

Fish out of water

Hypocrisy on the High Seas

While New Zealand regularly sermonises about the evils of Japan's Antarctic whaling, few realise our own boats are involved in controversial fishing nearby. Mike White examines the story of the Antarctic toothfish and what on earth we're doing in the world's most pristine ocean.

This is a story set at the bottom of the ocean at the bottom of the world. It's a place where few see what's going on and no one knows exactly what's happening.

Each summer fishing boats from New Zealand and other nations steam south to the Ross Sea and hunt for Antarctic toothfish. It's butt ugly, lives up to two kilometres below the surface, grows to two metres and can weigh 140kg. It's slow growing and slow living – scientists estimate its heart beats only once every six seconds and it can live for 50 years.

When the ships searching for it arrive at the Ross Sea's icy edge, they let out longlines – vast ribbons with up to 10,000 hooks that trail for kilometres, then haul in everything their baits deceive.

Between December and February each year these ships take more than 3000 tonnes of Antarctic toothfish (about 100,000 fish). Their catch is sent to the finest American restaurants and sold for prices so high it's been nicknamed "white gold". You see, the fish's survival mechanism is ironically its ultimate enemy when man comes calling

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PHOTOGRAPHY BY JOHN WELLER.

– the oily flesh that insulates it in near-zero degree waters is beloved by chefs, retaining moisture and flavour in its rich flanks.

Exported from New Zealand at around \$25 a kilo, it can end up in New York delicatessens for \$120 a kilo or \$60 a portion at restaurants.

Except, it's not known as Antarctic toothfish by the time it tempts shoppers or is delicately positioned on white china for discriminating diners. By this stage, it's been dubbed "Antarctic cod" or "Chilean sea bass" to appeal to the punters. Toothfish, apparently, sounds just a touch too repulsive to whet appetites.

It's not just diners who are in the dark about the toothfish (real name *Dissostichus mawsoni* and a close cousin of the Patagonian toothfish). The fishermen who catch it, the governments who encourage it, the international bodies which oversee it and the scientists who study it all admit there are considerable gaps in our knowledge of the fish.

Nobody has ever seen an egg. Nobody has found a juvenile fish or knows where they live or what they live on. They think they know where toothfish spawn but they're not certain. They're not even sure if it spawns every year. They thought it reached sexual maturity at age eight – but last year revised that estimate to 16. For nine months of the year when ice covers the sea, we can only assume or guess what these fish do.

And it's this paucity of information that alarms scientists and environmental groups who say fishing toothfish without knowing the facts is so dangerous it could lead to the catastrophic collapse of yet another species. In addition, the effects of removing a top predator from a relatively untouched ecosystem are equally unknown and perilous. And thirdly, critics argue that, given the Ross Sea is considered the most pristine ocean left on the planet, surely we can preserve it as the one ocean free from commercial interests and intrusion.

Thus, this hitherto ignored and unloved species is creating an international storm – and New Zealand has found itself at the storm's eye.

Illinois University professor Art DeVries has been studying marine life in Antarctica for nearly 50 years.

Since 1971, he's been involved in a programme catching and tagging Antarctic toothfish in McMurdo Sound at the Ross Sea's southern end. In good years, researchers caught 500 fish through holes in the ice before releasing them.

In 1996, the first fishing boats arrived in



The Antarctic toothfish (*Dissostichus mawsoni*), served up on dinner plates as Chilean sea bass.

ALAN BLACKLOCK, NIWA

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the Ross Sea, New Zealand ships testing the waters for Antarctic toothfish.

The number of boats and countries rapidly grew and within a decade more than 20 ships were taking over 3500 tonnes of the fish each summer.

However, the number of fish DeVries hooked plummeted. By 2003, he caught just 30 fish. By 2006, he couldn't catch any.

At the same time, scientists at McMurdo noted the virtual disappearance from the area of Ross Sea orca, which prey on toothfish.

DeVries, whose research programme has been devastated, began raising concerns about what was happening to the toothfish population. He suggested the fish from McMurdo had moved north to replace those being caught by the fishing boats which target toothfish in the richer feeding grounds further out.

