



# Initial Position Paper

## Seabird mitigation measures for surface longline fisheries

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Prepared for public consultation  
by the Highly Migratory Species team, MPI

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## Disclaimer

This document is produced for the purpose of consulting with stakeholders on the seabird mitigation measures that surface longline fishing vessels in New Zealand should apply to ensure consistency with New Zealand's international obligations under relevant Regional Fisheries Management Organisations.

For current requirements, interested parties should consult the Fisheries (Seabird Sustainability Measures—Surface Longlines) Circular 2011 (No. F629), issued in the *New Zealand Gazette*, 10/11/2011, No. 173.

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# 1 Introduction

The incidental mortality of seabirds, mostly albatrosses and petrels, in longline fisheries continues to be a serious global concern. Seabirds can become hooked on longline hooks as the gear is deployed. They also can become hooked as the gear is hauled; however with careful handling, many of these seabirds can be released alive.

A recent risk assessment has identified New Zealand seabird species for which there is a high or very high risk that captures in New Zealand commercial fisheries are contributing to population-level impacts. These species include several caught in surface longline fisheries, indicating a need for review of existing mitigation requirements and practices. Review is also required to bring specifications in line with revised international requirements.

Current seabird mitigation rules for surface longline fishing in New Zealand fisheries waters are specified in the Fisheries (Seabird Sustainability Measures-Surface Longline) Circular 2011. These measures were consistent with the conservation and management measure to mitigate the impact of fishing for highly migratory fish stocks on seabirds adopted by the Western and Central Pacific Fisheries Commission (WCPFC) in 2006 (CMM 2006-02) and amended in 2007 (CMM 2007-04). In December 2012, the WCPFC again amended its conservation and management measure (CMM 2012-07) based on advice received from its scientific committee. The implementation date for this amended measure in areas south of 30 degrees South (including New Zealand fisheries waters) is no later than 1 July 2014.

Implementation of CMM 2012-07 will require a change to the specifications of line weighting and streamer lines (otherwise known as tori lines), two prescribed mitigation options for the New Zealand fishery. While New Zealand has an obligation to implement the changes by 1 July 2014, earlier implementation is proposed to facilitate the use of the revised line weighting specifications. Commercial products that meet the new specifications are currently being trialled in the New Zealand fishery.

The proposed *Gazette Notice* with the updated specifications for seabird mitigation is provided in Appendix One.

## 2 Proposals for revised specifications

### 2.1 LINE WEIGHTING

Surface longline fishers must deploy a streamer line at all times when setting their fishing gear. As a second mitigation measure they have the option of either setting the longlines at night or adopting a specified line weighting regime. The current line weighting for the New Zealand fishery is that prescribed by the WCPFC in 2007 as a minimum of 45g per hook with options for positioning the weight in relation to the hook as follows:

- a. Weights less than 60 g must be within 1 m of the hook; or
- b. Weights of 60 g – 98 g must be within 3.5 m of the hook; or
- c. Weights greater than 98 g must be within 4 m of the hook.

The 2012 revision to the line weighting regime (CMM2012-07) adds the option of a 40 g weight at or within 50 cm of the hook, as follows:

- a. One weight greater than or equal to 40 g within 50 cm of the hook; or
- b. Greater than or equal to a total of 45g attached to within 1 m of the hook; or
- c. Greater than or equal to a total of 60 g attached to within 3.5 m of the hook; or
- d. Greater than or equal to a total of 98 g weight attached to within 4 m of the hook

Trials conducted in Australia have indicated that 40 g weights close to the hook are successful in quickly sinking hooks out of the reach of seabirds. Commercial products are available in this weight range and the change proposed will facilitate their use. One recent Australian study considers use of a 40 g weight close to the hook to have most potential for adoption in fisheries due to: (i) improved crew safety; (ii) ease of port-based inspection for compliance purposes; (iii) reduced construction costs; (iv) reduced bin tangles; and (v) ease of deployment.<sup>1</sup> The study noted lead loss from shark bite-offs can be minimised by placing leads on short ( $\leq 0.5$  m) leaders.

Internationally, seabird experts including the Agreement on the Conservation of Albatrosses and Petrels (ACAP) increasingly view the use of *three* mitigation methods – streamer lines, line weighting, and night setting – as best practice, particularly in areas of high risk including New Zealand. In New Zealand, fishers’ concerns about the safety of line weighting have limited the uptake of this mitigation option to date. Trials are currently underway to investigate the effectiveness and safety of different types of line weighting, and it is anticipated that line weighting could become a required mitigation measure in high risk areas over time.

