fishing history and were very generous with their time."

He said his sources were open, often droll natural storytellers, and although he has mainly let them speak in their own words, "in some cases I probably used a little bit of censorship".

"There's one piece where a guy talks about the engine blowing up on a trawler - it's filled with effing and blinding, and we just let him go. It's just like one huge sentence. It was hilarious hearing him tell it and you had to relay that the way it was presented."

He identified with his interview subjects, who were courageous and took huge risks, mainly those doing the fishing but also those who developed the fishing



Tim Pankhurst signing the first copies of *Roughy on the Rise*. Picture: Matt Atkinson.

companies, some borrowing staggering amounts.

"One industry leader told me how he actually pulled over and spewed on the side of the road, just with the worry of what he was doing and how deep in he was."

Those on the boats didn't have today's technology and were fishing a kilometre down. Getting "hung up", gear snagged, was common and could be terrifying in a small trawler, he said.

One skipper told him of such an occasion "when basically what they did was go into the wheelhouse, shut the door, and pray".

Pankhurst said the roughy story hadn't finished.

"There's still more to unfold, but now that we monitor it so much more closely, if we do see alarming signs, we can pull back. The industry has learned that lesson - this is a \$60 million export industry now.

"It's never going to be what it was, but I think there's room for some careful, slow growth. I'd be surprised if you had a fishery that went beyond about 10,000 tonnes,

and it should be a fishery where these amazing fish are treated as a precious resource - almost to the point where they should be individually wrapped.

"The Chinese have that reverence. China has emerged as the most significant roughy market and the demand is for whole fish of particular colour and size."

He hopes the book, which is on general sale, will achieve a greater understanding that New Zealand does fish sustainably and that under good management, fisheries can and do recover.

"A lot of the eNGOs' business model is built on fear, and it's not within that model to admit that things might be improving. Greenpeace in particular has backed itself into such a corner over depicting orange roughy as the poster child of unsustainable fishing, it can't find itself in a position where it can concede that we do have much better science now, much better understanding, and that maybe we have got it right."

Pankhurst said New Zealand

was in many respects a reasonably sophisticated country today, but in other ways he doesn't think Kiwis are far removed from their frontier forebears.

"We're hunters and developers, we climb mountains and discover things. That's why we make our mark in the world. The roughy fishery was perfectly suited to the Kiwi character."

His respect for the roughy fishermen deepened as he put the book together and he admits to revelling in "some of the larrikin behaviour and some of the stories".

One features one of the first roughy skippers, Greg Gibbs.

"There's a picture of him nonchalantly standing at the stern, the hatches are open there's roughy piled on the deck, the deck's under wash and he's about to bring on another 10 tonnes," Pankhurst said.

"I said to him, 'How big were your balls?' He said 'Yeah, I look back at what we did and they're certainly a lot smaller now.' "





# From boom to sustainability

*Some excerpts from Roughy on the Rise, by Tim Pankhurst.*

**'Everybody was riding the roughy boom - from a cash-strapped government in a struggling economy, to daring inshore fishermen in overladen boats, to corporates and family-owned businesses seeing their balance sheets bulge and their names appear on the Rich List.**

Bigger deepwater boats were arriving, profits were funding expansion into new aquaculture ventures in mussels and salmon, foreigners were being forced out or into joint ventures, the

processing factories were driving employment and opportunity for the unskilled in struggling provincial towns and cities, and affluent buyers in the United States could not get enough of this newly discovered miracle fish with the unprepossessing name. Orange roughy was white gold.

Roughy could hardly be described as handsome, but to D'Urville Islander Lindsay Elkington every one was beautiful. "To me, each one represented a \$2 coin," he said. As skipper of the Seafresh vessel *Newfoundland*

Lynx fishing the Louisville Ridge far out in the Pacific Ocean beyond the Chathams in the mid-1990s, he once called his crew to the bridge when they lost a bag of roughy hauling the trawl. He gave each of them a \$2 coin and told them to toss it overboard, driving home the worth of each fish to the vessel. "Orange roughy is like no other fishing," he said. "It's challenging and you've gotta know what you're doing. If you get it wrong you risk losing \$200,000 worth of fishing gear and don't make any



Skipper Greg Gibbs with the deck awash on a heavily laden *Maria Louisa* on Strawberry Mountain, with another 10 tonnes of roughy still to come on board. Picture: Curly Walker

money. But if you get it right you can do really well. As a fisherman there's nothing more satisfying than seeing a big bag of orange roughy pop up on the surface behind the boat."

Orange roughy was also to become one of the most controversial fisheries in the world, widely seen as the epitome of poor management. The clamour was so great that it is not uncommon to find the view that orange roughy are extinct. The species has featured on virtually every environmental NGO's red list for unsustainable fisheries.

Orange roughy's epitaph has been written numerous times. Mark Kurlansky in *Cod* references orange roughy, a fish that "immediately gained such popularity that five tons an hour were being hauled from the depths near New Zealand." He then incorrectly added: In 1995 the catch nearly vanished." In fact the catch that year was 21,300 tonnes and it remained around

that level until 2000.

But while it was overfished and catches have dropped dramatically, stocks are rebuilding. In December 2016 the Marine Stewardship Council, the global gold standard of sustainable fisheries, awarded its coveted certification to the three largest New Zealand orange roughy stocks. Fisheries do recover under careful management backed by sound science. This is a story of loss - and of redemption - and of the men and women who shaped the world's largest orange roughy fishery.'



'The first time Gary Courtney caught orange roughy he had no idea what he was doing. He was the newly appointed skipper of Skeggs' *Wanaka* when he heard Shorty Duggan had come back from the Chatham Rise with a load of roughy on board *Fifeshire*. Courtney headed out to the new

ground due east of Kaikoura and was fortunate to meet up with Shorty's brother Guy, who was skippering Sealord's *Whitby*. The sounder on *Wanaka* was good for a maximum 500 fathoms (less than 1000 metres). With the seabed more than a kilometre below, Courtney was fishing blind. Duggan told him to follow his lead into a hole on the North Rise. The instruction was to play out all the wire warp, let the net fall to the bottom and then slow the boat down and let the net trickle down the side of the hole.

