BYCATCH BYLINES

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HEADLINE

Federation mitigation

A programme to boost protected species bycatch reduction was announced at the annual conference of the Federation of Commercial Fishermen. What does this mean for operators?

The Federation's annual conference is always a good place to take the pulse of the industry, and this year was no exception. Fisheries Inshore New Zealand (FINZ) announced its plan for all inshore operators to participate in a programme focused on reducing protected species bycatch risks.

Chief Executive Jeremy Helson likened the programme to what is already happening in deepwater and surface longline fisheries. FINZ will work on the roll-out alongside the Department of Conservation (DOC) and Ministry for Primary Industries (MPI). FINZ's goal is to have all inshore vessels equipped with a vessel-specific plan to reduce risks of bycatch for protected species by 2020. The programme will also include:

- Operational procedures developed for each component of the inshore fleet and prepared by FINZ in consultation with operators and interested parties
- Triggers that result in operators reviewing mitigation practices and notifying a designated contact point on land when a certain number or type of protected species capture events occur
- Monitoring, e.g. by government fisheries observers, to audit on-vessel implementation of practices described in plans, and
- Performance reviews by DOC, MPI and industry representatives.

Ensuring that plans remain current also means operators will need to train new crew on operating procedures over time.

Onshore and at sea, the seafood industry is working to improve performance. *Photo: © M.P. Pierre*

Rolling out the programme across the inshore sector is part of FINZ's recognition of the industry's impacts on protected species, and the need to minimise those impacts and continue improving performance. The programme will also recognise and codify positive actions where they are already in place on inshore vessels.

The inshore programme announcement comes hot on the heels of Seafood New Zealand's work on an industry-wide code of conduct. The Seafood NZ team has been visiting ports to spread the word among industry operators. That code is broader and includes not condoning illegal behaviour, working towards policies that ensure sustainability, minimising environmental impacts, investing in science and innovation to enhance fisheries resources and add value, supporting increased transparency, looking after people, and being accountable.

BEST PRACTICE BASELINES

When it's night and the moon is bright

Full moon is a very high-risk period for seabird captures in surface longline fisheries. When it's night and the moon is bright, what should you do?

- Get your tori line in tip-top shape before full moon and have a spare one handy. That means at least 75 m of aerial extent to help protect baited hooks from hungry seabirds.
- Have line weights on all snoods. Be prepared to move weights closer to the hook to sink gear faster and keep it away from birds.
- Avoid setting gear into a flock of waiting birds.
- Talk to other fishers to find out where birds aren't. If you're having problems, there is probably safer fishing somewhere else.
- Ask your liaison officer. They can help troubleshoot to get you out of sticky seabird situations.

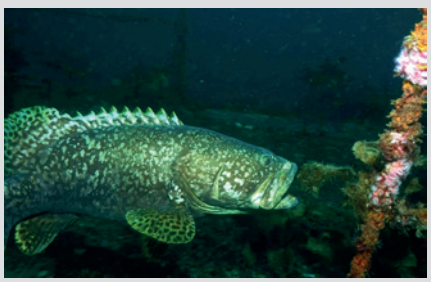
Line weights are a fisher's friend when seabird capture risks are high. *Photo: https://www.fishtekmarine.com*

WHAT THE FAQ?!

A refugee from the GC

The giant grouper is one of New Zealand's protected fish species. It is also called the Queensland grouper and occurs along Australia's Gold Coast. Last month, the Bay of Islands had a GC visitor.

- Giant groupers rarely occur in New Zealand and generally prefer warmer waters. In Australia, they are widely distributed along temperate and tropical coasts.
- All giant groupers are born female. Some will become males if there are few males around where they live.
- Juveniles become adults at around 1.3 m long. Adults may be up to 3 m in length and weigh 400 kg.
- Juvenile giant groupers are yellow and black. They become greenish grey to greyish brown with age.



The Queensland grouper, seen in the Bay of Islands in May. *Photo: Ben Brodie, Paihia Dive*

THE BIG PICTURE

Taranaki's blues

Even though it looks smooth and blue on the surface (sometimes at least!), there's a lot going on in our oceans. Marine animals like whales deal with natural and human impacts throughout their potentially long lives. Harvesting and earthquakes are just two examples for the blue and sperm whales in our waters.