## 2.2 STREAMER LINES

In the revised WCPFC conservation and management measure, streamer line specifications now apply differentially on the basis of vessel size. This will necessitate changes to the current specifications for both vessels less and greater than 35m in overall length, as outlined in table 1 below.

**Table 1: Comparison of existing seabird specification and revised WCPFC specifications**

Specification	New Zealand (circular F629)	WCPFC CMM 2012-07	WCPFC CMM 2012-07
		Vessels < 35m	Vessels $\geq 35$ m
Length of streamer line	100m; Must have towed object if <150m	100m; Must have towed object if <150m	200m
Aerial extent of streamer line	50m (minimum)	75m	100m
Height of attachment for streamer pole	5m	6m	7m
Streamer length	Must reach sea surface in absence of swell	<b>Long:</b> must reach sea surface in absence of swell <b>Short:</b> >1 m	<b>Long:</b> must reach sea surface in absence of swell <b>Short:</b> >1 m
Streamer characteristics	Guidance provided that streamers should be brightly coloured and visible to birds; use swivels to avoid tangles	Shall be brightly coloured, with either a mix of long and short streamers, or just short streamers; swivels must be used for long streamers	Shall be brightly coloured, with a mix of long and short streamers; swivels must be used for long streamers
Streamer placement	Max. spacing of 5m; must extend along aerial extent of line	<b>Long</b> streamers: max. spacing of 5m, for first 55m of line <b>Short:</b> max spacing of 1 m	<b>Long</b> streamers: max. spacing of 5m <b>Short:</b> max spacing of 1 m

<sup>1</sup> Robertson, G. Candy, S. and Hall, S. (2013) New branch line weighting regimes to reduce the risk of seabird mortality in pelagic longline fisheries without affecting fish catch. *Aquatic Conservation: Marine and Freshwater Ecosystems*.

### 2.2.1 Vessels less than 35m

The revised WCPFC specifications use a mixture of short and long streamers (or just short streamers). The existing New Zealand specifications are that streamers should reach the surface of the sea in the absence of swell (i.e. only long streamers are currently envisaged in the specifications). Elsewhere, fishers have experimented with the addition of short streamers (either in conjunction with longer streamers, or on their own). Shorter streamers are considered to have a more erratic movement pattern, which may deter seabirds, and to be less prone to entanglement. The risk of entanglement is a key operational factor for fishers. Short streamers along the portion of the streamer line that is normally under water can also create drag, which can help maximise aerial extent of the line.

ACAP's most recent summary of advice for reducing the impact of pelagic longlines on seabirds<sup>2</sup> notes that two designs have been shown to be effective for smaller vessels (<35 m): a mixed design that includes short streamers (minimum 1 m in length) and long streamers placed at 5 m intervals over the first 55 m of the bird scaring line; and a design that does not include long streamers. The addition of short streamers may increase the effectiveness of the streamer line, by adding an additional deterrent and reducing the likelihood of entanglement. The Ministry considers tori lines with long (or long and short) streamer lines to be best practice.

The WCPFC specifications also include a height of attachment of 6 m, rather than the current 5 m. The height of attachment is an important factor to help achieve the required aerial extent. Vessels that consider they will have operational difficulties in achieving this specification are invited to discuss their concerns with the Ministry. ACAP recommends a height of attachment of 7 m for smaller vessels, and a minimum aerial extent of 75 m.

### 2.2.2 Vessels greater than or equal to 35m

The specifications for larger and smaller vessels are the same with regard to the characteristics of the streamer lines to be used, including specification of a mix of long and short streamers, brightly coloured and, in the case of long streamers, attached to the line with swivels to reduce tangles.

Vessels greater than or equal to 35 m will be required to use a streamer line with a minimum length of 200 m (currently 100 m) and to attach the line 7 m above the waterline (currently 5 m). This change reflects the fact that longlines on larger vessels take longer to set, so a greater degree of aerial cover is required to shield baits entering water from seabirds. ACAP recommends a height of attachment of 8 m for larger vessels, and an aerial extent of 100 m.