Success was immediate. Up came a net filled with the equivalent of 600 cases of orange roughy, about 20 tonnes. Again, they followed *Whitby's* lead and brought up another 300 cases on the second shot. *Whitby* had a net monitor which provided a picture of the bottom far below. But the boat was full and it turned for home. Courtney, with his inferior



When he was to subsequently see the bottom properly with the advent of colour sounders, he marvelled at getting through the hole and up the other side unscathed. "I don't know how the hell we never lost the gear. We just wandered through it. I think because we had maximum warp, the net was pretty light and it might have just been bounding on the bottom. It was 99.9 per cent more good luck than good management." "



The loss of the cod staple was a wake-up call for the food industry. The giant processor Unilever was alarmed at the loss of cheap, plentiful supplies of frozen white fish. No more Captain Birdseye, no Captain Igloo, no business. The World Wildlife Fund was also considering what it could do to reward and incentivise sustainable fishing. That led the world's biggest buyer of white fish and the biggest international conservation non-government organisation to sit down together in 1997 and develop a market-based organisation similar to the already established Forest Stewardship Council. While other prominent environmental NGOs were relentlessly negative about industrial fishing, the new entity, the Marine Stewardship Council, sought to create a credible science-based certification labelling programme. The aim was to support sustainable fisheries in the marketplace. For



About a billion people rely on seafood as a fundamental part of their diet, according to MSC. It estimates that globally the oceans support the livelihood one one in 10 people, while the economic value of industries related to fishing has been estimated at US\$2.9 trillion. Seafood is the world's single most traded food commodity - 10 times the volume of coffee.

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*Thelma G*, skippered by Seamus Fitzsimons, receives a large haul of orange roughy caught by Greg 'Shag' Gibbs on *Maria Louisa*. Picture: Curly Walker.



Sanford Managing Director Eric Barratt celebrating orange roughy as the fish that drove the publicly listed company's profit. Picture: John Bisset.

roughy is a premium table fish," he said, carefully placing a fillet in a pan in his kitchen. "It has a beautiful, almost scallop-like flavour to it, it's kind of silky in the texture in the mouth. New Zealand customers are very aware that orange roughy was the poster boy for bad fisheries management. It's fantastic it now has the MSC tick of approval. It means we can eat this completely guilt-free. It's really good to look a customer in the eye and say that you are serving a sustainable product. Orange roughy proves that we are trying to do the right thing by the fish stocks and by the customers." Lovell long refused to serve orange roughy, until he researched its history for a presentation to a chefs' conference on sustainable

seafood and was won over.

In years to come, will the doomsayers acknowledge they got it wrong, that fish stocks can and do replenish when well managed, and that New Zealand and other progressive countries have played a vital role in securing protein for a hungry world? But if they are right, that will be a catastrophe and we will all have failed. Avoiding this is what continues to motivate skippers and their crews, scientists, officials, politicians, quota holders, processors, marketers and chefs to safeguard a precious resource and ensure it is fished sustainably.

That way the world's most controversial fish can continue to survive and prosper in its dark, unfathomable depths.



MSC head Rupert Howes.

***Roughy on the Rise – The story of New Zealand's most controversial fishery, is on general sale through bookshops and can also be ordered through Seafood New Zealand's online shop at***

**[www.seafood.co.nz/shop](http://www.seafood.co.nz/shop)**



Martin Hansen filleting fish on *Conquest* in Lowry Bay, ready to serve up fresh fish. Pictures: Lesley Hamilton.

## Eastbourne's weekend fish market

Matt Atkinson

**The Lowry Bay fish market will celebrate 10 years in business this winter and still has some of its original customers.**

Martin Hansen started the Eastbourne market on the edge of Wellington Harbour, catching and selling fish off his boat *Conquest*.

He runs it from 8.30 am to 2pm every Sunday, and said it was good to see people being motivated by what was freshly caught.

"Over the years, people have come back from trying to pre-order what they want to coming down on the day and seeing what we've got," Hansen said.

"We're trying to bring the whole

thing back to eating seasonally ... and eating what's fresh on the day.

"Which is what it is all about, because otherwise you have a case of the tail wagging the dog, so we are trying to get the dog to wag the tail again."

Hansen set nets three to four times a week in Cook Strait catching a number of different species, but focussing on butterfish, blue moki and warehou.

Also a part-time painter, he said it was the tough wholesale market that drove him to move to a more boutique style of operating.

"It's very tough with the likes off the big South Island companies loading into Wellington in bulk ... so that has kind of cancelled out our wholesale market.

"We're really fishing predominantly for our little weekend market."

Having to juggle both jobs was difficult and meant constantly planning and re-planning, he said. But it also meant getting to know the locals,

including some who have been coming to the market since the start.

"We have got to know a lot of people really well. Some of the originals customers have moved on, some have passed away, and some of them are still there.

"They're the backbone of the whole business, they will turn up in a 35 knot southerly and rain ... and still buy their fish."

Everything is slurried, tucked away under deck, and pulled out on the day, meaning people get to see what each of the species "look like in their clothes", Hansen said. This saw more customers buying whole fish rather than fillets.

"That's what I like to see, people using the heads and the frames - even if they're making fertiliser out of it for their gardens or soup for that matter.

"It is just nice to see the whole thing being used and not thrown away."



# Amateur charter catch figures put snapper on top

Matt Atkinson

**Amateur fishermen on charter boats take far more snapper than any other species, figures released by the Ministry for Primary Industries show.**

Charter vessel catch comes under the recreational allowance in the Quota Management System.

Operators are required to register their boats and must file an Activity Catch Return detailing location, target species and catch numbers, fishing method and numbers fishing for every trip with paying clients.

Charter vessel regulations were introduced in November 2010 by Fisheries and Aquaculture Minister Phil Heatley who said it was important to develop a better understanding of our fisheries.

"We needed to find a good mechanism to gather meaningful information from charter boat operators while taking as little of their busy time as

possible. I'm confident we've achieved the right balance with this scheme," Heatley said at the time.

"Not only will better information on amateur fishing activities help greatly with understanding the importance of amateur fisheries, but it will also assist with overall fisheries management."

The numbers show that charter vessel clients are reeling in significant quantities of kaimoana nationwide.

In the year to October 2016 more than 159,000 of New Zealand's most popular recreational fish, snapper, were caught from charter boats, 149,000 of them taken in Fisheries Management Area 1 (FMA1).

The catch was estimated at around 110 tonnes.

FMA1 also had the biggest kingfish count with 14,300 taken.

In comparison, they didn't catch much else - 3300 trevally, 5600 tarakihi, 9000 scallops and 9500 kahawai.

FMA1 runs from North Cape to Cape Runaway on the east coast. It encapsulates the largest population for any FMA border, two million, with more than 405,000 recreational users fishing each year.

