

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

## Set net

### 1. Introduction

To effectively reduce the risk of seabird captures, set net vessels need to use a combination of mitigation practices that best address the risks of their individual operations. As the set net 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 set net 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 standards are applicable to all set net vessels, regardless of dimensions. For convenience, these standards are also applicable to those operators who deploy set nets from the beach<sup>1</sup>. See Appendix 1 for a characterisation of the set net fleet.

### 3. Desired outcomes

1. The discharge of fish waste<sup>2</sup> from the vessel is managed so as not to attract seabirds to risk areas.
2. The spatial placement of set nets does not pose an unnecessary risk to seabirds (particularly penguins and shags).
3. Seabird attraction towards, and access to, set nets is minimised. If seabirds do access nets, the risk of harmful interactions is minimised.
4. The risk of deck landings or impacts against the vessel is minimised.<sup>3</sup>

---

<sup>1</sup> Beach setters usually anchor one point of the net to the shore, create an arc of the net and then retrieve it to the shore where the net is cleared. Such nets tend to be very short but can target a range of fish including mullet, flatfish, kahawai and trevally.

<sup>2</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>3</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 (Commercial Fishing) Regulations 2001<sup>4</sup> govern the size of mesh, the maximum length of time the net can remain in the water (soak time), the maximum length of a set net, and restricts use of set nets in channels, estuaries and bays. The use of set nets is also prohibited in a number of areas around both the North and South Island.

## 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:	Any fish waste discharged during hauling <sup>6</sup> must be batch discharged. <sup>7</sup>

---

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

- Develop and document a fish waste management system that describes how mitigation standards 1.1 and 1.2 will be met. A copy of this document 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 mitigation standards 1.1 and 1.2.
- Retain all fish waste on board during setting.
- 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.
- Return live fish (in accordance with schedule six of the Fisheries Act 1996 and sub MLS fish) as soon as practicable after they were taken.
- Maintain a secondary system that prevents fish waste lost to the deck from being lost

---

<sup>4</sup> Retrieved from <http://www.legislation.govt.nz/regulation/public/2001/0253/latest/whole.html>

<sup>5</sup> Setting' is defined as the act of releasing a net (or nets) into the water

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

<sup>7</sup> Batch discharging is defined as holding all fish waste for at least 30 minutes and then discharging it in periods that last no more than five minutes each.

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: The spatial placement of set nets does not pose an unnecessary risk to seabirds (particularly penguins and shags)**

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

---

Mitigation standard 2.1:	Nets are not set in the vicinity of known or observed bird colonies or known foraging areas.
Mitigation standard 2.2:	Nets are not set in an area when there is active bird activity, such as feeding/diving.

---

To meet mitigation standards 2.1 and 2.2 vessel operators should:

- Avoid fishing in areas where seabirds have been caught previously.
- On sighting large numbers of seabirds in the vicinity, on land or on the water where nets are intended to be set, consider setting elsewhere.
- Consider times of the year when seabirds are more likely to be actively foraging in the area when setting a net.<sup>8</sup>

**Desired Outcome 3: Seabird attraction towards, and access to, set nets is minimised. If seabirds do access nets, the risk of harmful interactions is minimised**

Mitigation standards 3.1, 3.2, 3.3, 3.4 and 3.5 are necessary to achieve desired outcome 3.

---

Mitigation standard 3.1	All practicable stickers (fish caught in mesh) are removed from the net before each shot.
Mitigation standard 3.2	The amount of time fishing gear remains at, or near, the surface is minimised.
Mitigation standard 3.3	Nets are not stalled. <sup>9</sup>
Mitigation standard 3.4	All gear maintenance/repairs (planned or otherwise) are conducted in a way which minimises the risk to seabirds.
Mitigation standard 3.5	Any seabirds caught in the net and released alive are handled in ways that maximise their chance of survival (whilst managing the risk to the crew)

---

---

<sup>8</sup> Supporting resources will be available describing likely areas/times where seabirds will be most actively foraging in your region

<sup>9</sup> Stalling is defined as nets becoming stranded above the tide. Stalled nets may attract seabirds and increase the risk of captures. Stalling is prohibited by regulation.

