

# Mitigation Standards to Reduce the Incidental Captures of Seabirds in New Zealand Commercial Fisheries

## Bottom longline (hand baiting)

### 1. Introduction

To effectively reduce the risk of seabird captures, bottom longline vessels need to use a combination of mitigation practices that best address the risks of their individual operations. As the bottom longline fleet is highly diverse with respect to vessel size, gear set-up and on board equipment, the particulars of the mitigation practices employed may differ between vessels.

To ensure consistency in the mitigation practices employed by the bottom longline fleet, these mitigation standards document what is expected of effective mitigation practices. Mitigation standards are grouped by what the mitigation practices aim to achieve (desired outcomes).

This document also details how the mitigation standards will be implemented and how adherence to the mitigation standards will be monitored and reported.

### 2. Scope

These mitigation standards are applicable to all bottom longline vessels which bait hooks by hand (manual baiting vessels). See Appendix 1 for a characterisation of the hand baiting bottom longline fleet.

### 3. Desired outcomes

1. The discharge of fish waste<sup>1</sup> from the vessel is managed so as not to attract seabirds to risk areas.
2. Seabirds are not able to access baited hooks during setting.
3. Seabird access to hooks during hauling is minimised.
4. The risk of deck landings or impacts against the vessel is minimised.<sup>2</sup>

---

<sup>1</sup> Fish waste is defined as all processing offal and all dead or damaged fish that are returned to the sea (or parts thereof).

<sup>2</sup> A deck landing (also known as a deck strike) is a situation when a seabird lands on a vessel and is assisted from the vessel by the crew or an observer. An impact with a vessel is a situation when a seabird collides with the superstructure of the vessel.

## 4. Mandatory measures

Fisheries (Seabird Mitigation Measures—Bottom Longlines) Circular 2018<sup>3</sup> is the legislative instrument used to mitigate against seabird captures on bottom longline vessels. In summary, the Circular requires all fishers using the method of bottom longlining to;

- Deploy a tori (streamer) line for the duration of all setting events. The tori line must be configured in accordance with the specifications prescribed in the Circular;<sup>4</sup>
- Either set lines at night, or weight lines in accordance with the specifications prescribed in the Circular;
- Restrict the discharge of fish waste during setting; and
- Only discharge fish waste during hauling from the opposite side on the vessel to the side on which the hauling station is located.

## 5. Mitigation standards

This section details the mitigation standards necessary to achieve each desired outcome and the equipment and/or operational practices currently needed to meet each mitigation standard.

Each mitigation standard will be updated as alternate technologies or operational practices are demonstrated to be effective in achieving the desired outcomes.

*These mitigation standards do not replace or override any fisheries regulations, or legislation on workplace health and safety, maritime safety or other relevant subject.*

**Desired outcome 1: The discharge of fish waste from the vessel is managed so as not to attract seabirds to risk areas**

Mitigation standards 1.1 and 1.2 are necessary to achieve desired outcome 1.

---

Mitigation standard 1.1: Fish waste is not discharged from the vessel immediately before or during setting.<sup>5</sup>

Mitigation standard 1.2: Fish waste is held on board for the duration of hauling<sup>6</sup> (when possible) with any discharge occurring in a way which minimises the risk to seabirds.

---

To meet mitigation standards 1.1 and 1.2, vessel operators should:

- Develop and document a fish waste management system that describes how mandatory requirements and mitigation standards 1.1 and 1.2 will be met. A copy of this document

---

<sup>3</sup> New Zealand Ministry for Primary Industries. (2018). Fisheries (Seabird Mitigation Measures—Bottom Longlines) Circular 2018. Retrieved from <http://www.legislation.govt.nz/regulation/public/2018/0116/latest/whole.html#whole>

<sup>4</sup> Only applicable to vessels greater than seven metres in overall length.

<sup>5</sup> 'Setting' is defined as the act of releasing the bottom longline into the water.

<sup>6</sup> 'Hauling' is defined as the period from when line retrieval commences to when all of the hooks are on board.

must be carried on board the vessel at all times and be accessible to, and fully understood by, all crew members.