It is also home to 144 charter vessels, more than half of the 260 working New Zealand's waters.

Blue cod was the second most popular charter catch around the country, with 124,000 caught – 118,000 hooked in South Island waters.

In FMA3 (Kaikoura/Canterbury/Otago) 52,000 were taken and another 49,000 FMA5 (Southland/Fiordland).

Oysters were another big catch in FMA5 with 110,000 dredged by 28 boats.

The national rock lobster charter catch was 77,000, with 59,000 of those being taken by 26 boats in FMA3.

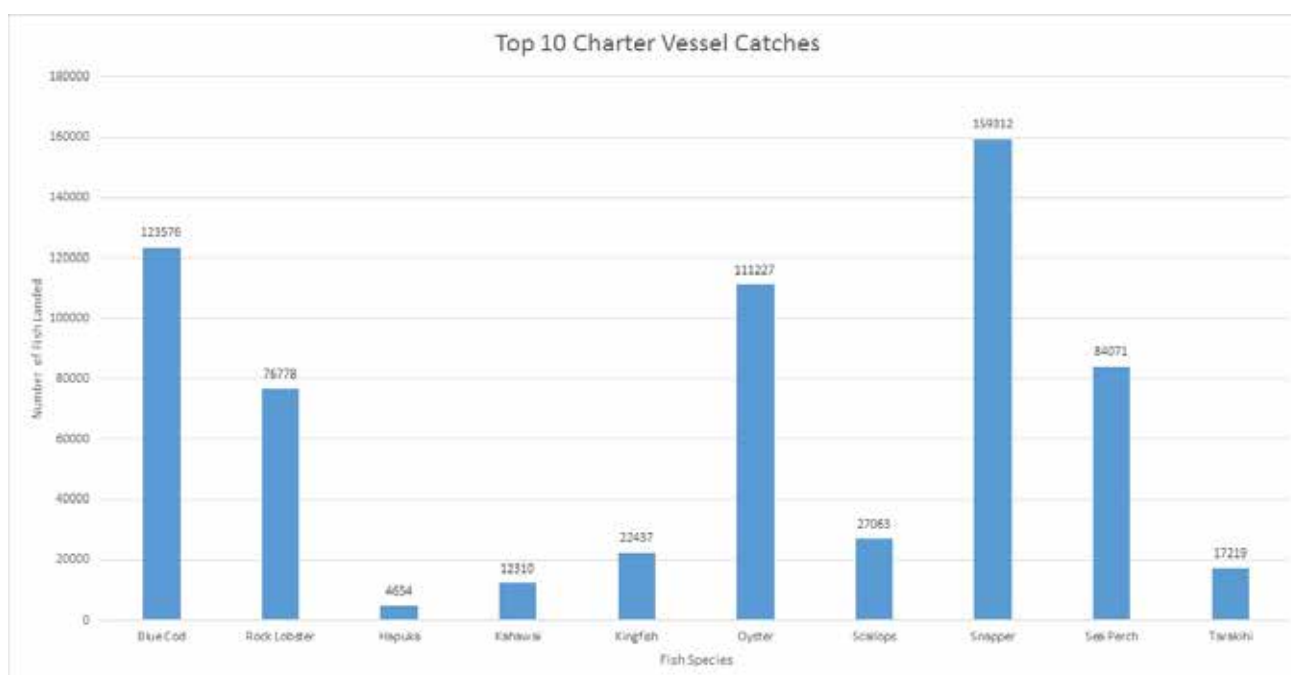
Sea perch was the fish of choice along the South Island's east coast, with charter boat anglers catching 79,000.

Gamefish such as bluefin tuna were singled out when the announcement was made, with Heatley saying it was a large proportion of the recreational catch along the west coast.

However, charter operators reported landing only three bluefin nationwide last year.

The law only requires catch figures for hapuka, bass, bluenose, blue cod, kingfish, rock lobster, southern bluefin tuna and pacific bluefin tuna.

The ministry said the figures for other species were voluntarily reported by the charter vessel operators.



All figures are for the year October 2015 to October 2016.





Graham Parker and Kalinka Rexer-Huber spent 13 months together as wildlife researchers at a South African weather station on Gough Island in the middle of the South Atlantic in 2010.

## Scientist couple pack their thermals for summer

**Rob Tipa**

**Dunedin-based conservation scientists Graham Parker and Kalinka Rexer-Huber have lived and worked together in some of the wettest, windiest and wildest places on earth.**

At a time when most people were planning their summer holidays, they were busy packing wet-weather gear and thermal clothing for their eighth consecutive summer in the Subantarctic Islands.

In 2009 half their friends thought they were crazy when they were dropped off by ship at a remote South African weather station in the South Atlantic for 13 months.

The other half thought it was a great idea for this adventurous pair, who saw their time on Gough Island as a fantastic opportunity to study wildlife on one of the world's most remote islands.

Parker has worked extensively in

conservation and wildlife management and research since 2002 and has specialist research interests in seabird conservation on land and sea.

He has worked as a commercial fisherman on purse-seine trawlers and longliners in south-east Alaska, so has a particular interest in seabird mortality in commercial fisheries and developing and testing new technologies to mitigate these losses.

Like her husband, Rexer-Huber has a Master's degree in Zoology from the University of Otago where they met, and is currently working on a population estimate of white-chinned petrels in the Auckland Islands and tracking the species across the Southern Ocean for her doctorate.

She has worked on population dynamics and tracking studies of albatross, petrels, prions and penguins and has researched rat and mouse eradication programmes in the Subantarctic.

In March 2012 the pair had the distinction of getting married in their gumboots in South Georgia, the last outpost of civilisation in the Southern Ocean for legendary Antarctic explorers.

They now work as consultants for Parker Conservation, which specialises

in ecological restorations, translocation of animals and plants and conservation management and research.

Before Christmas the pair were packing their bags for a return to the Auckland Islands.

"It's cold a lot, it's wet and it's pretty wild, but we do trade our summers in order to be down there I suppose," Parker said.

"Adams and Disappointment Islands have never had any introduced animals, plants or permanent human occupation so they're just about two of the most pristine islands in the Southern Ocean."

The pair say albatross are the most endangered family of birds in the world with 19 of 22 different species threatened in some way or another by many threats, including the fishing industry and predation by introduced mammals at breeding sites.

Scientists are still trying to quantify the impact the expansion of industrial fisheries has had on seabird populations since the 1970s.

