



# BYCATCH BYLINES

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## HEADLINE

### Surface liners: show your seabird smarts

**For many commercial fishers, a vessel management plan in one form or another has been part of fishing operations for years. The scope of these plans varies fishery to fishery. This season, seabirds are the focus for work developing such plans with surface longliners. So, what's the plan?**

The focus for surface longline vessels is on creating an operational plan that shows measures taken to reduce the risk of seabird captures. Plans are intended to be real – not to record some ideal that never actually happens during fishing. Also, operational plans are not compliance documents. They are voluntary.

So who's creating the plans? Seabird Liaison Officers supported by DOC and MPI will work with fishers to get plans underway. Liaison Officers have worked with bottom and surface longliners in FMA1 to date. So far, they have developed Seabird Management Plans with almost all bottom longline vessel operators. This year, their efforts will include developing seabird-focused operational plans with surface liners in FMA1, as well as vessels operating out of Napier and Gisborne, and those fishing on the West Coast of the South Island. Government fisheries observers deployed on surface longline vessels will also be collecting information that can be included in plans.

So what's the point? The purpose of operational plans is to show the proactive measures taken at sea to reduce seabird bycatch on surface liners. That is, plans are a chance for surface longline fishers to show their seabird smarts. A second purpose is to provide a better understanding of what's happening at sea across the fleet, including for fishery managers and industry groups.

Everyone's aware of the regulated measures for seabird bycatch reduction. Those are not the focus of operational plans. Rather, where fishers are taking other steps voluntarily to reduce seabird captures, these are of interest. Over time, knowledge sharing on effective voluntary measures across the fleet may help reduce seabird captures.

Fishing approaches change over time. To recognise that, the intent is for operational plans to be reviewed and updated as needed. Again, the focus is on recording what's really happening on an everyday basis on the water.

So, if you're surface longline fishing, it's a good time to start thinking about what happens on your vessel, every trip, to reduce seabird captures. Do you hold any offal, old baits and dead discards during the haul? Do you change bait types if you're fishing in birdy areas? What happens if you suddenly hear lots of birds around the boat when you're setting? In short, how is your operation seabird-smart?



Gibson's albatross, one of the seabirds that can be caught in surface longline fisheries. Photo: J. P. Pierre

## WHAT'S UP?

### Better news for sea lions

Sea lions on the Auckland Islands are often in the spotlight and not for the best reasons. Preliminary reports from this summer's breeding season are better than last.

- The New Zealand sea lion is classified as Nationally Critical largely due to declining pup numbers over time.
- Preliminary reports for the 2015/16 summer breeding season estimate a 10% increase in pup production compared to last summer.
- Pup mortality is estimated at 8% for the period when pup production was assessed.
- While some pup deaths were considered likely to result from bacterial infection, this was not at epidemic levels like in some previous years.
- A full report will follow when field work is completed.



A sea lion pup pile-up on the Auckland Islands. Photo: L. Boren, DOC

## WHAT THE FAQ?!

### The royals, streaming live

It's the 'Big Brother' of the bird world ... and a rare opportunity to see a royal family live. The albatross web cam located at Taiaroa Head near Dunedin shows what these royals are up to throughout the daylight hours.

- Northern royal albatross have been nesting on Taiaroa Head since 1920. This colony now has around 30 pairs nesting each year.
- When they're not nesting, northern royals travel around the world – literally – circumnavigating the southern hemisphere.
- They bring their chicks food from closer to home, including fish, squid and crustaceans.
- Check in with the royal cam on 'chick Tuesdays' at 2 pm, to see the Taiaroa Head ranger weigh the albatross chick.
- For the royal cam link, see *Want to know more?*



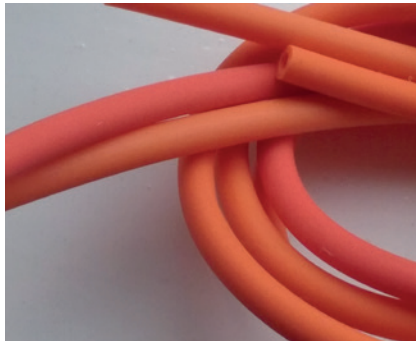
A young male northern royal albatross with its father at their Taiaroa Head nest. Photo: <http://blog.doc.govt.nz/?s=taiaroa+500>

## Testing, testing ...

The tori line is a proven, well-tested and effective measure for reducing seabird captures. Initially designed for large vessels, tori line challenges on small vessels can include getting these lines sufficiently light, and with just the right drag, to effectively protect fishing gear from hungry seabirds. Work exploring new materials to address these issues is underway.

