TEN GOLDEN RULES FOR SMALL SURFACE LONGLINERS TO SAVE PROTECTED SPECIES

- 1. Ensure your vessel has onboard:
 - The vessel's Protected Species Risk Management Plan (PSRMP)
 - The Surface Longline Operational Procedures, and
 - A copy of the current surface longline seabird regulations.
- 2. For all setting events you must use a tori line and either set at night or use line weighing, unless you are using a hook-shielding device as a standalone measure (rule 7).
- 3. When using a tori line it must meet the legal standard and always be deployed when fishing. The tori line must achieve minimum aerial extent of 75m from the stern. Tori line must be attached at least 6m above vessel's waterline as close to the stern as practicably possible.
- 4. Streamers must be durable and brightly coloured. Short streamers must be min of 1m long, fitted every 1m. Long streamers must be fitted a max of 5m spacing and must reach the water surface. The first 15m of tori line may be modified to reduce tangling. Carry a spare tori line and ample spare parts.
- 5. Know the <u>line weighting legal standards</u> use weight of 60 g within 3.5m of hook, 40 g within 50 cm of hook. (Consult circular for other line weighting standards).
- 6. If not line weighting you must set only at night (i.e. only set between a half hour after nautical dusk and a half hour before dawn) as legally required (unless using a hookshielding device (rule 7).
- 7. Hook-shielding devices (aka Hookpods) can be used as a standalone device. They must be on 100% of the gear and attached so that they can be retrieved. Hook-shielding devices must be deployed in accordance with line weighting regulations (rule 5).
- 8. No offal/fish waste discharge when setting and 'hold & or batch-discharge' when hauling (no continuous discharge). Use thawed bait for setting hooks.
- Report all protected species captures by ERS or in the Nonfish Protected Species Catch Return (NFPSCR) logbook and send to FishServe. Record bird band numbers and report. <u>It is illegal not to report.</u>
- 10. <u>Report protected species trigger level captures to Liaison Officer.</u> A trigger level is a capture level that actions a skipper in real time to try and increase mitigation to reduce ongoing risk of further captures. Please consult your Protected Species Vessel Risk Management Plan for relevant trigger levels.

For support phone your local Liaison Officer.







TEN GOLDEN RULES

NON-FISH OR PROTECTED FISH SPECIES (NFPS) CATCH REPORTS

- 1. The Fisheries (Reporting) Regulations 2017 require reporting of **all** NFPS captures (dead or alive). It is an offence to fail to report.
- 2. All permit holders and skippers must know the law and be able to file an NFPS catch report using their vessel's Electronic Reporting system.
- **3.** Fisheries New Zealand observers file their own NFPS catch reports, but this does NOT mean the vessel's obligation to report has been removed.
- 4. Captures means that the NFPS has become fixed, entangled, or trapped in such a way that it cannot move freely or free itself from any part of the fishing gear. (includes for example tori lines and paravanes)
- **5.** Deck strikes means seabirds injured or dead from colliding with the vessel, or any that need crew assistance to leave the vessel because they are disoriented.
- **6.** Treat all animals with respect and care (dead or alive).
- Return all NFPS to the sea promptly and carefully unless required to be kept on board by a Fisheries New Zealand observer.
- **8.** Unauthorised retention or any further interference with protected species is an offence under the Wildlife Act 1953.
- 9. If unsure of the species name (NFPS code) use the generic codes provided.
- **10.** E-logbook Users Instructions and Codes can be found here: https://www.fisheries.govt.nz/dmsdocument/37982-Fisheries-E-logbook-Users-Instructions-and-Codes-Circular-2019





Non-Fish or Protected Fish Species Catch Report - Summary Information

(from Fisheries New Zealand Electronic Catch and Position Reporting Guide July 2019)

You must complete an NFPS Catch Report if there is an interaction with the following by the vessel or gear during a trip:

- Birds:
- Marine mammals (e.g. New Zealand fur seal);
- Marine reptiles (e.g. turtles);
- Protect fish species (e.g. basking shark, great white shark, manta ray, black spotted grouper);
- Selected benthic organisms (corals, sponges, and bryozoans).

You will be prompted for more information about how the capture happened if a seabird is taken during trawling or surface or bottom longlining.

You must take care when choosing codes where there is a group option and a specific option so that you do not accidentally report an organism twice.

If there is more than one NFPS capture during an event, they will all be recorded on the same NFPS Catch Report.

The NFPS Report must be completed and provided at the same time as the Fish Catch Report, if it occurs as part of a fish catch event.

If the capture happens while you were not actually fishing (e.g. while steaming), the NFPS Catch Report will be a standalone report, i.e. it will not be linked to a Fish Catch Report and must be completed and provided to FishServe before the end of the day on which you became aware of the capture.