Commercial whaling had severe impacts on blue whales in the past. For example, the Antarctic population of blue whales was reduced by 99%. That sort of impact is hard to bounce back from, and it is still poorly known how most populations of blue whales are doing. With so much unknown, scientists were particularly excited to discover what they thought was a blue whale feeding area off Taranaki in 2014.

Taranaki's blues are pygmy blue whales. While they may be slightly smaller than some other blue whales, they still grow to around 21–23 m in length. Following the 2014 discovery, scientists used several tools to check how many blue whales might be living around the Taranaki Bight, and in New Zealand waters.

Scientists conducted boat-based surveys and used drones, photo identification, underwater sound recordings, and tissue biopsies to help them understand the pygmy blue whale population. They also looked at all records of blue whales collected opportunistically over time, for example, by whale watch vessels and on seismic survey vessels.

After a lot of data digestion and number crunching, the population of pygmy blues in New Zealand waters is estimated at 718 animals. Scientists speculate that these whales are largely resident in New Zealand, not migrants as originally thought. Further, it turns out New Zealand is in their DNA. On a global scale, the whales are uniquely ours, but closest genetically to their Australian cousins.

A sperm whale off the Kaikoura coast with a very different view since November 2016's earthquake. *Photo: Claire Brownlow, CC BY-NC-ND 2.0*

Meanwhile, off the coast of Kaikoura ...

Kaikoura's sperm whales are world-famous. They've also been the focus of more scientific attention than usual since the tragic earthquake of November 2016. This earthquake caused submarine mudslides and sediment flows, resulting in huge changes to the whales' habitat. So how did the whales respond?

In the summer after the earthquake, many whales skipped town. Very few remained off Kaikoura. However, those that remained appeared to be around the same areas as before. They did change behaviour, however, spending 25% more time on the surface. By the winter and second summer after the earthquake, the whales were back in numbers similar to pre-earthquake times. They focused their time in different areas within their range but resumed normal surface intervals within one year.

The long-term impacts of the 2016 shake-up on Kaikoura's whales are unknown. However, so far, they seem to be okay, and the earthquake seems to be just another bump in their long and watery road.

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WORLD WATCH

Snotbots and seabird spies

Technology is a game-changer for science. This month, we look at how snotbots and seabird spies are changing what we know about protected species and fisheries.

Snotbots

In the Taranaki study of pygmy blue whales, scientists collected DNA from samples of whale tissues. This method is great when it works, but for animals that spend a long time underwater and are tricky to track when they surface, it can have a high fail rate. It is also invasive: A tiny chunk of tissue is taken from the whales – not necessarily a big deal, but still better avoided if possible.

Too many hours spent on the water missing out on tissue samples and being showered with whale blow led scientists working in the Gulf of Mexico to change their approach. With whale blow being so stinky, they thought it may contain something useful, if only they could get a sample of it. Eventually, the SnotBot was born.

Using drones like the SnotBot to grab samples saves huge amounts of money compared to conventional approaches. With samples in hand, the research team found that whale snot contained DNA, amongst other things like microbes and hormones, all of which are interesting and useful. Figuring out just how useful, and how the information gleaned from snot compares to traditional sample sources, are the next steps. If it works well, the dream team of drones and snot could make understanding whale populations so much easier.

A scientist's dream – a cloud of whale snot and the snotbot in action (inside the red circle). *Photo: Cristian Miller*

Seabird spies

French scientists have used location information collected by seabirds to identify potentially illegal fishing activity. Going one-up on the normal approach to tracking seabirds, they have developed a data logger that also records position information transmitted from fishing vessels. The locations of seabirds wearing the loggers, and fishing vessels, are both recorded.

The devices are extremely useful for figuring out how seabirds and fishing operations interact. French scientists also worked with longline vessels in their subantarctic waters to check the accuracy of the information the birds recorded. In the process, they identified signals from one anonymous fishing vessel, which may have been operating illegally. It's early days, but seabird spies may provide the next source of intelligence in the war against illegal fishing.

WANT TO KNOW MORE?

- The Big Picture: Read the full report on our pygmy blue whales. Go to: https://tinyurl.com/Taranaki-blues.

FEEDBACK

To submit feedback or questions, please email: johanna@jpec.co.nz

Banner image: © M. P. Pierre