- Ensure their vessels are suitably equipped and configured (i.e. the strategic location of fish bins or discharge chutes) to allow the management of fish waste in accordance with mandatory requirements and mitigation standards 1.1 and 1.2.
- Retain all fish waste on board during setting.
- Retain all used bait on board until hauling has finished.
- Retain any processing offal and dead or damaged fish on board for as long as practicable during hauling. Any discharge that does occur must be done at intervals of no less than 30 minutes and meet mandatory requirements.
- Return live fish to the sea as soon as practicable after they were taken.
- Maintain a secondary system that prevents fish waste lost to the deck or factory floor from being lost overboard. Examples of such secondary systems include equipment to minimise the volume of fish waste lost to the deck and the use of gratings or trap systems to reduce the volume of fish waste discharged through scuppers (whilst still allowing the free movement and egress of water).

#### Desired outcome 2: Seabirds are not able to access baited hooks during setting

Mitigation standards 2.1, 2.2, 2.3 and 2.4 are necessary to achieve desired outcome 2.

---

Mitigation standard 2.1:	A tori line effective at deterring birds from accessing baited hooks is deployed throughout setting.
Mitigation standard 2.2:	Hooks set during high-risk periods <sup>7</sup> are protected by the aerial extent of the tori line until the hooks have reached a depth of 10 metres.
Mitigation standard 2.3:	Hooks set outside of high-risk periods are protected by the aerial extent of the tori line until the hooks have reached a depth of 5 metres.
Mitigation standard 2.4:	Bait state (such as whether it is frozen) does not reduce the sink rate.

---

To meet mitigation standards 2.1 vessel operators should:

- Deploy a tori line throughout setting. The specifications of the tori line must meet mandatory requirements. The tori line should be fixed to the vessel at the highest practicable point and have streamers<sup>8</sup> spaced along the entire aerial extent of the line.

---

<sup>7</sup> High-risk periods are defined as during daylight hours (i.e. between nautical dawn and nautical dusk) and during nights three days either side of a full moon (except when there is full cloud cover). High-risk periods are defined as such because seabirds (especially albatross) are generally less active at night. Additional information regarding night setting is available in BirdLife International. (2014, September). *Bycatch mitigation fact-sheet 5: practical information on seabird bycatch mitigation measures*. Retrieved from <https://acap.aq/en/resources/bycatch-mitigation/mitigation-fact-sheets/1824-fs-05-demersal-pelagic-longline-night-setting/file>

<sup>8</sup> Streamers should be brightly coloured and long enough to deter seabirds.

The tori line must be well maintained with sufficient materials carried on board to effect repairs when necessary.

- Carry a second tori line on board and use it immediately following the loss of the primary tori line. The specifications of the second tori line must meet mandatory requirements.
- Ensure the tori line can be adjusted or repositioned so that the streamers can be positioned over the hook bearing line to suit varying conditions.

To meet mitigation standard 2.2 vessel operators should:

- Externally weight lines so that the slowest sinking hook<sup>9</sup> can be demonstrably shown to reach a depth of 10 metres within the aerial extent of the tori line (refer to Section 8: Sink rates); or
- Conduct setting outside of high-risk periods if mitigation standard 2.2 cannot be met.

To meet mitigation standard 2.3 vessel operators should:

- Externally weight lines so that the slowest sinking hook can be demonstrably shown to reach a depth of 5 metres within the aerial extent of the tori line (refer to Section 8: Sink rates).

To meet mitigation standard 2.4 vessel operators should:

- Use bait that is sufficiently thawed (i.e. not fully frozen)

**Desired outcome 3: Seabirds access to hooks during hauling is minimised.**

Mitigation standards 3.1, 3.2 and 3.3 are necessary to achieve desired outcome 3.

---

Mitigation standard 3.1	Hooks stay at, or near, the sea surface for the least time possible.
Mitigation standard 3.2	Seabirds are actively deterred from approaching hooks during hauling.
Mitigation standard 3.3	Any seabirds caught and released alive are handled in ways that maximise their chance of survival (whilst managing the risk to the crew)

---

To meet mitigation standards 3.1, 3.2 and 3.3, vessel operators should:

- Haul as quickly as practicable. If breaks are taken during hauling, all hooks must remain below 10 metres.
- Utilise measures appropriate to both the vessel and the situation to actively deter seabirds from approaching hauled hooks. Depending on the vessel and the situation,

---

<sup>9</sup> The location of the slowest sinking hook will vary depending on how gear is configured, but typically the hook closest to a float or furthest from a weight will be the slowest to sink.

suitable measures include using low pressure water sprayers,<sup>10</sup> sound (such as banging a gaff against the superstructure), hauling mitigation devices and/or vessel manoeuvres.

