

BYCATCH BYLINES



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HEADLINE



The weight is over: findings of the bottom longline bycatch-busters

In the March issue, we talked about government observers heading out with bottom longliners to gather information on operational measures reducing seabird bycatch risk. The project has now finished and the results are in. So what have the bottom longline bycatch-busters been up to?

There were 150 observer days allocated to collecting information from bottom longline fisheries. Observers spent time on eight vessels and collected information from more than 120 sets and hauls. This included seabird abundances, effects on bird numbers of discharging old baits, longline sink rates under different weight regimes, descriptions of tori lines in use, and fisher expertise on operational approaches to reduce bycatch risk.

The number-crunching is now complete and the good news is the findings are largely as predicted. This may seem like a let-down, but it means that reducing bycatch risk further won't necessarily require big new and expensive tools. It's more to do with making better use of the methods already available.

First, many longlines are accessible to seabirds for large distances astern vessels and for long time periods. For example, some lines took more than 6 minutes to reach depths of 20 m and were still at less than 10 m depth at distances of more than 200 m astern. Such conditions create significant opportunities for birds to attack baits.



Time-depth recorders (inside the yellow cylinder shown here) were used to measure longline sink rates during the project. Photo: DOC

Increasing longline sink rates is rule number one for reducing bycatch risk. There are lots of ways to do this. Adding more weight is one. Other options are putting weights closer together, using weights that are more even-sized, setting at slower speeds, and using denser weights (for example metal not concrete).

Using a good tori line is an inexpensive way to reduce bird access to longlines. In the current study, among vessels using tori lines, longlines were at depths of less than 5 m when the tori line ended. Longer tori lines would protect longlines better, keeping birds away until longlines have sunk to deeper depths.

As a good benchmark, sinking longlines to a depth of 10 m before birds can get to them will go a long way towards reducing bycatch. Testing longline depth is easy and cheap using what's known as a bottle test. Check the project report for more information on those. All you need is a plastic drink bottle and a bit of rope.

Finally, night-setting is an obvious solution already in use. However, birds are active before dawn, and so the lowest risk is when it is truly night—sets around 1–2 hours before nautical dawn will have fewer bird issues than sets later in the morning.

A big thank you to everyone involved in the project. The report is available online—follow the link under 'Want to know more?' on the back page.

WHAT'S UP?



Sky-high seafood

The 2013 New Zealand Seafood Industry Conference is happening at Auckland's Sky City in early October. It's an action-packed day with the theme of 'Healthy Fish, Healthy Future'. Sessions cover the value of industry's reputation, workplace development, the importance of science, and responsible seafood. In addition, speakers from other industries will pass on lessons from their own experiences. Environmental issues including protected species bycatch are sure to be discussed, both by speakers and attendees. No doubt the five-course dinner designed by seafood chef-extraordinaire Martin Bosley will fuel some meaty (or rather, fishy!) conversations late into the night.

2013 NEW ZEALAND SEAFOOD
INDUSTRY CONFERENCE
1ST OCTOBER SKYCITY CONVENTION CENTRE, AUCKLAND



HEALTHY FISH
HEALTHY FUTURE

Image: www.seafoodnewzealand.org.nz/about-us/conference/programme/

WHAT THE FAQ?!



Much ado about SLEDs

Given the recent news about sea lion captures in the southern blue whiting fishery, we take a look at SLEDs—that's Sea Lion Exclusion Devices, not what Santa's elves use in snow...

- How does a SLED work? The idea is to separate the sea lions from the fish using a grid and give sea lions an exit when they are deep in the trawl net. The spacing of the bars in the separator grid is critical.
- Why are they controversial? When SLEDs are not used, it is a lot more obvious how many sea lions are accidentally killed during fishing. However, the fate of sea lions passing through SLEDs is not known with certainty. Some people are concerned that sea lions might sustain injuries as they pass through SLEDs.
- How long have they been in use? The design and specifications of SLEDs have been refined over more than 10 years.

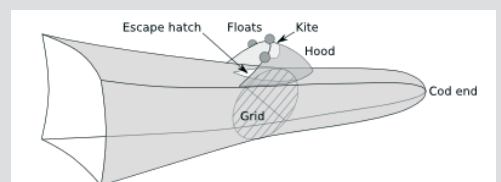


Image: www.dragonfly.co.nz/posts/2011/04/13/estimated-sea-lion-bycatch-2008-09/

Technological tales

Last issue, we talked to Pete Kibel from Fishtek about his work developing technical solutions to bycatch problems. This month, we find out how Pete and his team turn ideas into hardware for bycatch reduction.

Product development is a tough business. How do you make an idea into a reality?