To DeVries, the disappearance of fish from McMurdo was like the canary in the coalmine, pointing to serious ecological problems.

Waters around Antarctica are controlled by the Commission for the Conservation of

Antarctic Marine Living Resources (CCAMLR), an offshoot of the Antarctic Treaty nations which oversee Antarctica itself.

It approves any fishing in the area and limits how many fish can be caught.

You might have thought at some point DeVries, the scientist with the longest research history into Antarctic toothfish, would have been consulted when the fishery was being established or when catch limits were decided – especially given the lack of knowledge about the fish. But DeVries says he's never once been asked for information or opinion by CCAMLR.

"I know what's not known. But they've never been interested in hearing what I have to say."

When he submitted papers outlining concerns about the fish's population, his research was dismissed as unscientific and incomplete.

Because of the gaps in knowledge about toothfish, CCAMLR still classes the fishery as "exploratory" and claims the amounts it permits to be taken are precautionary.



The Ross Sea is considered by scientists to be the planet's most pristine ocean.

But remarkably, this so-called precautionary approach allows the Antarctic toothfish's population to be eventually reduced by 50 per cent. So far CCAMLR estimates 20 per cent has been taken.

DeVries fears the figure is much higher but says nobody truly knows because such little research has been done to provide accurate data. Nor does anyone have any real idea what effect this is having on the rest of the environment and food web.

"They put all their stock in models, which are so full of assumptions they're just a lot of hand-waving."

Not only is New Zealand a major player in fishing for Antarctic toothfish, it's also at the heart of CCAMLR's research on the species. The four New Zealand boats that fish the Ross Sea each year tag and release fish, and scientists from the National Institute of Water & Atmospheric Research (NIWA) produce many of the scientific papers and interpretation CCAMLR relies on.

But as this science is predominately fund-



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American marine ecologist Dave Ainley

ed by the Ministry of Fisheries, which actively supports fishing for Antarctic toothfish, DeVries questions its independence.

He says New Zealand makes much of its environmental credentials, its stewardship of the Ross Sea and its leadership in precautionary fishing.

"But all this flies in the face of the aggressiveness of its commercial fishing. They speak out of both sides of their mouth."

There's an extreme irony in how the seas around Antarctica are treated compared with its icy landmass.

On land the strictest regulations exist to protect wildlife and the environment. You daren't even pee in the snow – in the field you must use a bottle and bring it back to base for disposal. It would be unthinkable for an annual quota of penguins or seals to be killed.

Even mining has been banned – including drilling for oil from the seabed.

But when the farsighted nations of the Antarctic Treaty, including New Zealand, agreed to such protections 50 years ago, they failed to extend it to the surrounding waters.

In 2008, a study of the world's oceans by 20 international scientists rated the Ross Sea the most untouched marine environment on the planet. Hence calls for it to be permanently protected – a living laboratory, a link with evolution, a last undisturbed environment.

While it's just three per cent of the Southern Ocean, it's home to the world's southernmost mammals, a quarter of all emperor



A minke whale emerges from the icy waters of the Ross Sea.



Top: Poaching has long been a problem in Antarctic waters. Centre: Australian Customs and Fisheries officers prepare to board a pirate fishing vessel. Above: An illegal toothfish catch.

penguins, minke whales, giant sea spiders, metre-long worms and fish full of anti-freeze. The colossal squid now pickled at Te Papa was dredged from its depths.

American marine ecologist Dave Ainley has been working in Antarctica since the late sixties and says New Zealanders simply don't realise the effect their fishing industry is having in the area.

And he suggests there's an element of hypocrisy that New Zealand has led criticism of Japanese whaling in the Southern Ocean while happily exploiting another species, less popular with the public, less likely to evoke arguments of morality.

Ainley says in his lifetime he's seen salmon and rockfish disappear from his own home coastline in California due to overfishing.

"So I've seen ecosystems wrecked and it just keeps happening over and over again and the Ross Sea is really, truly, the last place. And I can't just sit around and watch it happen."