Researchers in the New Zealand region only have estimates of seabird populations to work with, so Rexer-Huber said they don't know for sure if numbers are increasing or declining.

"We need to establish what part



Graham Parker negotiates precipitous cliffs on Campbell Island during a grey and white-chinned petrel survey in January 2015.

## **“Nobody ever wants to kill seabirds so that got me interested in what was happening and how to stop it happening.”**

the fisheries play and what part land-based predators play,” she said. “Some populations are looking better and some are looking really worrying.”

Wandering albatross populations are declining rapidly the world over, a major concern for biologists because this species has the longest breeding cycle of any bird, only raising one chick every two years.

“It looks like our Auckland Islands and Antipodes populations have declined dramatically in the past 20 years and we don’t really know why exactly,” Parker said.

Methods to mitigate the incidental mortality of seabirds is required by law in many countries, including New Zealand.

While improvements and uptake of mitigation is occurring in many regions, scientists know seabirds come into contact with unregulated fishing fleets in international waters and illegal fishing elsewhere. There is no requirement

for these boats to have observers on board or to use mitigation techniques to prevent seabird losses.

“Certainly some albatross species populations have plummeted and it is a double-edged sword with fisheries at sea and introduced predators on land. We also don’t understand the impact of climate change on seabirds.”

On Gough Island in the South Atlantic, huge populations of introduced house mice were literally eating their way through the albatross population, mobbing up to attack and kill albatross chicks 400 times heavier than a single mouse.

From his work in Alaska, Parker witnessed firsthand the conflict between fishing and wildlife.

As a former commercial fisherman he has some empathy for crews working long hours at sea. Some mitigation methods were laborious, time-consuming and when crews were sleep-deprived he said they were unlikely to

be used.

“Nobody ever wants to kill seabirds so that got me interested in what was happening and how to stop it happening.”

Working as a seabird ecologist for the Falkland Islands Fisheries Department between 2011 and 2013, he tested new techniques to mitigate seabird losses on the island’s deepsea trawler fleet, most of which were from Spain.

Parker said seabird by-catch issues there were different to New Zealand with high numbers killed annually when they hit trawl cables behind boats. He believes mortality rates may have been even higher had it not been for mitigation efforts to discourage birds flying into dangerous zones.

Some mitigation strategies developed in New Zealand and tested by Parker are now being adopted by the Falklands trawling fleet.

The industry in New Zealand came up





Graham Parker holds a black-browed albatross on a trawler in the Falkland Islands in 2011.

with a simple solution to hold fish offal on board and discharge it intermittently, dramatically reducing the number of birds following boats. This strategy is now a requirement for some larger boats working in a number of trawl fisheries here.

"There was huge resistance to it in the Falklands, but by the time I left they were more open to it," Parker says. "It's a really simple solution, but the cost

of retrofitting tanks and pumping offal overboard is not so simple."

"In the Falklands they thought it was impossible and now they are doing it, so that's one of the biggest successes of my time there I'd said."

Parker is now completing a research project for the Southern Seabird Solutions Trust to review international strategies to mitigate the incidental mortality of seabirds in commercial

fisheries. The trust's aim is to develop a resource that may be applicable to all fisheries in New Zealand waters.

Parker and Rexer-Huber say their research in the Subantarctic Islands is a privilege, but with it comes an obligation to share their knowledge with others and communicate what a national treasure these islands are to this country.

## Smaller effect on NZ populations

**Recent studies have shown the fishing industry is having a smaller effect on New Zealand albatross populations than previously thought.**

Southern Buller's albatross: A 2014 demographic assessment of the Snares Islands population of Southern Buller's albatross (*Fu, D; Sagar, P. 2016*) projected the population to increase by 6 percent over the next 10 years.

The report said: "Based on the overall trend in the estimated population trajectory and key

demographic rates from the base model, we believe that the fisheries risk to the viability of this population over the last 60 years appears to have been small."

The population growth was welcome. It had stalled in 2002, after more than doubling between 1969 and 2002.

Antipodean wandering albatross: A new Aquatic Environment and Biodiversity report on this endemic albatross has found that its population has been in decline since 2007.

In the past fishing has been blamed, however the MPI-funded report said the apparent impact of fishing within the New Zealand EEZ was small.

"It demonstrates that the

best estimate of adult mortality attributed to these fleets is likely to have had a negligible effect on population dynamics."

White-capped albatross: A consortium of MPI, DOC, Deepwater Group and Seafood New Zealand funded a helicopter census of the white-capped albatross in January.

Hundreds of thousands of white-capped albatross breed on the wind-swept Auckland Islands, representing about 95 percent of the world-wide population.

Numbers have fluctuated over the 10 years the study has operated, with the results from 2017's research due later this year.



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Picture: Fairfax Media

## When a tow is not a tow, and why it matters

Chris Carey

**In the light of a recent fishing vessel grounding and following on from a discussion between Maritime New Zealand and members of the Fishing Safety Forum where there were more questions than answers, I wanted to know when a tow is not a tow, and when can I or should I engage in a tow?**

In a life-and-death situation where the safety of the crew and the vessel is at risk there is no question that another vessel, when capable, should render what assistance she can and if this means passing a line across and towing the vessel and her crew to a place of safety, so be it.

However, it is important to understand when this occurs. This provision is contained in the Maritime Transport Act 1994, Duties of the Master, as follows:

### 19 Duties of Master

1. The Master of a ship shall —
  - a. be responsible for the safe operation of the ship on a voyage, the safety and
2. For the purposes of subsection (1)(c), a breach of any prescribed requirement

wellbeing of all passengers and crew, and the safety of cargo carried; and

- b. have final authority to control the ship while in command and for the maintenance of discipline by all persons on board; and
- c. be responsible for compliance with all relevant requirements of this Act and regulations and maritime rules made under this Act, except in an emergency when, in the interests of safety, immediate action in breach of this Act or of regulations or maritime rules made under this Act is necessary; and
- d. where an emergency requires that in the interests of safety an action is necessary that breaches this Act, or regulations or maritime rules made under this Act, as soon as practicable, notify the Director of the action and the circumstances which necessitated it and, if requested by the Director, provide to the Director a written report in respect of the action.

is permitted only if —

- a. the emergency involves a danger to life or property; and
  - b. the extent of the breach of the prescribed requirement goes only as far as is necessary to deal with the emergency; and
  - c. there is no other reasonable means of alleviating, avoiding, or assisting with the emergency; and
  - d. the degree of danger involved in complying with the prescribed requirement is clearly greater than the degree of danger involved in deviating from it.
3. Nothing in subsection (1)(c) permits—
    - a. the breach of any prescribed requirement as to the seaworthiness of a ship; or
    - b. the operation of a ship by a person who does not hold the appropriate maritime document; or
    - c. the operation of a ship by a person who does not have authority to operate that ship.
  4. Every Master commits an offence and is liable on conviction to a fine not exceeding \$5000 who, without reasonable excuse, fails to comply with subsection (1)(d).