Online resources to assist you with NFPS identification

- The DOC website has material on coastal and deep water seabird species. Guides include MPI reporting codes and are available in multiple languages: <u>doc.govt.nz/our-work/conservation-services-programme/csp-resources-for-fishers/a-fishers-guide-to-new-zealand-seabirds/</u>
- A fuller set of invertebrate NFPS material is available at: <u>fs.fish.govt.nz/Doc/23020/</u> AEBR_86.pdf.ashx
- A coral guide is available at <u>doc.govt.nz/Documents/conservation/marine-and-coastal/fishing/coral-id-guide-updated.pdf</u>

Small Vessel Surface Longline

Operational Procedures for Protected Species Risk Management

Version 2.1



FISHERIES INSHORE NEW ZEALAND

Contents

Part 1: Introduction	4
Purpose and rationale of these operational procedures	4
Objectives of these procedures	4
Status of these procedures	4
Application of these procedures	4
Other key operational documents or rules & regulations	5
Seabirds	5
National Plan of Action-Seabirds (NPOA-Seabirds)	5
Marine mammals, sharks, and other protected species	5
Sharks	6
Part 2: Responsibilities of Crew	7
Commitment to these procedures	7
Vessel owner and operator responsibilities	7
Vessel crew responsibilities	7
Liaison officers' responsibilities	8
Part 3: Risks Associated with the SLL Fisheries	9
Part 4: Mandatory MPI Seabird Mitigation Requirements	10
Summary	10
Hook-shielding devices	10
Tori lines (also see regulations where tori lines are described as streamer lines)	10
Tori line requirements (vessels under 35m)	11
Line weighting specifications (also see regulations)	12
Fish offal control and bait	12
Bait	12
World's best practice (as defined by the Agreement on the Conservation of Albatrosse Petrels [ACAP])	
Part 5: Additional Mitigation Practices	13
Disposal of fish waste	13
Hauling stations	13
Thawing of bait	13
Dyeing of bait	13
Vessel lighting	13
Adapting to high risk periods	13
Part 6: Protected Species Handling & Release and Crew Safety	14
Seabirds	14
Release Alive	14
Bird release	14

Hook swallowed	14
Hook through body part	14
Gear tangled	14
Return to sea	14
Other protected species	15
Release alive	15
Marine mammal release	15
Turtles	15
Seal handling and crew safety issues	15
Part 7: MPI Mandatory Reporting	16
NFPSCR codes	
Part 8: Reporting - Triggers	17
SLL Programme Triggers & Reporting Requirements	
SLL Triggers Breach & Reporting Contact 24/7	17

Disclaimer: This document has been produced to serve as a guide to the fisheries regulations relevant to commercial surface longlines fishing operations for use by the industry. This is not intended to be used as a substitute to any statutory, regulatory and/or non-regulatory requirements for Surface longline fishing. Before acting in reliance, either wholly or partially, on any information contained in this document, readers should seek advice as to how current legislation, rules and regulations may affect their interests. It is the duty of the operator to know and understand the current regulations that apply.

MPI has stated that at-sea inspections will become more directed as a result of the availability of GPR data. Make sure you know what you need to meet legal requirements on protected species mitigation measures and reporting. Please contact your Liaison Officer for support if you need assistance.

Part 1: Introduction

This Operational Procedure (OP) is written by Fisheries Inshore New Zealand (FINZ) in collaboration with the Department of Conservation Services Programme (DOC CSP) Liaison Programme and Fisheries New Zealand. It sets out the management measures required by the Ministry for Primary Industries (MPI) by law (the mandatory measures) as well as additional best practice measures and reporting requirements, such as the Mitigation Standards document. Support to fishers to achieve best practice outlined in this OP is provided by the DOC CSP Liaison Program.). This OP is for small surface longline vessels, generally less than 35 metres in length, operating in highly migratory species (HMS) fisheries as well as inshore fisheries.

Purpose and rationale of these operational procedures

The Surface Longline Operational Procedures have been established so that seabird risk reduction practices are documented and able to be understood by vessel owners, skippers, and crew. Other protected species are known to be caught in the surface longline fleet (e.g. fur seals and turtles); however, the main protected species at risk are seabirds and therefore this document focuses on seabird capture mitigation regulations and techniques.

The observed and estimated capture rates of seabirds from the small vessel surface longline (SLL) fisheries are sufficient to require a structured risk management approach.

The factors that can increase the risk of incidental captures by SLL are:

- Attraction to setting (and hauling) baits
- Inadequate tori line coverage over setting hooks
- Slow sink rate of hook and bait allowing birds time to reach sinking baits
- Offal and used baits around vessel while setting and hauling
- Day fishing or night fishing with clear skies and full moon when the bait is more visible
- Fishing areas and seasons where there are high numbers of, and/or hungry, seabirds.

Objectives of these procedures

The objectives of these OPs are to make sure the vessel's skipper and crew:

- Understand that risk of seabird mortalities is mitigated by reducing the risk of captures
- Make sure this vessel has robust, documented, and easy-to-follow seabird mitigation procedures (i.e. Protected Species Risk Management Plans) in place that meet all mandatory, as well as other best practice, measures
- Understand and adhere to mandatory measures
- Are aware of additional, voluntary measures that go above and beyond statutory requirements
- Are actively involved in seabird mitigation measures and improvement through ongoing observation, information gathering and action.

Status of these procedures

This OP came into effect in 2016 and this current version is 2.0, which has been published and circulated in January 2020.

Application of these procedures

These OP apply to:

- All surface longline vessels less than 35 m length overall.
 - There are different mandatory specifications and procedures for vessels over 35m

Other key operational documents or rules & regulations

These OPs are to be used alongside or with (but do not replace or override) the following:

- Fisheries (Seabird Mitigation Measures Surface Longlines)
- Vessel Specific Protected Species Risk Management Plans (PSRMPs)
- Handling procedures and other documentation provided in the OP manual provided by the liaison officer
- Any vessel safety plans or operating procedures
- All or any relevant laws and regulations pertaining to fisheries activities in New Zealand waters.