To meet mitigation standards 3.1, 3.2, 3.3, 3.4 and 3.5 vessel operators should

- Ensure the crew actively clear the net of all practicable stickers during hauling.<sup>10</sup>
- Shoot and haul the net as quickly as practicable.
- Ensure the net is set so that stalling will not occur.
- Inspect and maintain all fishing gear and equipment to reduce the risk of gear or equipment failure.
- Conduct planned gear maintenance whilst the net is on board. If the net must be in the water during repairs, the repairs must happen when there's a low risk of seabirds getting caught (such as at night or during periods of low seabird abundance).
- Conduct all unplanned/emergency gear maintenance whilst the net is on board. If the net is required to be in the water to effect repairs, all such maintenance should be conducted in such a way that minimises seabird capture whilst not endangering crew safety.
- All emergency vessel repairs should minimise risks to seabirds where possible whilst not endangering crew safety.
- 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 non-regulatory management measures as set out in the Set Net Operational Procedures and Protected

---

<sup>10</sup> This is particularly important when the net is under-run (when fishers retrieve the net, clear the catch, and then reset the net as part of the same operation) as the net may spend time at the surface as catch is removed.

Species Risk Management Plans (PSRMPs). Set net operational procedures set out the fleet wide management measures to reduce interactions between seabirds and set net vessels whereas PSRMPs set out the vessel specific measures each vessel will follow to reduce the risk to protected species.

Set net operational procedures are agreed between quota holders, vessel operators and Fisheries New Zealand and are implemented and administered by Fisheries Inshore New Zealand, an organisation which represents quota holders and vessel operators.<sup>11</sup> Coastal set net operational procedures are applicable to all set net vessels operating in coastal waters whereas the harbour set net operational procedures (currently under development) will be applicable to those set net vessels operating in shallow enclosed waters (see Appendix 1 for more information of the different set net fleets).

Associated with set net operational procedures, each vessel is required to have, and follow, a PSRMP which sets out the 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 Conservation's (DOC) Protected Species Liaison Programme. As part of the Liaison Programme, 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.

The progress of Liaison Officers is reported back to the DOC Liaison Programme Coordinator on a monthly basis. The number of PSRMPs in place, and the number of vessels visited is reported annually by DOC<sup>12</sup> and will be included in the seabird annual review report.

## 7. Verification

Vessel adherence to the mitigation standards will be verified through Fisheries New Zealand observer coverage. After each trip, the observer will complete a set net operational procedures observer review form (currently under development). Fisheries New Zealand will discuss the review form with the observer and then send it to the Liaison Officer Programme Coordinator to follow up on any issues with the vessel operator. The outcome of any follow-up actions will be reported to DOC quarterly and will be included within the seabird annual review report.

During their trips, Fisheries New Zealand observers also inspect and measure the configuration of fishing gear. They record their findings on a set net gear form (Appendix 3).

Levels of observer coverage in set net fisheries is mixed. Some areas are very well observed (e.g. around New Plymouth) with 100% coverage in recent years. Other areas, such as the south and east coast of the South Island are moderately well observed with up to 30% observer coverage in recent years. In some areas and sectors (e.g. Cook Strait or enclosed waters such as estuaries), observer coverage is low.

In addition to audits conducted by observers, vessel operators should review their PSRMPs at regular intervals to assess performance.

---

<sup>11</sup> <https://www.inshore.co.nz>

<sup>12</sup> <https://www.doc.govt.nz/our-work/conservation-services-programme/csp-reports/2017-18/protected-species-liaison-project/>

## Appendix 1: Characteristics of the set-net fleet (February 2018)<sup>13</sup>

### Harbour set netting

Harbour set netting generally targets species such as flatfish, mullet and kahawai in relatively calm and enclosed waters such as harbours or estuaries. Particular areas of activity include the Kaipara, Manukau and Raglan harbours, Lake Ellesmere, the Hauraki Gulf and Firth of Thames.

Vessels used for harbour set netting are commonly trailer dories that set relatively small amounts of net with limited mesh heights. They are often open vessels (vessels that don't have a wheelhouse or superstructure) and are crewed by one person who retrieves the net by hand. Many harbour set net fishers also undertake ring netting; a more active form of netting that has a shorter soak time.

### Coastal set netting

Coastal set netters target species such as rig, school shark or warehou in waters up to 80 metres in depth or species such as butterfish in shallow coastal waters near kelp beds. Particular areas of activity include the coast of southern Taranaki, Kaikoura, Banks Peninsula, the South Canterbury Bight, coastal Otago and Foveaux Strait.

Vessels used for coastal set netting are generally larger (10 metres or longer), and operate in deeper water than harbour set netters. Many vessels fish using the method of set netting for part of the season and undertake other fishing methods (such as trawling) for the remaining months. Many coastal set net vessels undertake multiday trips.

Vessels targeting school shark tend to have multiday trips and ice their catch as soon as possible.

### Set net methods

Set nets are deployed in diverse ways, depending on the target species. Some nets are left to soak for long periods (the maximum time a net can be soaked is 24 hours), while others may be set for as little as 30 minutes.