We have tried farming out elements of the development work but it has never worked out. Now we do all of the development in-house. In general terms, this includes prototype tooling, electronics, pressure testing, injection moulding, and finally when the product is right, production tooling and large scale manufacture. We have state of the art development software, automatic CNC milling machines for tool making, injection moulding machines and test facilities for depth-testing to over 1500 m.

With any bycatch solution, our first step is to identify the problem—for example, seabird bycatch on surface longlines. Then, we need to really understand the details of its context. How does the fleet operate? What sort of hooks and lines are used? What about setting speeds, light sticks, and so on. Then we think ... We will then have brain storming sessions, discount lots of ideas and end up with a few worth pursuing. If we look at safe leads and hook pods, the safe leads are a relatively simple device, although it still took several prototypes to arrive at the final product. With more complex devices it can take a number of prototypes, testing and refining elements of the design before we can start thinking about scaling up to commercial tooling.

Fishtek is a company, and companies need to make money. How do you support the development you're talking about, and how long before profit might be realised?

It takes several years to develop and test a device before we have something ready to sell. This requires commitment and strategic partnerships. For example, a partnership with Birdlife International and the Royal Society for the Protection of Birds has helped with development of the safe lead and hook pod.

Funding is key. We have funded most of the development ourselves as the rest of the business is reasonably profitable; we also have an investor on board who supports some of the work. There is a trickle of grant funding that also helps. One reason that other commercial outfits are not developing mitigation products is that it is very costly and high risk. Getting it right in an extremely harsh marine environment is a tall order.

Can you tell us about any exciting new projects?

We have recently completed the design, development and production tooling of a new acoustic pinger (the Banana Pinger BP-FR) to prevent cetacean (porpoises and dolphins) bycatch in static gill nets. We also have a device for reducing shark bycatch on the drawing board and intend to produce prototypes for initial trials within the next 12 months.



The banana pinger—one of Fishtek's new products for reducing dolphin bycatch. Photo: www.fishtekmarine.com

It sounds like there is plenty going on! What keeps you coming to work, day after day?

I enjoy problem solving and working as part of a fantastic team at Fishtek. My brother Ben is the engineering brain behind the company. Ben Sullivan is a key member of the team, and we also work closely with a number of very committed conservationists. The diversity makes the work interesting and rewarding—if we can crack the problems, we might make a profit as well as contributing to marine conservation. This makes it all worthwhile.

Thanks Pete—we look forward to bearing more about Fishtek's products in future!

Seabird status slightly more secure

Everyone's heard seabirds called 'Threatened', 'Endangered', and perhaps 'Critically Endangered'. But who decides and what does this actually mean? Recent improvements in the status of two albatross species mean their future is a little more secure.

There are different ways to assess the status of seabirds. However, all use a set of detailed criteria to try to describe how the birds are doing. The best known international system is the IUCN Red List. As well as seabirds, this list also includes more than 70,000 species of the world's animals and plants. Factors that are important for determining the status of listed species include numbers of animals, how widely they range, and changes in population size. Obviously, these things can all change over time and so regular review is important.

This year, the IUCN status of three albatross species has been updated. For the grey-headed albatross, this is not good news as its status has worsened and it is now considered 'Endangered'. However, the news is good for black-footed albatross and black-browed albatross.

The black-footed albatross is a north Pacific species which used to be considered 'Vulnerable'. Now, its status has improved to 'Near threatened'. Black-browed albatross, which are found in our waters, were classified as 'Endangered'. Their status has also improved to 'Near threatened'.

The black-footed albatross has been threatened by feather hunting and habitat damage. Now, longlining is considered their most important threat. Fisheries bycatch is also the biggest threat to black-browed albatross. They range widely, and encounter longline and trawl fisheries in their travels.

Improvement in bycatch reduction measures has been important for improving the status of the black-browed albatross. This result shows the value of having good practice, every day, across fishing fleets. With everyone doing their bit here and overseas, more good news stories should emerge over time.



The future is looking brighter for the black-browed albatross (*Thalassarche melanophris*). Photo: G. Hemsworth, www.antarctica.gov.au/about-antarctica/wildlife/animals/flying-birds/albatross

WANT TO KNOW MORE?

- *Headline:* The draft report from the bottom longline observer coverage is available at: www.doc.govt.nz/reducing-seabird-bycatch
- *What's up?:* The New Zealand Seafood Industry Conference website is at: www.seafoodnewzealand.org.nz/about-us/conference
- *World watch:* To find out more about how listing decisions are made, check out: www.iucnredlist.org or www.birdlife.org/global-threatened-bird-forums/2013/09/final-decisions-for-the-2013-red-list
- *Who's who?* For more about Fishtek, see: www.fishtekmarine.com

FEEDBACK

To submit feedback or questions, please email: bycatch.bylines@yahoo.com
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