Seabirds

National Plan of Action-Seabirds (NPOA-Seabirds)

The NPOA-Seabirds is of particular relevance to these OPs. The NPOA was established as part of New Zealand's obligations under the FAO's International Plan of Action (1999) and is linked to UN and FAO processes and guidelines. It sets out objectives for the next five years to guide the management of risk to seabirds in New Zealand fisheries.

The Risk Assessment Methods referred to in the NPOA is a useful guide to assess the impact of potential fisheries mortalities on 93 of the seabird species that breed in the New Zealand region. A risk 'factor' is estimated for each seabird species (i.e. the ratio between the estimated annual potential fatalities due to fisheries and the number that the population can withstand to sustain or grow its population). The risk ratios are assessed on a fishery-by-fishery basis where data is sufficient to allow this. A key part of the NPOA is the objective to move seabird species to a lower risk category within the five-year period.

The NPOA process also developed a document called Mitigation Standards to Reduce the Incidental Captures of Seabirds in New Zealand Commercial Fisheries (Toolbox of Measures). This document outlines some mitigation approaches that are statutory requirements, and some that are above and beyond statutory requirements. The fishing industry focuses on ensuring our fleets are at a minimum meeting statutory requirements but encourages vessels to go above and beyond required practices to further reduce their risk of seabird captures, as appropriate to their vessel operations.

Currently, several species, e.g. black petrel, flesh footed shearwater, wandering albatross (Antipodean and Gibson's) as well as white-capped, southern and northern Buller's albatross are caught by SLL are assessed to be in a risk category (high or very high) and need an immediate and ongoing reduction in captures or risk of capture. There are other species with significant observed captures in this fishery. Captures occur in all areas often fished by the fleet.

Marine mammals, sharks, and other protected species

Other protected species are at risk of being captured during surface longline operations. Fur seals can be incidentally caught. A majority of these are released alive, indicating that they may be caught on the haul; however, as with all protected species survival is uncertain. They appear to mostly be at risk in surface longline operations targeting southern bluefin tuna. Observed captures have primarily taken place off of the East Coast North Island and West Coast South Island. There is the potential for other marine mammals, such as dolphins, to become entangled in the backbone.

Sea turtles can also be incidentally caught during surface longline fishing operations, though the majority are released alive, indicating that they may be caught on the haul. They appear to

mostly be at risk in surface longline operations targeting bigeye and swordfish. Observed captures have primarily taken place off the East Coast of the North Island. Refer to your handling procedures and use the turtle de-hooker provided by your LO.

Sharks

Sharks also are at risk of being caught during surface longline operations. As of 2019, Mako sharks were listed by the Convention on International Trade of Endangered Species (CITES). This means that if you intend to export mako shark product internationally, you must obtain the correct permits. This is a similar process for exporting porbeagle shark product, another species listed by CITES. Please contact DOC for more information on the permitting process.

Part 2: Responsibilities of Crew

The following outlines the responsibilities of vessel crew to the Small Vessel Surface Longline Operational Procedures.

Commitment to these procedures

All vessel owners or operators of vessels in these surface longline fisheries are required to adhere to these Ops and ensure that crew are trained on these procedures with assistance of their Liaison Officer.

Vessel owner and operator responsibilities

All vessel owners and operators must:

- Ensure that operators and crews of all surface longline vessels targeting tunas and swordfish are aware of and act in accordance with the requirements of these OPs – including:
 - Fishing operations are meeting mandatory requirements
 - Crew are briefed on the Surface Longline Operational Procedures and fully understand the actions required
 - Crew are aware of seabird activity around the vessel, assess the risks and take action to minimise these risks
 - Vessel is using hook-shielding devices as a stand-alone mitigation measure, OR
 - Vessel is using a tori line during setting, AND vessel is setting lines at night, OR
 - Vessel is using a tori line during setting, AND vessel is using line-weighting in accordance with regulations (for day setting)
 - Vessel has on board a fit and proper tori line, plus spare and sufficient parts to maintain and repair in event of loss or damage
 - Mitigation devices are deployed and adjusted to best suit weather, fishing gear and operations, as well as offal and bait waste discharge to minimise risk
 - Have a copy of "The 10 Golden Rules for SLL Vessels" on the bridge
 - Correct reporting (MPI and Liaison Programme) and that trigger reports are sent to Liaison Officers in real time
 - o Communication with Liaison Officer as required for information or support
 - Any required corrective action is undertaken
 - o Crew meet responsibilities below.

Vessel crew responsibilities

All vessel crews must:

- Be familiar with this Operational Procedure and other documents and put these in to practice
- Ensure all fishing practices and mitigation meet mandatory requirements
- Use hook-shielding devices (e.g. Hookpods) as a standalone measure, or
- Use a streamer line and fish at night OR Use a streamer line and line weight to mandatory standards
- Control offal and used baits to ensure no discharge of offal and fish waste occurs when setting and that offal, fish, and fish waste is discharged in batches on the opposite side from the hauling station during hauling
- Hold used baits and batch discharge ensuring no continuous or ad hoc discharge of offal and fish waste occurs when fishing
- Carry and deploy a vessel-specific tori line that meets the required standards and spare parts to rebuild/replace if damaged or lost

- Tori lines are deployed and adjusted to best suit weather, fishing gear and operations, and fish waste discharge conditions to minimise risk
- Handle captured seabirds safely and carefully, returning all seabirds to the sea (unless requested otherwise by MPI observer) as per best practice to reduce potential of cryptic mortality
- Report seabird triggers to Liaison Programme (LP) and report captures in the MPI Non-Fish Protected Species Catch Report (NFPSCR).