ACAP advice is that simultaneous use of two bird scaring lines, one on each side of the sinking longline, provide maximum protection from bird attacks under a variety of wind conditions and are recommended as best practice for larger vessels. While it is not proposed to make the use of two lines a requirement at present, the WCPFC measure does encourage the use of a second line at times of high bird abundance or activity where practical. If two streamer lines are to be used they should be deployed simultaneously, one each side of the line being set; baited hooks shall be deployed within the area bounded by the two streamer lines. If vessels use only one streamer line, the streamer line shall be deployed windward of the sinking baits.

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<sup>2</sup> ACAP (2013). Summary advice for reducing impact of pelagic longlines on seabirds. Reviewed at the Seventh Meeting of the Advisory Committee La Rochelle, France, 6 – 10 May 2013; Version: 29 August 2013.



# Appendix 1: Draft Seabird Mitigation Circular

## Draft Fisheries (Seabird Mitigation Measures-Surface Longlines) Circular 2014

Pursuant to Regulation 58 and 58A of the Fisheries (Commercial Fishing) Regulations 2001, the Deputy Director General, Resource Management and Programmes/Standards, Ministry for Primary Industries (acting pursuant to a delegated authority in accordance with section 41 of the State Sector Act 1988) gives the following notice.

### Circular

#### 1. Title

This circular is the Fisheries (Seabird Mitigation Measures-Surface Longlines) Circular 2014.

#### 2. Commencement

This circular comes into force the day after its notification in the *New Zealand Gazette*.

#### 3. Interpretation

In this circular:

"Act" means the Fisheries Act 1996;

"aerial extent" means the distance from the back of the vessel to the place where the streamer line backbone enters the water, under normal setting speed in calm sea.

"nautical dawn" means the time at sunrise when the centre of the sun is at a depression angle of 12 degrees below the ideal horizon for the place;

"nautical dusk" means the time at sunset when the centre of the sun is at a depression angle of 12 degrees below the ideal horizon for the place;

"set", in relation to a surface longline, means releasing the surface longline into the water;

"surface longline" means a line to which a hook or hooks (whether baited or not) are attached, and that is:

- (a) suspended by floats; and
- (b) not attached to the sea floor;

"streamer line" means the type of bird scaring device, also known as a tori line, as described in clause 6 of this circular.

#### 4. Restrictions on use of surface longlines

No commercial fisher may set surface longlines to take fish, aquatic life or seaweed within New Zealand fisheries waters between the hours of 0.5 hours before nautical dawn and 0.5 hours after nautical dusk, unless line weighting is employed in accordance with clause 5 of this circular.

#### 5. Branchline weighting

For the purposes of clause 4, weight/s must be attached for every hook deployed as follows:

- (a) One weight greater than or equal to 40 g within 50 cm of the hook; or
- (b) Weight/s greater than or equal to a total of 45g attached to within 1 m of the hook; or
- (c) Weight/s greater than or equal to a total of 60 g attached to within 3.5 m of the hook; or
- (d) Weight/s greater than or equal to a total of 98 g weight attached to within 4 m of the hook.

#### 6. Streamer line required if surface longlines used

No commercial fisher may use a surface longline to take fish, aquatic life or seaweed from a vessel within New Zealand fisheries waters unless:

- (a) the vessel carries a streamer line; and
- (b) the streamer line is used at all times when setting a surface longline, in accordance with clause 7 of this circular.

## **7. Streamer line specifications**

- (1) The streamer line must be attached to the vessel so that when deployed the baits are protected by the streamer line, even in cross winds.
- (2) A streamer line must use brightly-coloured, UV-resistant streamers and must be configured as follows:
  - (a) Streamers long enough to reach the sea-surface in calm conditions must be placed at intervals of no more than 5 m for at least the first 55 m of streamer line and these streamers must be attached to the line with swivels that prevent streamers from wrapping around the line; and
  - (b) Streamers with a minimum length of 1 m must be placed at intervals of no more than 1 m.
- (3) If the streamer line that is in use breaks or is damaged, it must be repaired or replaced so that the vessel meets these specifications before any further hooks enter the water.
- (4) This circular does not apply to additional or secondary seabird scaring devices fishers may choose to use (such as a second streamer or tori line).
- (5) Vessels that are less than 35m in overall length must:
  - (a) Deploy the streamer line to achieve a minimum aerial extent of 50m, and a desired aerial extent of 75m; and
  - (b) The streamer line must have a minimum length of 100m and if it is less than 150m in length, it must have a towed object attached to the end so that the aerial extent of the line is maintained over the sinking baited hooks; and
  - (c) The streamer line must be suspended from a point on the vessel at least 6 m above the water in the absence of swell.
- (6) Vessels that are equal to or greater than 35m in overall length must:
  - (a) Deploy the streamer line to achieve a minimum aerial extent of 100 m; and
  - (b) The streamer line must have a minimum length of 200 m; and
  - (c) The streamer line must be suspended from a point on the vessel at least 7 m above the water in the absence of swell.