Hence, there are very clear situations when the Master may legally step outside of the obligations of the Act and Maritime Rules. However the Master must advise MNZ and provide a report. Get it wrong and leave yourself open to prosecution.

In any case, when going to the assistance of a vessel in difficulty the first thing a Master should do is contact RCC providing details of their intended action.

However, as we all know, it is common practice for operators to tow another vessel, particularly in occurrence of mechanical breakdown. So the question is, what happens when a company uses one of its vessels to tow another vessel from one port to another, say to dry dock or to effect repairs? This is not an emergency situation as detailed in the MTA 94. I know we can do it, nay, we have done it, but are we legally allowed to do so and if not, why not?

In the case of a grounding where the crew has stepped ashore and there is no longer a risk to life, one could argue the line between a rescue and salvage operation has been crossed.

We have all towed vessels; I've towed vessels and I have been towed, it's what we do isn't it? Helping a mate out, a bottle of your favourite poison all it costs. But what if something went wrong? What if the towed vessel foundered, the trawl block gooseneck failed or the gallus came down, a winch brake let go or the towline parted and heaven forbid, a life or lives were lost as the result of a towline parting or a towing bit failure, or the tow overtakes us and we can't release the towline? Awkward!

In the cold light of day, standing before the tribunal where it was found your vessel was not surveyed for towing and there was also no provision in your MTOP for carrying out a tow in an emergency (or other), I dare say the full extent of the law would fall upon your shoulders. I imagine that not only the regulators but insurance companies would also want their pound of flesh.

It comes down to this: fishing vessels are surveyed under Maritime Rules

Part 40D: Design, Construction and Equipment – Fishing Ships and within these regulations nowhere, does it describe or list, or provide construction and survey requirements for your winches, warps, trawl blocks or gallus used in the fishing operation.

Vessels engaged in towing fall under Maritime Rule Part 40C: Design, Construction and Equipment – Non-passenger Ships that are not SOLAS Ships, and in particular part 40C.60 – Towing gear.

Now you may well be challenging this by saying, hang on, I'm a trawler, that's what I do, I tow. Unfortunately under the rules "towing" when referenced to fishing is not the same as towing when referring to salvage or other commercial towing operations. Besides the stability criteria for fishing vessels and vessels engaged in towing, i.e. tugs and AHTS vessels are also quite different.

Should you choose to have a vessel already under Rule 40D, surveyed under Rule Part 40C in order to provide additional towing options is probably in the too hard basket, as they haven't been built to that rule.

In addition, what of your insurer? What is its position on this? I don't know, you'd have to ask your insurer but if I was to ring Infidelity Assured and say "Look, the *FV Catchalot* is disabled, blacked out, listing, the crew can't charge their cell phones and she's drifting towards the bricks - I want to pass a line across and tow her to safety," I'm sure they'd say "Go for it" because where the safety of the vessel and her crew is at stake, there's no issue at all and never will be.

However if you consider carrying out a tow that crosses the murky boundary from Rule 40D to 40C into the realms of commercial rather than fishing vessel construction, then I would expect an insurer would refer you to MNZ for clarification because I very much doubt they would condone a vessel operating outside the law.

Yeah, I know, I know, you've been doing it for years. The question is in the complex and legal maritime world we now operate in, should we? Are we

leaving ourselves open to a fall?

If your vessel MTOP does not have an approved procedure for conducting a tow (in an emergency situation) then I would recommend talking with your Surveyor or MTOP company and have this amended. Draw up an SOP, a towing procedure and have it approved; no biggie. Whether or not your vessel needs to have an actual survey conducted for such an event, again your surveyor will be able to advise you.

**If you wish to use a vessel to tow another outside an emergency, all it may require is an exemption from MNZ. However MNZ will not consider an exemption unless it meets one of the following scenarios:**

- In what way has the requirement from which you are seeking exemption been substantially complied with, and why is further compliance unnecessary?
- What action has been taken or provision made that is as effective as or more effective than that required?
- Why, in this particular case, are the requirements prescribed in the rules clearly unreasonable or inappropriate?
- What events have occurred which make the prescribed requirements unnecessary or inappropriate?

**So in summary, if you are considering towing another vessel and your ship is not surveyed for this work:**

- Consider your legal obligations under the MTA 1994,
- Speak to your surveyor,
- Speak to your local MSI,
- Realise that simply doing what we done in the past may no longer be possible, or advisable.

**PS: Don't shoot me, I'm just the messenger.**

- A longtime contributor to Seafood NZ, Chris Carey is a member of the Fishing Safety Forum.





Rachel Reese (left), Donna Wells and Fleur Sullivan share a moment at the end of the Women in Seafood Breakfast held to mark International Women's Day.

## Seafood industry needs more women at the top, says Nelson mayor

**Nelson Mayor Rachel Reese had a clear message for women in seafood industry leadership roles when she addressed the inaugural New Zealand Women in Seafood breakfast: "Bloody good on you - we need more of you."**

More than 60 women from around New Zealand attended the breakfast at Trailways Hotel in Nelson, organised by FinestKind owner Donna Wells to coincide with International Women's Day.

Reese acknowledged the importance of the seafood industry to Nelson, Australasia's leading fishing port, and said the industry had one of New Zealand's best stories to tell.

Internationally 50 per cent of the industry's employees were women, predominantly at the grassroots level in roles such as fixing nets, on factory floors or book-keeping for family businesses.

If the women in leadership could "grab up some those other women in your businesses with some talent, and get beside them and mentor them and bring more forward, that would be even better", Reese said. It would help give a fighting chance of having 50 per cent of all New Zealand's leadership roles in women's hands by 2050.

Reese said the industry was all about innovation, creativity, high quality engineering, extraordinary science and

technology and respecting the resource.

"This industry understood that decades ago. But your real challenge is communicating how good you are to the public of New Zealand and to the markets of the world."