- Instruct the deck crew in safe seabird-handling procedures and protocols and ensure these procedures and protocols are adhered to.

Desired Outcome 4: The risk of deck landings or impacts against the vessel is minimised

Mitigation standards 4.1, 4.2 and 4.3 are necessary to achieve desired outcome 4.

---

Mitigation standard 4.1	Deck lighting does not unnecessarily attract or disorientate seabirds.
Mitigation standard 4.2	Seabirds are not induced to land on the deck due to the presence of fish waste.
Mitigation standard 4.3	Any seabirds that land on deck or impact with the vessel and are released alive, are handled in ways that maximise their chance of survival (whilst managing the risk to the crew).

---

To meet mitigation standards 4.1, 4.2 and 4.3, vessel operators should:

- Minimise all deck lighting (including outward facing lights) that is not necessary for ship or crew safety, especially when the vessel is sheltering or anchored near seabird breeding colonies.
- Clean the deck and fish waste-handling equipment (such as fish bins) regularly, so that excess fish waste is removed.
- Instruct the deck crew in safe seabird-handling procedures and protocols and ensure these procedures and protocols are adhered to.

## 6. Implementation

The mitigation standards outlined above are implemented through Fisheries (Seabird Mitigation Measures—Bottom Longlines) Circular 2018 and non-regulatory management measures. Non-regulatory management measures applicable to hand baiting bottom longline vessels are set out either in the Ling Bottom Longline LIN 2-7 Operational Procedures or Inshore Bottom Longline Operational Procedures and Protected Species Risk Management Plans (PSRMPs).<sup>11</sup>

### *Ling bottom longline operational procedures*

Ling bottom longline operational procedures apply to all vessels that target ling in fish stocks LIN 2 – LIN 7 and are agreed between ling quota holders, vessel operators and Fisheries New Zealand. Ling bottom longline operational procedures are implemented and administered by the Deepwater Group Ltd, an organisation which represents the majority of deepwater quota holders.

---

<sup>10</sup> Deck hoses must be used carefully, as they may harm seabirds.

<sup>11</sup> The applicable operational procedures depend upon the targeted fish stock.

The Deepwater Group contracts an environmental liaison officer (ELO) to oversee bottom longline operational procedures and associated processes. The ELO visits most vessels annually<sup>12</sup> to train crew, and review and update VMPs. The number of vessels visited by the ELO is reported annually by Fisheries New Zealand<sup>13</sup> and will be included in the seabird annual review report.

### *Inshore bottom longline operational procedures/protected species risk management plans*

Inshore bottom longline operational procedures apply to all bottom longline vessels that do not target ling in fish stocks LIN 2 – LIN 7. They are agreed between quota holders, vessel operators and Fisheries New Zealand and set out the fleet wide management measures to reduce interactions between seabirds and bottom longline vessels. Inshore bottom longline operational procedures are implemented and administered by Fisheries Inshore New Zealand, an organisation which represents quota holders and vessel operators.<sup>14</sup>

Associated with inshore bottom longline operational procedures, each vessel is required to have, and follow, a PSRMP which sets out the vessel specific mitigation measures agreed by the vessel owner/operator that will be used on that vessel. See Appendix 2 for an example PSRMP.

Fishers are assisted with the development of PSRMPs through the Department of Conservations (DOC) Protected Species Liaison Project. As part of the Liaison Project, liaison officers contact fishers to support them in the development and implementation of PSRMPs. Liaison officers regularly visit fishers to audit and review plans and assist operators with changes as necessary. Liaison officers also provide skippers and crew with advice regarding tori line construction and development tailored to the specifics of individual vessels.

The progress of liaison officers is reported back to DOC monthly by the liaison officer project coordinator. The number of PSRMPs in place, and the number of vessels visited is reported annually by DOC<sup>15</sup> and will be included in the seabird annual review report.