Liaison officers' responsibilities

- The Programme Liaison Officer will review each vessel's adherence to these OPs via observer audits and during any vessel visit.
- They will also provide support and training where necessary.

Part 3: Risks Associated with the SLL Fisheries

Seabirds are attracted to setting of baited hooks, loose bait, offal, and discards from the vessel or whole fish on the hauling line. Once attracted, they are at risk of being caught, injured, or drowned.

Risk to seabirds is driven by three main factors which can occur alone or together:

1. Food attractant: offal, waste, bait discards, fish on the hauling line

• The more food, the more birds around the vessel, increasing the risk of captures.

2. Fishing area and calendar period: increased seabird numbers and aggressive feeding

 During periods of higher bird numbers (e.g. breeding season, migration or full moon periods) the feeding behaviour becomes more aggressive increasing the risk of captures.

3. Baited hooks during line setting

- Seabirds are attracted to baited hooks during line setting and are either beak hooked or get foul hooked when baits come off or become entangled in the line
- The risk increases the longer the hook is on or near the surface driven by poor line sink rate
- Risk is also increased if the tori line is poorly designed or deployed and does not provide adequate cover over the gear when setting.

Managing risks associated with these three factors at a vessel level will reduce the incidental capture of seabirds.

Table 1 Main seabird species at risk from SLL fisheries

Seabird Species	Species Code	Main Risk Area
Wandering albatross (Gibson's and Antipodean)	XAG	Kermadec, East Coast North Island
Black petrel	XBP	Kermadec and East Coast North Island (particularly FMA1)
Flesh-footed shearwater	XFS	Kermadec and East Coast North Island (particularly FMA1)
Northern Buller's albatross	XPB	East Coast North Island
Southern Buller's, Salvin's and whitecapped albatross	XPB	East and West coasts South Island
White-chinned petrel	XWC	All areas

Part 4: Mandatory MPI Seabird Mitigation Requirements

Summary

MPI has implemented regulatory requirements for seabird risk mitigation. These standards are required to be met as described by the regulations. You should also have a full copy of the Regulations on board and understand them.

There are two regulated seabird mitigation options, of which it is **MANDATORY** to choose one option: either use hook-shielding devices, OR use tori lines and night setting/line weighting.

Hook-shielding devices

Hook-shielding devices (devices that encase the point and barb of baited hooks to prevent seabird bycatch during line setting, e.g. Hookpods) can be used as a stand-alone mitigation option when used on 100% of the hooks. Since Hookpods themselves weigh 48 g, they must be used in line with weighting requirements (must be attached within 1 meter of the hook).

If hook-shielding devices are not used on 100% of the gear, then the following mitigation measures MUST be used:

Tori (streamer) lines

If hook-shielding devices are not used, then vessels are required to deploy a tori line **and either**:

Set at night: In addition to a tori line, SLL vessels must set only at night unless line weighting is employed (unless hookshielding devices are used). Night setting *and* line weighting is viewed as a best practice that goes above and beyond what is required by law

AND/OR

Line weight: SLL vessels must use line weighting unless setting lines at night (or hook-shielding devices are used).

Hook-shielding devices

Hook-shielding devices were introduced as a stand-alone measure in the Fisheries (Seabird Mitigation Measures – Surface Longline) Circular 2019. This came in to effect on 10 January, 2020.

Hook-shielding devices are a device that encases the point and barb of baited hooks to prevent seabird bycatch during line setting. At this stage, the only recognized hook-shielding device are Hookpods, produced by Hookpod Ltd. They must be designed to be retained on the fishing gear, meaning they are NOT disposable. This means attaching them along the snood within a metre of the hook.

Tori lines (also see regulations where tori lines are described as streamer lines)

If hook-shielding devices are not used, <u>all vessels must deploy a tori line during setting (day and night)</u>.

The tori line must also meet the following minimum specifications:

- The tori line must achieve a minimum aerial extent of 75m.
- It must be attached at a point no less than 6m above the waterline (as close to the stern as possible)
- The streamers must be brightly coloured, be spaced a maximum of 1m apart, and extend along the aerial extent of the line
 - Short streamers must not be less than 1m in length and must be attached no further than 1m apart along aerial section
 - Long streamers (must be long enough to reach the surface of the sea in calm conditions) must be attached at intervals of no more than 5m
- Streamers may be modified in the first 15m of streamer section to minimise risk of entanglement,
- If the tori line is damaged/broken during setting, stop set until it's repaired and or deploy another line

Tori line requirements (vessels under 35m)

<u>Vessel attachment</u>: place as high as possible and recommended at least **8m or more** above waterline. Depending on the position the gear is shot away from crew need to be able to adjust or move the tori line or use a bridle to place tori in best spot relative to fishing gear and weather conditions:

- A breakaway system fitted so tori line will break free before fishing gear breaks or tangles
- A proper pole or attachment point is essential.