She singled out Nelson-based Sealord, New Zealand King Salmon, the Wakatu Incorporation and the iwi of the top of the South for "standing head and shoulders above the pack" in terms of innovation and product, and for delivering a long-term international industry.

"I'm very proud of what you do, and very proud of the opportunity it provides for everybody."

The industry was a major player in the New Zealand economy with the capacity to do more, Reese said.

"I'd love you to do more because you are an industry that creates fantastic careers for women, whether it is marketing those extraordinary products, whether it's through the Cawthron Institute's science and technology, whether it's through the amazing engineering technology that sits behind some of those boats out there that are like the best computers in the world on steroids."

She advised the women at the breakfast to keep looking for leadership roles, and to seek the help of a mentor who would support them to move forward.

"Go and sit down with some people you trust who have been in those roles and tell them what you want to do, and my experience is that they'll say 'Okay, let's get started.'"

Reese said the industry had a fantastic story to tell. It should understand its value and shout it from the rooftops.

"Don't lose that value because it's

very hard to get back once you do."

Guest speaker Fleur Sullivan of the celebrated seafood restaurant Fleur's Place at Moeraki, North Otago, said that by feeding people you meet a lot of them, "and that's wonderful".

Asked what she enjoyed most about serving seafood she said she loved the fishermen who supply her, and the whole industry.

"I love getting the fish in the tubs, still wriggling. I love showing my customers the fish - when the truck pulls up I like taking them out and looking on the back."

Sullivan said those fisherman had once put their catch into a chiller and seen it picked up by one of the big companies. That's where their connection ended. Asked about their occupation, they would often give a monosyllabic answer.

"With my restaurant they can come and have a beer, they'll be sitting at the bar, and when people ask what they do, now they say: 'I fish for Fleur'."

Wells, who started her award-winning seafood company in 2000, said the industry needed to promote itself in a positive and interesting way to attract and engage good people for the long term, irrespective of gender.

"Promote the industry, promote the product," she said. "There is a lot to be proud of and I believe we are all ambassadors for our industry."

Speaking later Wells said the event had received great feedback and reached 25,000 people around the world on social media. She was keen to organise another next year and was already thinking about possible changes to the format, length and timing.

"I'm in the ideas department at this stage."



Fleur Sullivan chats with a friend in the idyllic Moeraki setting of Fleur's Place.

## Waste the spur to international name

**Fleur Sullivan didn't have a big plan when she set up her internationally-renowned Moeraki restaurant Fleur's Place.**

"All I wanted to do was give people fresh fish," she said.

"I went on the fishing boats and saw what I felt was waste. That's when I started gathering up the fish bodies to make seafood stock. Then I wanted to smoke the cod heads, wings and livers, and eliminate that wastage."

Her restaurant began from a caravan 14 years ago. Today it employs up to 18 staff and can serve 230 people a day, starting at 9am. The restaurant, south of Oamaru beside the sea, has become a destination for both New Zealand and international travellers.

"They come all day," Sullivan said. "We say booking is essential - but that's because it's a long way to come if you can't get in."

Sullivan, guest speaker at the Women in Seafood Breakfast held in Nelson to mark International Women's Day, said

the event, attended by women from around New Zealand, had been a good reminder of "how huge and wonderful" the industry is.

"When I'm at Moeraki I'm only aware of my own problems and getting my own fish."

She said the breakfast gathering and her tour around Port Nelson had left her in awe of the seafood industry and the part that women play in it.

She didn't know anything about commercial fishing when she got going at Moeraki, and was frustrated to find that quota holders were interested in exporting their catch, not selling to a little seaside fish restaurant.

"As a restaurateur and marketer, I couldn't believe you couldn't get a fresh fish."

Her answer was to buy some blue cod quota of her own, paying double the going price.

"Once I got that, I was away."

Now the remaining Moeraki commercial fishermen supply her, an arrangement she feels is great for both sides.

"Everybody said nobody would ever go into Moeraki to eat fish, but maybe nobody knew how good fresh fish tasted. Even now, I work in my own small

world down there, and more or less the world comes to me."

Sullivan said fishermen were unfairly blamed for some impacts on the environment.

"They should be better organised and have a better voice. They are good guys."

Noting the strict requirements faced by commercial operators, she compared their performance to seeing the results of recreational fishing contests:

"The fish is not respected, it's dragged across the gravel and hung up in the sun to win a competition. I find that insulting to the fish and to the industry."

Having turned 78 in mid-March, Sullivan said she still had a lot of things she wanted to do but as for her restaurant, "I can't see how to give it up."

But given the opportunity, she would love to be involved in an initiative to improve the way the hospitality industry relates to the burgeoning number of Asian visitors, particularly the Chinese, whose attitudes to restaurant dining can pose challenges to traditional Kiwi service. "That's my future if I could do that."

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# Fleur's Whole Baked Flounder

## Ingredients:

1 whole fresh flounder per person,  
washed with sea water  
cooking spray or vegetable oil  
tartare sauce  
2 free range egg yolks  
½ tsp salt  
1 tsp Dijon mustard  
2 tsp white wine vinegar  
1 cup vegetable or soya bean oil  
2 tsp chopped spring onions  
1 tsp chopped capers  
2 tsp chopped gherkins  
1 tsp chopped parsley

## Method:

1. Preheat the oven to 190c.
2. Grease an oven tray with the oil and place the flounder on this.
3. Roast for 8-10 minutes, depending on size, or until the skin can just be pulled away from the flesh.
4. Allow it to rest for 2-3 minutes.

Serve with tartare sauce, plenty of lemons and a fresh garden salad or steamed seasonal vegetable on the side.

## Tartare sauce

1. In a large, heavy mixing bowl, place the yolks with the salt, mustard and vinegar.
2. Whilst whisking, slowly pour in the oil drop by drop until the mixture begins to thicken. Continue with the oil until the mixture is pale and thick.
3. Add the remaining chopped flavourings and taste for seasoning.





## A win-win for all stakeholders

**Relocating six Marlborough Sounds salmon farms will have wide benefits, writes Grant Rosewarne.**

There are relatively few opportunities that come along in life that are truly good for everyone - where every stakeholder group improves its position. As a society we strive for win-win outcomes but they are often difficult to achieve. The MPI-led initiative to relocate six low-flow farms to high-flow sites is such an opportunity.

Under the proposal, nine surface hectares of low-flow space (six existing farm sites), would be transferred to nine surface hectares of high-flow space. Importantly, if the MPI proposal goes ahead, the environment will be improved and there will be better social and economic outcomes.