## **8 The Schedule**

- (1) The Schedule provides further guidelines on the design and deployment of streamer lines as seabird scaring devices.
- (2) The Schedule is not part of the specifications.
- (3) If there is any inconsistency between the Schedule and the specifications in this circular, the specifications prevail.

## **9. Revocation**—The following notice is revoked:

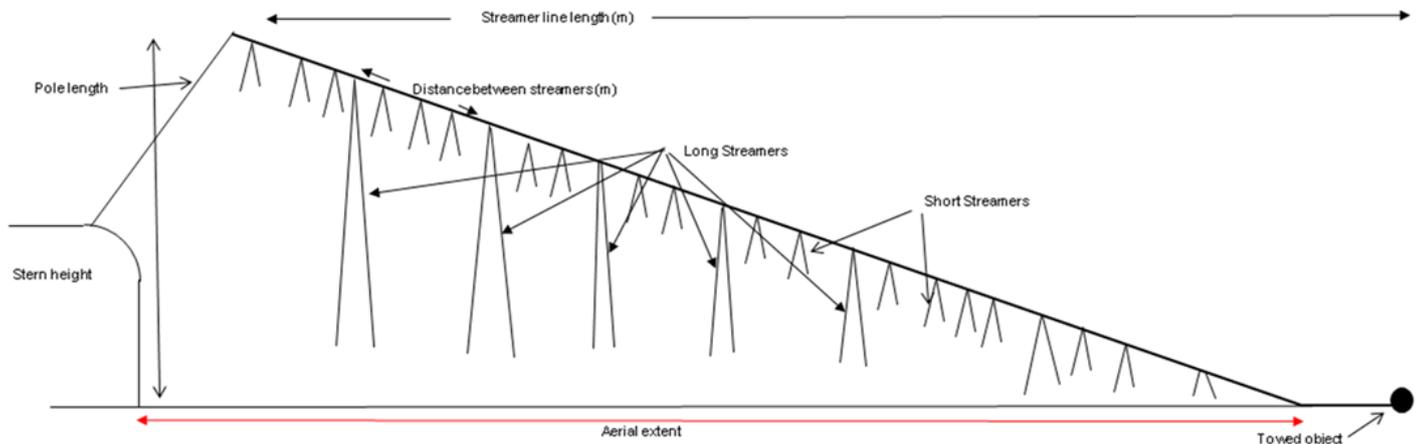
Fisheries (Seabird Scaring Devices Minimum Standard and Procedures) Circular 2011 (No. F629)

## Schedule

### Seabird Scaring Device (streamer line)

Diagram not to scale

Not all specifications illustrated



(1) The streamer line needs to protect baited hooks from seabirds. This means that the streamer line should be positioned in such a way that streamers are flapping in an unpredictable fashion, above the area in which the baited hooks enter the sea, so that seabirds are deterred from attempting to take bait from the hooks. In order to achieve this even during cross-winds, it is expected fishers will have to make adjustments to the configuration of the streamer line depending on the conditions.

(2) Streamer lines should be made of the lightest practical, strong line.

(3) It is generally recognised as best practice to maximise the aerial extent of the streamer line, because this maximises the area in which the baited hooks are protected from seabirds. Best practice would be to achieve an aerial extent of 100 m, particularly on larger vessels. In order to maximise aerial extent, it is necessary to create tension in the streamer line. Towing an object on the terminal end of the streamer line is viewed as a preferred option for creating tension. This can also be achieved by:

- (a) towing extra length of streamer line; and/or
- (b) having short streamers along the in-water section of the streamer line; and/or
- (c) increasing the diameter of the in-water section of the streamer line.

(4) The towed object could be a cone or buoy, a section of heavy rope, or any other object that creates sufficient drag to maintain the streamer line's aerial extent.