So Ainley has helped form Friends of the Ross Sea Ecosystem, to protect the area and has lobbied CCAMLR to stick to its name and conserve the marine habitat.

"Basically right now we're in a race against time to collect data and understand what the effects of fishing are."

Greenpeace's Karli Thomas says the only reason fishing companies are now operating at the ends of the Earth are because other areas have been overfished through greed and ignorance.

"And now we're simply shifting the mistakes to a new ocean. New Zealand led the charge into the Ross Sea and New Zealand needs to lead the charge out."

2009 wasn't a great year for New Zealand toothfish boats. But despite increased competition and lower catches, the companies – Sealord, Talley's and Sanford – still exported 539 tonnes of Antarctic toothfish, earning \$12 million.

Some years that figure has been over \$20 million and pound for pound, it's about the most valuable fish we export.

Understandably therefore it's not one New Zealand's fishing industry is about to give up lightly because of the concerns of environmentalists and scientists who want the Ross Sea protected.

The fishing companies point out their fishery is legitimate under international law, defend their environmental standards and affirm their belief they're not overfishing the species.



British vessel Argos Georgia hunts toothfish in the Ross Sea.

Seafood Industry Council spokesman Alastair Macfarlane dismisses DeVries and Ainley as "scientists who've been doing a little bit of drop line fishing through the ice in McMurdo Sound for a number of years", rather than those who are directly involved in CCAMLR's scientific research.

"It's like making an assessment of the sustainability of snapper stocks by throwing a line off the rocks at the end of Wellington harbour."

One of those scientists CCAMLR relies most heavily on for making decisions about Antarctic toothfish is Niwa's Stuart Hanchet.

Hanchet has studied the fish for a decade and while he admits there are gaps in their knowledge, he remains confident the species is not being over-exploited.

"There are things we know well and some things we know reasonably well and some things probably not so well."

But surely taking a top predator like the Antarctic toothfish from the Ross Sea must have effects, amplified throughout the wider ecosystem?

"I don't think you can say that yet. I don't think there's been enough work done on that particular area. I think we're working on it but I don't think you can say for sure."

And therein lies the main concern of those who say we're being reckless with both Antarctic toothfish and the fragile Ross Sea environment. We go in and fish, do some science afterwards and hope we haven't made an irretrievable mess in the interim.

This lack of knowledge was highlighted by Niwa's chief fisheries scientist, John McKoy, at a media briefing in March on our fisheries.

"For most fish stocks I'd suggest we don't know very much at all... in other words, you guess."

"If you think weather forecasting's hard, predicting what's likely to happen in these big biological systems in a complex oceanography is just as, if not more difficult."

McKoy said that funding for research had effectively halved in the past 15 years but they were still expected to provide reliable advice.

While CCAMLR emphasises how cautiously it restricts Antarctic toothfish because much is still unknown, research to fill these gaps is limited.

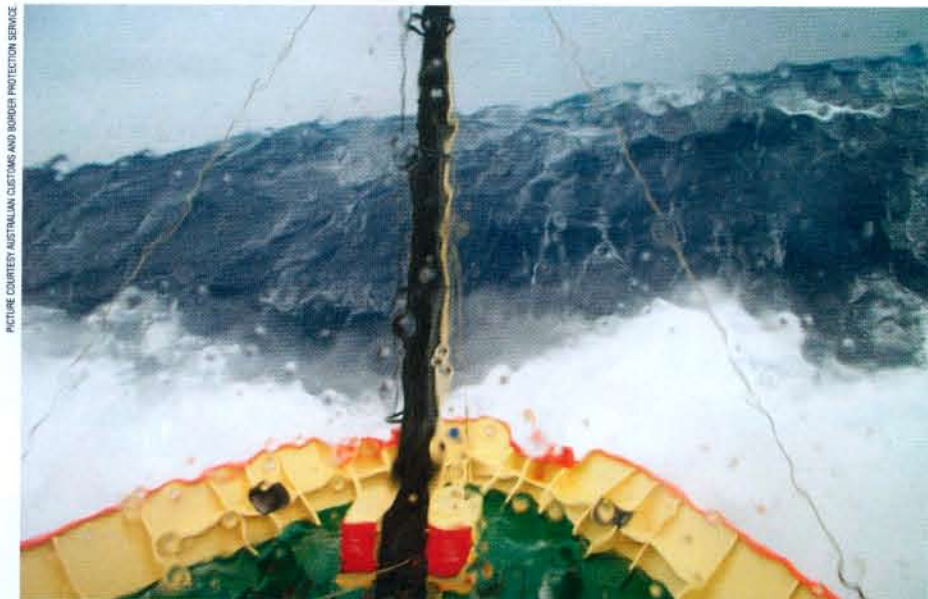
Apart from work done in McMurdo Sound and very occasional visits by Niwa vessel Tangaroa, scientists rely on data from the fishing boats themselves.