Achieve at least **75m** of aerial extent using the three-part system described below (see also design guide):

- 1. <u>Streamer aerial section</u>: backbone of the tori line with streamer of a minimum length of 1m be spaced at no more than 1m intervals:
 - Long streamers, placed at 5m interval which reach down to the water;
 - Short streamers, (must be min 1m in-length fitted in-between the long streamers,
 - Once deployed (without the setting gear) the first time, trim long streamers
 - to stay just above the water to reduce drag, tangling gear, and birds (i.e. so streamers are in the air not in the water).
 - Vessels can use long and short streamers
 - Streamers may be modified along first 15m to minimise tangling
- 2. <u>Drag section</u>: most often long piece of rope or mono, or a float(s) or a mix of both. You need something that gives required drag while reducing risk of tangling with the setting line. You must have a decent amount of drag fitted otherwise you won't get the 75m aerial extent required, to do this you need 75m streamer section, then your drag section.
 - There is no minimum or maximum length the drag rope or object can be other than you must achieve 75m aerial in your streamer section.
- 3. <u>Tangling</u>: if tori lines are not deployed or adjusted correctly, they often tangle with setting gear. To reduce this problem, maintain height separation for as long as possible between the tori line and setting gear:
 - Fix the tori line as high as possible to vessel (every 1m height will give you 8-10m more aerial extent)
 - Increase the drag (most tori lines don't have enough drag) by increasing size, length or weight of drag object, drag rope or object needs to be attached so its streamline with no catch-points for the setting gear to 'grab'
 - Keep streamers out of the water as much as possible. Only the last section of the backbone with short streamers should be in contact with the water,

- Fit a breakaway (weak link) so if a tangle occurs the tori line breaks at the weak spot, then there is no damage to other gear. Have a lazy line back to deck so you can regain the vessel end of the tori line and retrieve it.
- Getting gear deeper than 5-10m less than 70m astern reduces risk of streamers contacting setting gear and far less able to tangle.

Line weighting specifications (also see regulations)

Note: Line weighting can lead to risk of accident or injury, fishing practices need to be assessed, risks identified and procedures both documented and implemented to manage these risks

If setting during daylight hours (see Regulations for detail of what constitutes day and night), the line must meet the following weighting specifications according to NZ law:

- 1 weight 40g or more within 0.5m of the hook; OR
- 1 or more weights of 45g or more 1m from hook; OR
- 1 or more weights of 60g or more 3.5m from hook; OR
- 1 or more weights of 98g or more 4m from hook.

<u>Vessels that cannot meet mandatory weighting requirements must set at night with</u> tori lines deployed, OR use hook-shielding devices in line with the regulations.

- Add additional weight to the line to achieve satisfactory sink rate so seabirds have less time to target the baited hooks in times of heightened risk, add more weight.
- Slower setting speeds, weights, and line setters all help the main line sink more quickly
- Using line-setters or slowing vessel's setting speed will reduce tension on the setting line and increase sink rate of the gear.
- Mainline diameter and material as well as the distance between weights and numbers of floats used all can affect the sink rate.

Fish offal control and bait

• Offal should be held (e.g. in bins) for as long as practicable and batch discharged when fishing ceases or, if required, during hauling on the opposite side of the hauling station.

Bait

When hauling, used bait must be held (e.g. in bins) or batch-discharged at intervals.

World's best practice (as defined by the Agreement on the Conservation of Albatrosses and Petrels [ACAPI)

- Use of an appropriate line weighting regime to maximise hook sink rates close to vessel sterns to reduce availability of baits to seabirds
- Actively deterring birds from baited hooks by means of bird scaring lines, and
- Setting at night, which reduces the visibility of the bait.

Part 5: Additional Mitigation Practices

Disposal of fish waste

- Do not discharge fish waste immediately before or during setting. Retain all fish waste on board during setting.
- With the development of your RMP, have a plan for how you will dispose of fish waste to minimize seabird interactions during setting and hauling. Make sure your crew understands.

Hauling stations

- During hauling, seabird captures have been observed as birds attack returning baits.
 While lesser risk than setting, mitigation measures to reduce risk of captures should be in place at the hauling station:
 - Hose spray is often enough to deter seabirds from the area
 - A seabird scaring device may be fitted around the hauling station
 - Used bait and all fish waste should be held for as long as possible and/or discharged on the other side of the vessel from the hauling station.

Thawing of bait

- The use of totally frozen bait is to be avoided as it floats more than thawed bait
- Bait must be taken out of the freezer or ice for several hours before setting
- Partially frozen bait works well as it is firm when cut up and hooked.

Dyeing of bait

- Bait that is dyed blue reduces its visibility but does not affect its fishing
- This can help at times of particularly high risk as noted below.

Vessel lighting

- Bright spotlights shining back over the stern well behind the vessel onto the hook setting line attract birds. These should be either turned off, replaced with lower output light output or directed from shining directly on the setting longline
- Deck lighting around stern and deck area should be dimmed or shrouded during nighttime setting (while maintaining required safety standards for crew). Headlamps for crew can aid their workspace lighting.

Adapting to high risk periods

- Full moon:
 - During full moon periods seabirds can enter a feeding frenzy leading to very high capture rates
 - Mitigation options include: increasing line sink rate (e.g. slow setting speed, add weight and/or remove floats), adding another tori line, moving from the area, set the line deeper, dye bait
- Multiple captures while setting the gear:
 - Take immediate action to reduce the risk of multiple captures reoccurring (see above)
 - Contact vessel manager and/or Liaison Programme for advice and report seabird triggers (as required below in Part 8).