Most bycatch reduction measures require testing and refinement to make them work best. Tori lines – a tried and true mitigation measure first used decades ago – are no exception. A good tori line is created through an effective balance of deployment height, backbone and streamer length and weight, and drag. Wind can be one of the tori line's worst enemies, blowing lines off course and tangling them with gear. Obviously this is problematic and makes tori lines less effective (not to mention the whole lot being a hassle to sort out afterwards!)

Current work underway on tori lines is investigating different materials to make lighter tori lines that still pack a punch in terms of deterring seabirds. The project, supported by DOC, is focused on building effective tori lines for smaller longline vessels. That often means more limited options for attaching toris, and the need for enough drag to maintain the aerial extent of the tori line, but not so much that it's hard to pull in once setting's completed.



Warwick (top) with the product of his work on another kind of line. The new thinner streamer materials produced with smaller vessel tori lines in mind are shown on the right. Photos: (top) courtesy W. Beauchamp; (bottom) J. P. Pierre

For larger vessel operators, Kraton® and PVC tubing have been the 'go-to' streamer materials for tori lines in recent years. For smaller longline vessels, the project team is investigating new Kraton®-like materials that are still brightly coloured as well as light and slightly stiffened. The lightweight product is expected to reduce the amount of drag needed on tori lines. The extra stiffness should reduce streamer tangling with fishing gear, as well as with other streamers. However, the material is not so stiff that it can't be wound in for storage in a drum or on a reel between sets. The new material at 6 mm diameter should also reduce windage of tori lines, compared to larger diameter materials, to help keep toris on track.

Creating new materials is seldom cheap, and the project team appreciates the support of Warwick Beauchamp and Beauline International in subsidising production costs.

All going well, the result of this work will be a win for all – a tori line that deters birds, is light and easy to handle, robust, cost-effective, and that makes crews' lives easier.

## The low-down on lasers

There's been a lot of talk over the years about using lasers as a seabird deterrent to reduce bycatch. Preliminary testing has been reported from Icelandic longline and north Pacific trawl fisheries. Could a green light be the silver bullet for saving seabirds?

Results of testing the prototype 'SeaBird Saver' in an Icelandic autoline fishery were reported in 2014. The SeaBird Saver uses laser light, with or without sound, to deter seabirds from attending fishing vessels. This device was created by Mustad Autoline with Dutch enterprise SaveWave. The laser used is green, and emerges as a beam terminating in a dot on the water. Data from Iceland gathered during three sets of 40,000 hooks found that the laser increased the distance at which seabirds followed the fishing vessel. The laser was considered most effective at dawn and dusk, and in cloudy, rainy and foggy conditions. When the laser was turned off in such conditions, birds quickly returned to the area astern the vessel.

Since then, more testing of lasers as seabird deterrents has been undertaken, including on a trawler in the north Pacific. Again, green laser light was used as the seabird deterrent. During daylight hours, seabirds showed little response to the laser beam. However, at night, one species of seabird – the northern fulmar – was affected by the laser when it was close to them and vessel speeds were slower (3.5 knots). Fulmars showed a detectable but short-term response to the laser, moving away from it. During the north Pacific trials however, the most notable response was from gulls, who showed a strong aversion to the laser when the vessel travelled at high vessel speeds (11 knots) at night. These results from the north Pacific appear to confirm the Icelandic findings – that laser deterrents tested to date work best at night or in low light conditions. Further, the deterrent effects of lasers seem to vary between seabird species. The influence of vessel speed on the deterrent effect of the laser is an issue for further exploration.

On land, lasers are also being explored to save seabirds. On the island of Kauai, Hawaii, petrels and shearwaters returning to their nesting burrows at night can collide with power lines and transmission poles. The use of lasers to create 'fences' of light may help these flying seabirds avoid obstacles in their path, and is being explored. The results of that work are still to come.

It seems that at sea, the green-light lasers are unlikely to be the silver bullet for reducing bycatch of all seabird species. However, in low light conditions and for some seabird species, there is increasing evidence that they are effective, at least in the short term. One SeaBird Saver is currently in use on a New Zealand bottom longline vessel. The results of that deployment will be vital for confirming seabird species that lasers do deter from attending vessels over time, and so how this high-tech tool can add to the mitigation tool box.



The northern fulmar – one of the species that avoided laser light in the north Pacific. Photo: Andreas Trepte, CC-SA 2.5 Generic

## FEEDBACK

To submit feedback or questions, please email: [jpecnz@gmail.com](mailto:jpecnz@gmail.com)

Banner image: © M. P. Pierre

## WANT TO KNOW MORE?

- *What's up?:* Find the preliminary report on this year's sea lion pup production at: <http://tinyurl.com/zpymo57>.
- *What the FAQ?:* The northern royal albatross royal cam is at: <http://tinyurl.com/hg3atwb>.

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