While New Zealand boats generally comply with these reporting requirements, other Antarctic toothfish vessels don't. The tagging regime which much of the confidence about the fishery's health is based on is not without flaws – until now mainly small fish have been tagged because big fish are more difficult to deal with and more valuable to keep.

And all this relies on the honesty and competency of the fishermen. Critics suggest there's little incentive for them to provide information which suggests Antarctic toothfish stocks are declining.

Supporters argue that's why there are two observers on board each vessel, overseeing catches and compliance.

Yet even this is hardly fail-safe.



Environmentalists say fishing fleets are only in such dangerous Antarctic waters because all other oceans have been overfished. Here, the Australian customs ship Southern Supporter battles huge seas.

In 2008 New Zealand officials boarded the Namibian-flagged Paloma V in Auckland, a ship permitted by CCAMLR to fish for Antarctic toothfish in the Ross Sea. Investigations of its computers however found it had rendezvoused with and refuelled other illegal or "pirate" ships – despite having CCAMLR observers on board.

As Trevor Hughes, the Ministry of Foreign Affairs & Trade's Antarctic policy unit head and our representative at CCAMLR, puts it, "There are observers and there are observers and any system is capable of being rorted."

This proof of illegal fishing in the Ross Sea – previously thought to be at minimal levels – just adds to critics' concerns that we really don't know the true picture of what's going on with Antarctic toothfish or the Ross Sea ecosystem, and until we do, we should stop fishing there.

Indeed CCAMLR has identified the Ross Sea as part of a network of marine protected areas it's agreed to establish in the Southern Ocean by 2012.

Environmental groups are lobbying strongly for the Ross Sea to be completely protected and their cause will be helped by Christchurch filmmaker Peter Young's documentary *The Last Ocean*.

Likely to be released on the internet prior to film festival screenings next year, Young is confident it will alert people around the world to what is happening in the Ross Sea and the need to stop fishing.

However MFAT's Trevor Hughes sum-

marily rules out protection for the entire Ross Sea. "As a political fact, that isn't going to happen, even if New Zealand wished it to happen. There are a number of countries that have made it very plain they will not agree to any marine protected area regime that in their view restricts fishing."

However CCAMLR was investigating smaller areas within the Ross Sea that could be off limits for fishing, Hughes says, though he has no idea of their size or spread.

But Barry Weeber, a board member of the Antarctic and Southern Ocean Coalition, an international grouping of environmental organisations like Greenpeace, WWF and Friends of the Earth, is surprised Hughes has already ruled out total protection.

He says CCAMLR hasn't gone through the process of deciding which areas should be set aside, and ASOC and many other groups would continue to seek protection for the entire Ross Sea.

"It's a difficult ask but it's not impossible. Environmental groups have been involved in some rather impossible issues over the years and had quite significant victories."

Antarctica New Zealand's environment manager, Neil Gilbert, says there would be enormous benefits if Antarctica's protections were extended to the Ross Sea.