Part 6: Protected Species Handling & Release and Crew Safety

Seabirds

In addition to the handling instructions below, please see the Hook Removal From Seabirds guidelines developed by ACAP, which will be provided by your Liaison Officer.

Release Alive

Every care should be taken to release seabirds (and any other incidental catch) alive. Reduce stress and handle with care to minimise any further harm or injury to the animal to increase survivability when returned to the sea.

Bird release

- Equipment: line cutter/bolt-cutter, pliers, long handle net, box/bin, towel/blanket, and gloves
- Reduce drag on bird, pull boat out of gear, bring bird onboard by hand or with long handle net
- Keep the bird calm by covering the head with a cloth. Use two crew; one (Crew 1) to support the bird, while the other (Crew 2) frees the gear from the bird. Use gloves and eve protection (beware large birds can inflict a nasty bite).
- Crew 1: secure bird hold wings gently but firmly to the bird's body. Support head, neck, etc.
- Crew 2: isolate tangled gear and/or hook, work on removal of gear/hook.

Hook swallowed

- Do not pull or place pressure on the line/hook
- Crew 2: Cut the line as close as possible to the swallowed hook, leaving the hook untouched in place.

Hook through body part

- Crew 2: Trim off any line, cut or flatten off the barbs from the hook and reverse the hook out, or
- Use bolt-cutters cut the hook in two and thread out.

Gear tangled

 Crew 2: Remove line, cut away gear, locate hook, ensure hook free from bird and all gear free from bird.

Return to sea

If the bird is exhausted/waterlogged, put it in a safe space, e.g. an empty fish crate, box, or an open, safe area on deck away from oil. Let the bird dry out for an hour or two. When the bird is dry or active again, ease the bird back into the water as close to the water surface as possible.

Release bird carefully; don't throw seabird into air, place back on the water-surface.

Report capture to skipper and record in ERS

Other protected species

Release alive

Every care should be taken to release the animals alive, reduce stress, and handle with care to minimise any further harm or injury to the animal, and to increase survivability when it is being returned to the sea alive. Deliberately harassing or harming these animals after an incidental capture and non-reporting is an offence.

Marine mammal release

- If possible, give animals time and space to leave the vessel. Do not take actions that will antagonise the animal. Watch carefully for signs of aggression in the animal.
- Do not allow crew to be in its path or escape route. Use netting as a moving barrier or a deck hose to persuade/guide the animal back to the sea.
- For marine mammals entangled in the gear, it may be necessary to cute the line to allow the animal to disentangle. Having a knife attached to a broom handle on board can allow a crew member to cut the animal free from a safe distance.

Turtles

- Use turtle de-hooker provided by Liaison Officer.
- Release the turtle in the water.

Seal handling and crew safety issues

Seals can carry a number of infectious diseases which can infect humans. Live marine mammals can also be potentially dangerous to humans particularly when they are in stressful situations. Handling marine mammals should always be kept to a minimum and should only occur if and when needed.

When attending to animals landed on deck the following steps should be followed to ensure crew safety:

- Whenever handling bodies of drowned fur seals, sea lions, or any other marine mammals, wear waterproof gloves and waterproof protective clothing
- Where possible, avoid direct contact with blood, urine, faeces, and other bodily fluids. It is also important to avoid the mouth of the marine mammal as this is a major source of disease.
- If bitten or grazed by a marine mammal, as a first measure wash and disinfect the wound immediately, apply betadine/antiseptic ointment and cover the wound. This minimises the risk of 'seal finger', a chronic and very painful infection caused by bacteria carried by some marine mammals. Visit a doctor once ashore as infection is very common with seal and sea lion bites.
- After handling any marine mammal, crew should wash their hands and forearms with antibacterial soap and their protective clothing by hose down.

Part 7: MPI Mandatory Reporting

It is not illegal to accidentally capture protected species while commercially fishing, but it is illegal to fail to report the capture.

It is important that all captures and mortalities are reported. All protected species landed dead or alive (then returned to sea) must be recorded in the **Non-Fish Protected Species Catch Return form** (NFPSCR) or the Electronic Logbook equivalent and then furnished to MPI as required under the Regulations.

NFPSCR codes

- Use the XAL (unidentified albatross/mollymawk) and XXP (unidentified petrels & shearwaters) species codes if you do not know the species. Sea page 8 of this OP for some additional species codes.
- Record any leg band numbers on the form.

Capture: An animal (dead or alive) which is brought onboard on/by the fishing gear and requires assistance/help off the vessel.

Deck-Strikes: Birds that 'collide' with the vessel/deck/superstructure and are dead or injured, unable to leave vessel of its own accord; report as 'deck-strikes' (not reported if alive and leaves the vessel unassisted, i.e. landed on vessel)

<u>Always meet your legal requirements</u>. Record all captures (dead or released alive) and furnish to MPI as required under the fisheries reporting regulations.

Part 8: Reporting - Triggers

Trigger limits are the SLL Programme real-time reporting 'threshold' system. Once a trigger is reached, it requires the skipper to communicate with the Liaison Programme, and the operator/owner and skipper (noting these might be the same person at times) will review the situation. Whenever appropriate, the vessel crew may need to take additional steps to mitigate risk of further capture events. This is usually by actively and immediately reassessing the effectiveness of their offal control and mitigation measures and where necessary alter or deploy additional measures.