### Environment

On high-flow sites NZ King Salmon can farm to a standard called the Best Management Practice guidelines. These were developed in consultation with local and international experts, the Marlborough District Council, NZ King Salmon and local community groups. On a low-flow site we achieve a good environmental outcome relative to broad acre land animal farming but on a high-flow farm we can achieve a stunningly good outcome - using the Best Practice Management guidelines we can operate to a world-class environmental standard. Everyone wants this!

Some groups have suggested that NZ King Salmon should go offshore – and whilst we can never do this entirely, quite frankly we agree with them. As you can imagine the company monitors the salmon industry in detail. If there is new technology, either regarding land-based or offshore farming systems, King Salmon always investigates and generally pays a visit. King Salmon has thoroughly reviewed the possibility of offshore farming, and whilst we think this will be achievable in about 10 years' time, there is currently not a single commercial operation in a fully exposed offshore location which has proven itself. To go offshore now could lead to a loss of fish, farm and crew.

### Social outcomes

Low-flow sites were allocated to NZ King Salmon up to 30 years ago before the conditions for our species were known and before the technology existed to utilise high-flow sites. The king salmon species requires deep, high-flow, and cooler water conditions. Fortunately, high-flow sites, by their very nature, tend to be further away from holiday homes, recreational areas and people. For example, our existing farm in Waihinu Bay, where there are numerous homes, could be moved a couple of kilometres out into the Waitata Reach where there are none.

### Economic outcomes

NZ King Salmon already employs 450 people in total including about 100 in Marlborough and 300 in Nelson and we are adding more each month because of three newly established farms (150 due to be added because of these). The company projects that, over time, the relocation of the low-flow farms will generate an additional 300 jobs at King Salmon. This will equate to about

400 in Marlborough, 400 in Nelson and 100 spread around New Zealand and in our various markets. MPI's modelling estimates 511 jobs from the relocated farms but this includes jobs created outside of King Salmon such as suppliers etc. That's a lot of families enjoying a top of the South lifestyle and all achieved while reducing the environmental impact of King Salmon's farms.

Under both scenarios, relocation or not, King Salmon will be farming its 11 farms (17 surface hectares) responsibly and creating value. However, when the above win-win proposal is on the table, why would we not grasp it with both hands and move forward? NZ King Salmon asks everyone who has an interest to send a simple supportive email submission to: [aquaculture.submissions@mpi.govt.nz](mailto:aquaculture.submissions@mpi.govt.nz) for all the reasons outlined above.

- Grant Rosewarne has been NZ King Salmon's chief executive since 2009. He has previous consumer goods senior management experience in Britain, Europe and Australia.

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## Big eel stories shouldn't exclude the truth

**Contrary to some views, the longfinned eel fishery is in good shape, writes Mike Holmes.**

The longfinned eel of New Zealand is an endemic species, only being found in New Zealand waters. It can grow to 10kg or more, and live quite long, the females typically to 40 years. It is by far our biggest freshwater fish - and being a big fish it attracts big fishing stories.

I think every Kiwi has a "big eel" story, and being a commercial fisherman for over 35 years I think I have heard most of them. Possibly some of these stories are even true. And true or not, a good story is a good story.

I have quite a few of my own of course, but I know all mine are relatively boring and since I never needed to subdue any with gelignite, or use a tractor to drag them out of the river because of their unbelievable great weight, I won't bore you with them.

However there is one eel story that has begun to persist in doing the rounds lately that isn't true and has become really annoying.

It is the story that "longfinned eels are on a pathway to extinction".

Promoted initially by activists short of a worthwhile agenda, it has been picked up by others who simply know no better and worse, some who should and probably do.

The Parliamentary Commissioner for the Environment, Jan Wright, in particular has called for a ban on commercial fishing of longfinned eel "to allow stocks to rebuild" as they are "on a pathway to extinction", somehow comparing them with kiwi birds which lay just one egg a year for say 25 years, while an eel, which spawns only once then dies, lays several million eggs in its lifetime. Also unlike kiwi, the longfinned eel has diverse and large populations in almost every lake, river and stream across New Zealand and they have a demonstrably improving recruitment trend over the past two decades of careful monitoring.

So, the trouble with the extinction story is that not only is it not truthful, it is demonstrably untrue.

Certainly it is fair to say that any freshwater fish species faces many threats from habitat changes, as they do throughout the world.

Fortunately in New Zealand most of the "threats" to eel have long been recognised, and are being either avoided, rectified or mitigated.

Commercial fishing which was once largely unconstrained is now managed under the Quota Management System and catches are now restricted to very conservative levels. Recent minimum and maximum size rules have reduced the numbers being taken and ensured that females can attain the required condition to breed.

Some 25 per cent of New Zealand is legally protected from commercial fishing and about half of all water is not fished for access or economic reasons with only about 20 per cent of water

actually being fished.

Data capture from commercial landings, eel processor reports and various research projects are analysed by MPI's eel working group. This analysis shows that the fish stocks that are subjected to commercial fishing are in good shape.

Recruitment monitoring of juvenile eels is established throughout the country and is showing an improving trend.

Another thing to bear in mind is that the comprehensive assessment and management systems for New Zealand's eels are different in nearly all respects (despite what some say) from the situation of New Zealand whitebait.

In summary, contrary to the claim that "eels are on a pathway to extinction" eel stocks are in good shape and showing a stable to improving trend.

While habitats have certainly been much reduced in the past, mainly due to farmland development, there have been major steps taken in rectifying this issue. Many landowners are now very aware of their obligation to protect water quality and fisheries, and are taking appropriate steps to address this by fencing of waterways and wetlands. So good on them and great news for freshwater fish!

The Quota Management System depends on a scientific approach. Let's keep it that way.

- *A commercial eel fisherman since 1979, Mike Holmes lives and operates out of Tamahere, south of Hamilton. He has been chairman of the Eel Enhancement Company since its formation in 1997.*





EVENT

High-speed mussel-opening wows the crowd watching the fiercely-contested teams event.

## Mussel festival pulls a crowd

**Two thousand people attended the 13th annual Havelock Mussel and Seafood Festival on March 18.**

This was a boost for the organisers who were bedevilled by bad weather in the previous two years, when the festival failed to make a profit.

Havelock bills itself as New Zealand's mussel capital and, as ever, Greenshell mussels were to the fore, with plenty consumed and others opened at blinding speed in team and individual competitions.