"It would be a tremendous achievement for mankind. Antarctica is one of the places where, to an extent, we've got it right, where we recognise the importance of the environment, undertaking science to inform us about the behaviour of the planet. And in that context I think the Ross Sea has tre-

mendous value. But it's hard to stop something you've already given the go-ahead to."

Meanwhile, the three New Zealand companies which catch Antarctic toothfish have been battling for nearly three years to have the fishery certified sustainable, enabling them to put an eco-label on their catch.

But their application to the Marine Stewardship Council has attracted considerable international opposition and in May, initial approval was rejected by an independent adjudicator who cited a string of grounds for doubt about the decision.

While much is made by the fishing companies of their environmental credentials, seeking a green tick for their product is largely about ensuring they can sell, and charge more for, their fish in an increasingly discerning market.

While Sanford labels itself "The Home of Sustainable Seafood" and has a comprehensive sustainable development report replete with quotes from Theodore Roosevelt, Nelson Mandela and Kofi Annan no less, its 2009 annual report merely notes certification "will add value to the product caught by our vessels".

The process has cost close to half a million dollars thus far – \$77,000 of which has been provided by taxpayers through a Ministry of Fisheries fund which supports the fishing companies' application.

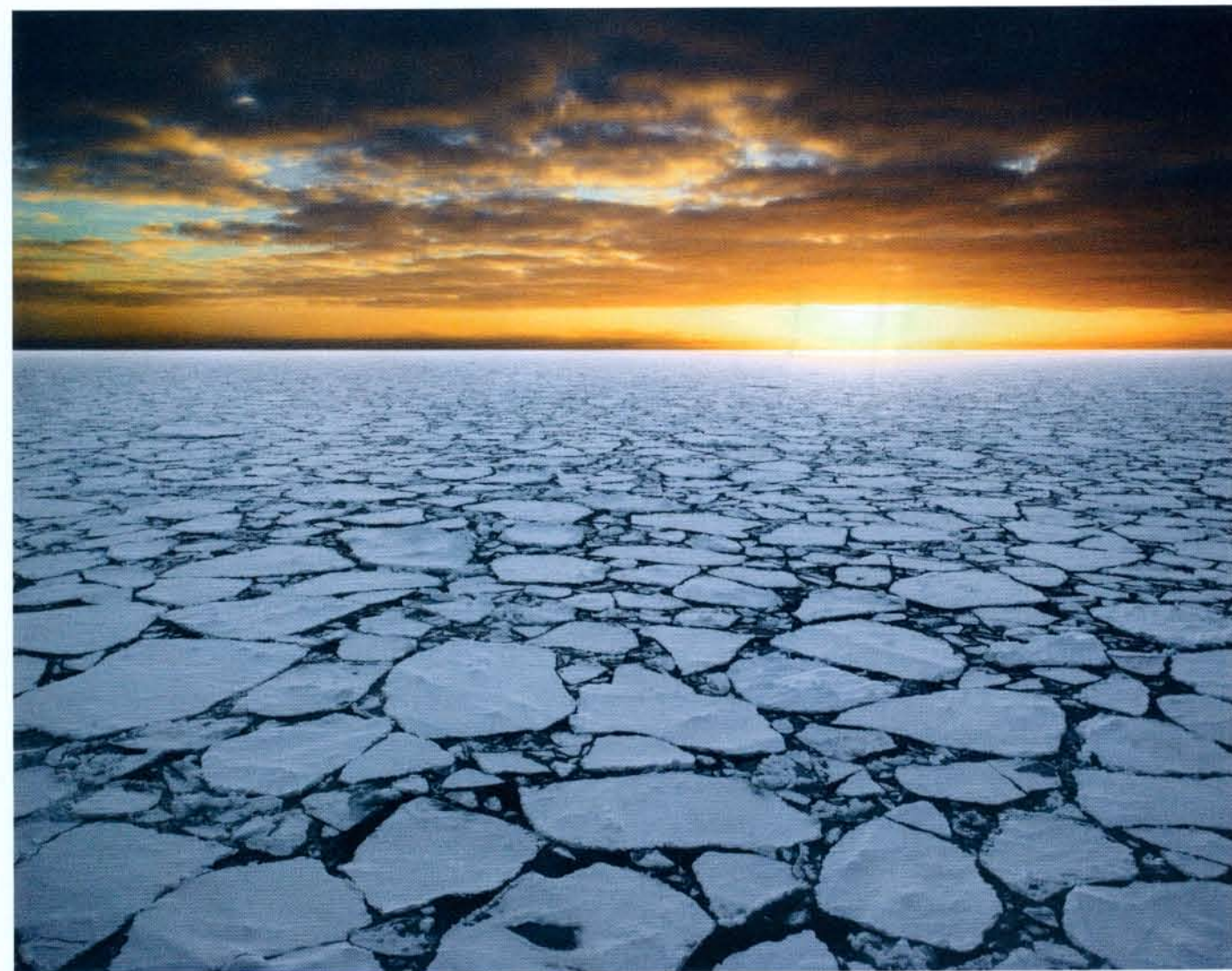
In the meantime some supermarkets and restaurants around the world have begun to ban toothfish because of concerns about its sustainability, including Wegmans, an American chain of 75 supermarkets which won't take any fish from the Ross Sea.