SLL Programme Triggers & Reporting Requirements

Not all of these species are at high risk of being captured during surface longline operations; however, they are all listed on your SLL Protected Species Risk Management Plan.

- 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.
- The contact details of your Liaison Officer are listed in your PSRMP.

SLL Triggers Breach & Reporting Contact 24/7

- The vessel (directly) or the onshore Vessel Manager must notify the Liaison Officer within 24 hours of any trigger breach so that any follow-up deemed necessary can be discussed and carried out.
- Emails from Sat-C or texts are OK.
- Your Liaison Officer's contact details are shown on your Protected Species Risk Management Plan

Surface Longline Operational Procedures – Observer Review Form

Trip Number	Observer code	Vessel Name	Trip start date	Trip end date	Sets Observed
			1 1	1 1	

Record Yes (Y), No (N), Unknown (U) or Not Applicable (N/A) in the box provided. If you answer N or U to any questions in Items 6 to 22, then please make detailed comments on the reverse.

Item 1. Did the vessel carry a copy of the SLL Operational Procedures (OP) on board that was made available upon request?

Item 2. Were the crew familiar with the contents of the SLL OP?

Item 3. Were any protected species 'trigger points' activated during the trip? (if Y detail the event and the action taken by the vessel)

Item 4. Did a gear or equipment failure event occur that increased the risk of protected species captures? (if Y detail the event and the action taken by the vessel)

Were there any changes in crew behaviour, fishing activity, mitigation devices deployed

and/or gear used following a 'trigger point' or during 'high risk' periods (i.e. over a full

Mitigation device

moon)?

Item 5.

- Item 6. Was a tori line deployed for the entirety of <u>all</u> sets?
- Item 7. When deployed, was the aerial extent of the tori line adequate to reduce seabird access to the baited hook line?
- Item 8. Were 'fit and proper'* streamers spaces at a maximum distance of 5 m apart along the entire aerial extent of the tori line?
- Item 9. Did the vessel carry a spare tori line or parts to construct a second tori line if required?
- Item 10. Was the tori line attachment point higher than 6 m above the water?
- Item 11. Could the tori line be adjusted or repositioned over the setting line to suit varying conditions?
- Item 12. Other than the tori line, were any other mitigation measures or devices used (if Y record details in comments)

Fish waste and bait management

- Item 13. During hauling, were used baits and fish waste/offal held or batch-discarded at intervals (no ad-hock continuous discharge)?
- Item 14. During setting, was all fish waste/offal held?
- Item 15. Was all discharge from the vessel managed as per SLL Protected Species Risk Management Plan (RMP)?
- Item 16. Was the use of totally frozen bait avoided?

General procedures

Item 17. Was all plastic and line (including fishing plastics such as snoods, carton strapping etc.) retained on board?

Item 18.	Did the vessel only set at night*
Item 19.	When day setting, were weighting devices placed on the snoods within 4 m of the hook as per the SLL Protected Species RMP? (record N/A if the vessel set exclusively at night)
Item 20.	During night** setting, were spot lights shining directly astern controlled or dimmed?
Item 21.	Were all protected species captures recorded on the MPI Non-fish Protected Species Catch Return logbook?
Item 22.	If there were live protected species captures, were they handled with due care?
Item 23.	Do you have any further comments?
* 'Fit and pro ** 'Night' is d	per' streamers should be brightly coloured and of a sufficient length to provide a suitable deterrent to seabirds. efined as between 0.5 hours after nautical dusk until 0.5 hours before nautical dawn.
Please mak	e a detailed comment for each item when required.
Item No:	
Item No:	
Item No:	
Item No:	

Fisheries (Seabird Mitigation Measures—Surface Longlines) Circular 2019 (Notice No. MPI 1104)

This circular is issued by the Manager, Offshore Fisheries, of the Ministry for Primary Industries under Regulation 58A of the Fisheries (Commercial Fishing) Regulations 2001, after complying with the requirements of Regulation 58A(2) of those Regulations.

Circular

1. Title

This circular is the Fisheries (Seabird Mitigation Measures—Surface Longlines) Circular 2019.

2. Commencement

This circular comes into force on 10 January 2020.

3. Interpretation

In this circular—

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

hook-shielding device means a device that-

- a. encases the point and barb of baited hooks to prevent seabird bycatch during line setting; and
- b. meets the requirements set out in the Schedule.

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

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

streamer line means a type of seabird-scaring device, also known as a tori line.

surface longline means a line-

- a. to which hooks (whether baited or not) are attached; and
- b. that is suspended by floats; and
- c. that is not attached to the sea floor.

4. Restrictions on use of surface longlines without hook-shielding devices

An operator or master of a vessel must not set a surface longline in New Zealand fisheries waters without using a hook-shielding device, unless at all times when the line is set, a streamer line that complies with clauses 6 to 8 is used, and either:

- a. the line is set only during the period of time between half an hour before nautical dawn and half an hour after nautical dusk on the same day; or
- b. the line is weighted in accordance with clause 5.