Some fishers deploy one continuous net, while others deploy a series of shorter nets targeting a depth or habitat range. Some fishers retrieve the net, clear the catch, and then reset the net as part of the same operation (termed 'under-running'). Other fishers retrieve the net onto the vessel or net drum and then reset the net in the same or a different location.

Whilst nets are relatively quick to set, retrieving the net can take up to three hours depending upon the amount of fish caught (as the net is brought on board, the catch is removed from the net by hand).

### Fish processing

Depending on the species caught, processing may be conducted on board. The catch will usually be gutted or processed at the end of the haul but may be processed during the haul

---

<sup>13</sup> Between 240 and 250 vessels reported using set net, ring net or beach seine methods during the 2017/18 fishing year. Of these, over 150 reported activity consistent with harbour set netting.

if there are sufficient crew. The timing of processing is particularly important in shark fisheries, as the catch will spoil if it's not processed and iced immediately.

## Appendix 2: Protected species risk management plan template

## Set net - Protected Species Risk Management Plan

FV	Home Port	Call sign
Owner-Operator	Skipper	Date

  

Vessel photo	Mitigation photo	Mitigation photo
--------------	------------------	------------------

### Purpose of this RMP

This RMP documents the required and agreed procedures and actions to be followed on this vessel to reduce risk of protected species captures. Skipper(s) and crew must also read and understand the 10 Golden Rules and the Set net Operational Procedures which support this RMP.

### Regulated measures for protected species reporting

It is a legal requirement to report all protected species captures using the Non-Fish Protected Species Catch Return or electronically.

**This vessel's measures used to manage the risk of non-fish protected species capture**

[illegible]

Contact your Liaison Officer when a trigger point is reached. Triggers more likely in your area are highlighted:

- Any great albatross, penguin, dolphin, sea lion, leopard seal, basking shark, turtle, black petrel or flesh-footed shearwater
- In any 24 hr period - 3 large (e.g. albatross/mollymawk, giant petrel, gannet) or 5 small (e.g. petrel/shearwater) seabirds, or 2 fur seals
- In any 7-day period - 10 seabirds of any type, or 5 fur seals.

Contact	Ph	Email
---------	----	-------

## Appendix 3: Set net gear form

<b>Observer Setnet Gear Form</b> (Version 2)									Trip number <div style="border: 1px solid black; height: 20px; width: 100%;"></div>	Obs code <div style="border: 1px solid black; height: 20px; width: 100%;"></div>
<b>1. Complete one section for each distinct net used</b>										
Net ID	Height of net (m)	Mesh size (mm)	Float size (mm)	Max float spacing (m)	Ground weight (g)	Max weight spacing (m)	Max pinger spacing (m)	Length (m)		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
Comments <div style="border: 1px solid black; height: 20px; width: 100%;"></div>										
Net ID	Height of net (m)	Mesh size (mm)	Float size (mm)	Max float spacing (m)	Ground weight (g)	Max weight spacing (m)	Max pinger spacing (m)	Length (m)		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
Comments <div style="border: 1px solid black; height: 20px; width: 100%;"></div>										
Net ID	Height of net (m)	Mesh size (mm)	Float size (mm)	Max float spacing (m)	Ground weight (g)	Max weight spacing (m)	Max pinger spacing (m)	Length (m)		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
Comments <div style="border: 1px solid black; height: 20px; width: 100%;"></div>										
Net ID	Height of net (m)	Mesh size (mm)	Float size (mm)	Max float spacing (m)	Ground weight (g)	Max weight spacing (m)	Max pinger spacing (m)	Length (m)		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
Comments <div style="border: 1px solid black; height: 20px; width: 100%;"></div>										
Net ID	Height of net (m)	Mesh size (mm)	Float size (mm)	Max float spacing (m)	Ground weight (g)	Max weight spacing (m)	Max pinger spacing (m)	Length (m)		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
Comments <div style="border: 1px solid black; height: 20px; width: 100%;"></div>										
Net ID	Height of net (m)	Mesh size (mm)	Float size (mm)	Max float spacing (m)	Ground weight (g)	Max weight spacing (m)	Max pinger spacing (m)	Length (m)		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
Comments <div style="border: 1px solid black; height: 20px; width: 100%;"></div>										
Net ID	Height of net (m)	Mesh size (mm)	Float size (mm)	Max float spacing (m)	Ground weight (g)	Max weight spacing (m)	Max pinger spacing (m)	Length (m)		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
Comments <div style="border: 1px solid black; height: 20px; width: 100%;"></div>										
Net ID	Height of net (m)	Mesh size (mm)	Float size (mm)	Max float spacing (m)	Ground weight (g)	Max weight spacing (m)	Max pinger spacing (m)	Length (m)		
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
Comments <div style="border: 1px solid black; height: 20px; width: 100%;"></div>										