In late May, the world's largest container shipping company, Maersk, announced it would review transporting Antarctic toothfish from New Zealand for the same reasons.

While it isn't generally available in New Zealand because much higher prices can be obtained overseas, Steve Logan of Logan Brown in Wellington, *Cuisine's* 2009 restaurant of the year, says he wouldn't consider having Antarctic toothfish on the menu.

"No, no no no no. Definitely not. It's not necessary, it's just greed, it's just an opportunity for somebody to make some bucks, buying and selling fish."

"We've got one place left in the world that hasn't been affected badly yet, and people are just going in snatching and grabbing, taking out fish to go to some swanky restaurants around the world. It's disgusting."



Logan's restaurant partner and *Hunger for the Wild* TV colleague, Al Brown, says it makes no sense to commercially fish a species we know very little about.

"And surely there's more value in leaving untouched the only ocean left in the world that has its ecosystem intact, than any commercial short-term gain to be had by the fishing industry?"

There are any number of equally good questions that can be posed about New Zealand's involvement in this issue, such as: is taking 100,000 Antarctic toothfish a year actually potentially worse than Japan killing a few hundred whales in the same region, and is this possibly a case of selective morality when it comes to fishing?

Is there anything socially redeeming about taking a 50-year-old fish from a pristine ocean and serving it up thousands of miles away at the finest restaurants,

disguising its real name?

Is it worth risking a remarkable environment, not for survival or necessity, but for pure luxury?

And as New Zealand's involvement in the fishery becomes publicised internationally, what will it do to our environmental image?

British journalist Charles Clover who wrote *The End of the Line: How Overfishing Is Changing the World and What We Eat* (the film of which is now screening in New Zealand), says there are many famous examples of scientists insisting fisheries were healthy only to be proved completely wrong, such as the collapse of Canada's cod fishery.

And he draws attention to how fragile the Antarctic environment is – Russian trawlers having virtually wiped out marbled rock cod in the seventies and Patagonian toothfish being severely depleted by unregulated fishing.

Auckland University Antarctic scientist Clive Evans says he hopes Antarctic tooth-

fish won't be added to this list of ecological disasters. He's studied the fish since 1994, for the past decade working with Art DeVries in McMurdo Sound, and says the fish's disappearance from there is a red flag that can't be ignored.

"We used to catch hundreds a season – now we catch none. The [scientific] modellers, of course, will say they're comfortable with it and they believe they've got everything under control – that's what they'll say. But then I'm saying, I don't think that you have."

For Dave Ainley, whose home is in California and whose heart is in Antarctica, it's simply not sustainable to take up to 50 per cent of Antarctic toothfish – that's only sustaining the fishing industry.

"The Ross Sea is like the Garden of Eden was; it's like the world was before humans started to spread around the globe, which has seen the depletion of one species after another. And there's nothing left after the Ross Sea."