(5) In order to be effective at scaring seabirds away from the line of baited hooks, the streamer lines should not become tangled, either with each other or with the branch-line. Each long streamer should be attached to the streamer line in a manner to prevent fouling of individual streamers with the streamer line, and to ensure individual streamers reach the waterline in the absence of wind or swell. Swivels or a similar device can be placed in the streamer line in such a way as to prevent streamers being twisted around the streamer line. Each streamer may also have a swivel or other device at its attachment point to the streamer line to prevent fouling of individual streamers.

(6) To ensure streamers are visible to birds, they should stand out against the surroundings. Streamers should be made of brightly coloured fluorescent rubber or plastic tubing or other material that is UV-resistant. Bright colours such as red, yellow, orange or pink are most effective during day setting. For night setting, the streamers should be of a colour that contrasts with the surroundings.

Colours such as blue and green are less likely to be effective, because they are less likely to be highly visible to birds.

(7) A mixture of long and short streamers should be used. “Long streamers” (long enough to reach the surface of the sea) are to be spaced at 5 m intervals along the aerial extent of the line. The total number of streamers in use will vary depending on how the line is configured, but should cover the first 55 m of the streamer line. Long streamers that are hanging in the water can be prone to tangling. Although it is important that streamers are present to deter birds from taking baited hooks all along the part of the line that remains above water, fishers may not wish to have long streamers the whole way down the line, because the far end of the streamer line will frequently be in the water. Short streamers can be used on the in-water portion of the line to increase drag.

(8) “Short streamers” (of at least 1 m in length) are to be spaced at 1 m intervals and can extend either along the entire streamer line, or just on the in-water section. Short streamers should be made of a material that creates an erratic flapping movement. Weak links (breakaways) should be incorporated into the in-water portion of the line to limit safety and operational problems should lines become tangled.

(9) In order to comply with the regulations, a streamer line must be used when setting surface longlines. If the streamer line that is in use breaks or is damaged, it must be repaired or replaced so that it meets these specifications before any further hooks enter the water. For this reason, a complete additional streamer line should be carried as a spare.

(10) Vessels are encouraged to use a second streamer line at times of high seabird abundance or activity. If two streamer lines are used baited hooks should be deployed within the area bounded by the two streamer lines (i.e. the two lines should be deployed on opposing sides of the main line).

### **Branch line weighting**

(11) Branch lines should be weighted to sink the baited hooks rapidly out of the diving range of feeding seabirds. Weights will shorten but not eliminate the zone behind the vessel in which birds can be caught.

(12) Lead weights (such as ‘safety’ or ‘lumo’ leads) are recommended for branch line weighting.

(13) Scientific studies have demonstrated that a branch line weighting configuration with more mass close to the hook sinks the hooks most rapidly, reduces seabird attacks on baits and consequently is most likely to reduce seabird mortalities.

(14) Both initial and final sink rates are important for reducing seabird catches; fast initial rates reduce bait visibility near the surface and fast final rates reduce accessibility at deeper depths. Best practice line weighting must therefore maximise the initial and final sink rates while also being practical for operators to fish with. To satisfy this standard, lead sinkers should be placed at the hook (i.e., no leader) or, in fisheries where shark bite offs are considered excessive, on very short ( $\leq 0.5$  m) leaders. Long leaders (e.g. 2-4 m), even with very heavy weights, have initial sink rates that are very slow due to the lag created by the long leader.

(15) The mass of the sinker depends on fishery risk to seabirds. Recent advice to ACAP suggests  $\geq 60$  g lead sinkers at the hook (or on  $\leq 0.5$  m leaders) in areas of medium to high risk to seabirds, or where risks are unknown.

(16) Positioning weight farther than 4 m from the hook is not recommended.

(17) Branch line weights can fly back when the line is under tension at hauling. Operational factors to increase the safety of branch line weighting include use of lumo or safety leads instead of conventional leads. Both lumo and safety leads are designed to slide down the line instead of recoiling. The risk of injury can also be reduced through coordination between the skipper and those unclipping branchlines from the mainline, allowing crew time to act when a shark is on the line (e.g. by clipping the branchline to a low point on the vessel to reduce the chance of it hitting someone). Helmets are used in some fisheries e.g. in Australia, although there may be practical limitations to the uptake of this option.