There were also many other foods

on offer, along with live entertainment, displays explaining mussel farming, a children's area and popular cooking demonstrations by 2014 Masterchef winners and TV personalities Kasey and Karena Bird.

Kono Dayshift took out the mussel-opening team competition from Kono Nightshift, while reigning champion Angela Fredericks won the individual competition by opening 100 mussels in 2m26.53s, ahead of another Kono opener, Khan Rangiuiaia, on 2m66s.

Fredericks also made an attempt on her world record time of 1m55.73s, set last year, but missed out, recording 2m04.47s.

Havelock's Hairy Mussel Co was judged to provide the best mussel dish

of the Festival, Marlborough steamed mussels served in the shell, with a slice of lemon. Stall staffer and former owner Helen Johnston said the dish allowed people to "taste mussels as they should taste". Havelock School took out best community stall while Feast Merchants were named best commercial stall and also won best seafood creation.

The festival programme had been revamped since last year and the organisers said they were happy with both the way the day had gone, and the turnout.

It was however lower than in some earlier years, when attendance was as high as 6000.



Wisecracking TV chefs Karena (left) and Kasey Bird get some help from audience member Robbie Crocker as they prepare deep-fried oysters with kina mayo before a large crowd.



Emma Blom (left), Helen Johnston and Maegen Blom with their winning dish, Marlborough steamed mussels.



Also known as the king-clam, with its large siphon the geoduck is regarded as an aphrodisiac in some Asian markets. Picture: PZL Harvesters.

Geoduck pulled from the water. Picture: PZL Harvesters.

## Getting their ducks in a row

Matt Atkinson

**An odd-looking clam is fetching big dollars in China and Hong Kong, and a Marlborough-based company is hoping to capitalise on the demand.**

PZL Harvesters catches geoduck, also known as New Zealand's King Clam, in Golden Bay and part owner David Cunliffe needs a hand getting his "superior product" into the overseas markets.

Cunliffe, who is also a deep-water commercial fisherman, set-up the company in 2008 with a business partner, when they started acquiring ACE for the deep-burrowing clam - their biggest allotment being 11 tonnes in FMA7 (Nelson/Marlborough).

Geoduck is a dive fishery, with the diver weighted to the bottom, individually picking the fish and breathing through a hose with surface supplied air.

After moving small amounts into China and to the restaurant Live Fish in Auckland, they acquired a three-year special permit from the Ministry for Primary Industries.

The permit was for FMA7 and allowed them to catch 50 tonnes in year one, 75 tonnes in year two and 100 tonnes in year three; a significant

increase on their ACE.

However, without the experience in marketing, they have struggled to move that quota into overseas markets.

"We have sold into China but never consistently and it's quite a big operational thing," Cunliffe said.

PZL suffered a major setback in year one of the special permit when a supply contract into China fell apart at the last minute, after a Korean geoduck came on the market undercutting the price.

"Ours is a better fish and we have to get that across to the market.

"We just need someone to take hold of the duck from the boat and sort sales and logistics into the markets. That's where a strong business partner would come in so we can concentrate on harvesting."

The meaty siphon is sought for its flavour and texture. The geoduck is considered a delicacy in China and also features in Korean and Japanese cuisine, served variously fondue-style, in soups and stews, and raw as sashimi.

Auckland University of Technology Professor Lindsey White has worked with Cunliffe in establishing the sustainability credentials of the fishery and said there is big potential for growth.

White and Auckland University fisheries statistician Russel Miller worked on a biomass study in northern Golden Bay, with results that look "very positive".

"Looks like the total allowable

commercial catch, just from surveying that very small area, not extrapolating for the whole of the FMA, is in the order of around 40 tonnes or so," White said.

"Given that the total allowable commercial catch around that FMA right now sits at about 17 tonnes, we think there could be significant increases in what can be sustainably harvested."

The special permit further illustrated that there was confidence in growth for the area, he said.

"I guess the point to be made there is that MPI were comfortable there was enough clams that taking 100 tonnes in year three was not going to damage the fishery in any particular way, and 100 tonnes a year would be a pretty good fishery."

PZL have also been working with Cawthron Institute, providing them with brood stock so they can better understand the early stages of the geoduck's life cycle.

Aquaculture group manager Serean Adams has been working with the clam for 10 years now and said Cawthron wanted to help develop geoduck aquaculture in New Zealand, primarily because of their high value in the Asian markets.

"Our work is focused on improving the techniques and methods used for the production of juveniles in the hatchery, as well as developing commercially feasible methods for growing geoduck in coastal areas,"



Adams said.

She agrees with White that further research could present new opportunities.

"I think there is great potential for this species both as a fishery and for aquaculture."

To store and clean the geoduck, PZL have been using the Cloudy Bay Clams depuration facility, just south of Seddon.

This can hold tens of thousands of molluscs and is the only one of its kind in the country.

Specially designed tanks are used to pump fresh seawater from the ocean, allowing the clam to purge itself of any sand or grit.

Cunliffe said PZL was grateful for Cloudy Bay letting them use their facility, but would like to build one of their own to help grow their business substantially.

"We need something like that to actually go forward. It's not that

expensive but it's got to be done.

"There are a number of sites you could do it in; there's some in Golden Bay and places in Nelson ... so it can be close to the source of the fishery or close to export market sites; like a local airport or near the international airports.

"The geoduck is really hardy and travels well so the tank can be situated almost anywhere."

With the fishery at times subject to closure under the Marlborough Shellfish Quality Programme, having the facility would allow PZL to hold and export fish, even when the growing area is closed.

"It's continuity of market. You can harvest and then hold and then send when the market needs it.

"There's a whole lot of good reasons for it.

"We need that facility and we need some marketing muscle - someone who can go into China and get this fish established."

The New Zealand market will be playing catch up with Canada and USA, where exporters along the west coast, particularly in Washington and British Columbia, have already identified the value of geoduck.

In the US alone, they have doubled the exports, and the value, of pacific geoduck from 3058 tonnes at \$64 million in 2010, to 6285 tonnes at \$132 million in 2015.

The boost in exports has been a response to continued demand in up-market Chinese and Hong Kong restaurants, where the delicacy is fetching up to \$400 a plate.

PZL Harvester continue to sell their geoduck through Live Fish and at Solander's online store, Gourmet Seafood, but the export potential is being missed.

"We have the New Zealand 'clean green' image behind it, but we have to get it over there."

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