## 7. Verification

Vessel adherence to the mitigation standards is verified through Fisheries New Zealand observer coverage. After each trip, the observer completes a bottom longline operational procedures observer review form (Appendix 3) or a protected species risk management plan observer review form (Appendix 4).<sup>16</sup> Fisheries New Zealand discuss the review form with the observer and then sends it to either the Deepwater Group ELO or the liaison officer coordinator to follow up on any issues with the vessel operator. The outcome of any follow-up actions are reported to Fisheries New Zealand and DOC quarterly and are reported annually in the Seabird Annual Report.

---

<sup>12</sup> The ELO prioritises visiting new vessels and those deemed 'higher risk' due to the number of reported captures or other issues.

<sup>13</sup> <https://www.mpi.govt.nz/dmsdocument/33340-annual-review-report-for-deepwater-fisheries-201718>

<sup>14</sup> <https://www.inshore.co.nz>

<sup>15</sup> <https://www.doc.govt.nz/our-work/conservation-services-programme/csp-reports/2017-18/protected-species-liaison-project/>

<sup>16</sup> The choice of form depends on the fish stock that the vessel targets.

During their trips, Fisheries New Zealand observers also inspect and measure tori lines and the configuration of fishing gear. They record their findings on a tori line details form (Appendix 5) or the bottom longline gear form (Appendix 6).

Observer coverage of the hand baiting bottom longline fleet is targeted towards those vessels active around the north coast of the North Island or those targeting ling around the South Island. Levels of observer coverage in both areas are relatively low with approximately 5% of hooks typically observed in both areas each year.

## 8. Sink rate

A bottle test provides a simple, cheap method for an observer, liaison officer or fisher to establish the sink rate of bottom longline gear.

To conduct a bottle test, attach an empty plastic bottle to a clip using 10 metres of monofilament or rope. During setting, clip the bottle to the mainline next to the slowest sinking hook and throw it overboard. Once the bottle has been pulled under the water, the mainline will be 10 metres deep.

The Commission for the Conservation of Antarctic Marine Living Resources<sup>17</sup> and fishers in New Zealand<sup>18</sup> have developed very similar protocols for conducting bottle tests on bottom longline gear. When the tests are conducted at night, a light stick can be substituted for a bottle.

Bottle tests should be conducted regularly and whenever gear set-up or setting speed is significantly changed (this makes sure that the new set-up meets the mitigation standards). The tests should also be conducted at random intervals along the line (this makes sure that all hooks are sinking at the required rate).

An additional document with more detailed information on how and when to conduct bottle tests will be distributed to skippers and crew by the ELO or liaison officer.

### Measuring aerial extent

The aerial extent of a streamer line can be measured by accurately measuring the distance between streamers and counting the streamers until the streamer line touches the water. Alternatively, it can be measured by streaming a separate rope, graduated in metres and with a tension-generating device on the end, until the streamer line touches the water.

---

<sup>17</sup> CCAMLR Conservation Measure 216/XX: Experimental line-weighting trials. Retrieved from <https://www.ccamlr.org/sites/default/files/216-XX.pdf>

<sup>18</sup> JPEC Ltd. (2014, December). *Bycatch bylines*. Issue 13. Retrieved from <https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/marine-conservation-services/bycatch-bylines/bycatch-bylines-december-2014.pdf>

## Appendix 1: Characteristics of the hand baiting bottom longline fleet

Hand baiting vessels vary in length between 6 metres and 25 metres. A total of 93 vessels fished using the method of bottom longlining during the 2017/18 fishing year however the number of fishing events (sets) conducted per vessel varied between less than 10 and over 300. The number of hooks deployed each set typically varies between less than 100 and over 6,000. Collectively, the hand baiting fleet set approximately 20 million hooks during 2017/18.

Hand baiting vessels target a wide variety of species and are active around New Zealand's entire coastline—from shallow inshore waters to offshore areas over 600 metres deep. The most frequently targeted species are snapper (mainly between Northland and the Bay of Plenty), ling (around the South Island and eastern North Island) and bluenose (mainly in northern waters).

All hand baiting vessels use hook-bearing lines that are externally weighted. However, the gear set-up varies considerably between target species and operators. For example, more floats are typically added to the line when bluenose is targeted.

All vessels discharge their fish waste (processing offal, unwanted fish and used bait) at sea.