5. Weighting of surface longlines

For the purposes of clause 4(b), for each hook attached to a surface longline, the following weights must be attached to that line:

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

6. Specifications for all streamer lines

- 1. The streamer line must be attached to the vessel.
- 2. A streamer line must use streamers that are—

NEW ZEALAND GAZETTE

- a. brightly coloured; and
- b. resistant to damage from ultraviolet light.
- 3. A streamer line must be configured so that streamers with a minimum length of 1m are attached at intervals of no more than 1m along at least the aerial extent of the streamer line.
- 4. If the streamer line in use breaks or is damaged, it must be repaired or replaced so that the vessel meets the specifications in this clause and clauses 7 and 8 before any further hooks enter the water.
- 5. A streamer line must be strong enough to maintain the aerial extent of the line over the sinking baited hooks.

7. Specifications for streamer lines on vessels less than 35m in length

- 1. A vessel that is less than 35m in overall length must comply with clause 6 and with this clause.
- 2. A streamer line must
 - a. use either:
 - i. streamers long enough to reach the surface of the sea in calm conditions as well as streamers with a minimum length of 1m; or
 - ii. streamers with a minimum length of 1m; and
 - b. be set in a way that achieves an aerial extent of at least 75m; and
 - c. be suspended from a point on the vessel that is
 - i. at least 6m above the surface of the sea in calm conditions; and
 - ii. as close to the stern as practicably possible; and
 - d. be deployed in a way that creates sufficient drag to maximise aerial extent and maintain the aerial extent of the line over the sinking baited hooks.
- 3. Streamers that are long enough to reach the surface of the sea in calm conditions must
 - a. be attached at intervals of no more than 5m along at least the first 75m of the streamer line; and
 - b. be attached to the streamer line in a way that prevents the streamers from wrapping around the streamer line.
- 4. Streamers may be modified along the first 15m of the streamer line to minimise the risk of entanglement.
- 5. If 2 streamer lines are used, they must be deployed on opposing sides of the main line of baited hooks.

8. Specifications for streamer lines on vessels equal to or greater than 35m in length

- 1. A vessel that is equal to or greater than 35m in overall length must comply with clause 6 and with this clause.
- 2. A streamer line must
 - a. use both streamers long enough to reach the surface of the sea in calm conditions and streamers with a minimum length of 1m; and
 - b. be set in a way that achieves an aerial extent of at least $100\mbox{m}$; and
 - c. be at least 200m long; and
 - d. be suspended from a point on the vessel that is
 - i. at least 7m above the surface of the sea in calm conditions; and
 - ii. as close to the stern as practicably possible.
- 3. Streamers that are long enough to reach the surface of the sea in calm conditions must
 - a. be attached at intervals of no more than 5m along at least the first 55m of the streamer line; and
 - b. be attached to the streamer line with swivels that prevent the streamers from wrapping around the streamer line.
- 4. If 2 streamer lines are used, baited hooks must be deployed within the area bounded by the 2 streamer lines.
- 5. If only 1 streamer line is used, the streamer line must be deployed windward of the baited hooks.

9. Circular does not apply to additional or secondary device

This circular does not apply to an additional or secondary seabird-scaring device.

10. Revocation

NEW ZEALAND GAZETTE

The Fisheries (Seabird Mitigation Measures—Surface Longlines) Circular 2018 (LI 2018/213) is revoked.

Schedule

Requirements for hook-shielding devices

cl 3

A hook-shielding device must -

- a. encase the point and barb of the hook until it reaches a depth of at least 10m or has been immersed for at least 10 minutes; and
- b. comply with clause 5; and
- c. be designed to be retained on the fishing gear rather than being lost.

DOMINIC VALLIERES, Acting Manager, Offshore Fisheries, Ministry for Primary Industries.

Explanatory note

This note is not part of the circular but is intended to indicate its general effect.

This circular, which comes into force on 10 January 2020, is made under Regulation 58A of the Fisheries (Commercial Fishing) Regulations 2001.

This circular contains mandatory mitigation measures that apply to operators or masters of vessels using the fishing method of surface longlining. These measures are designed to mitigate the effect of fishing-related seabird mortality.

This circular replaces the Fisheries (Seabird Mitigation Measures-Surface Longlines) Circular 2018 to bring New Zealand into line with international regulatory requirements adopted by the Western and Central Pacific Fisheries Commission in December 2018

The revised measures mean that, when setting surface longlines, operators or masters of a vessel must—

- · use and configure streamer lines in accordance with the specifications in the circular; and
- either set lines at night or weight lines in accordance with the specifications in the circular; or
- use hook-shielding devices as a stand-alone mitigation option. The performance characteristics of approved hook-shielding devices are set out in the Schedule of the circular.

Streamer lines meeting the requirements of this circular are approved seabird-scaring devices for the purposes of Regulation 58(1) of the Fisheries (Commercial Fishing) Regulations 2001. The circular contains minor changes to the use of those lines to clarify existing requirements that—

- vessels under 35m in length can use long and short streamers or short streamers only; and
- vessels equal to or over 35m in length must use long and short streamers.

2019-go5782 13-12-2019 12:01

NEW ZEALAND GAZETTE

Corrigendum—Fisheries (Seabird Mitigation Measures—Surface Longlines) Circular (No 2) 2019 (Notice No. MPI 1111)

In the notice with the above title, published in the <u>New Zealand Gazette</u>, <u>8 January 2020</u>, <u>Notice No. 2020-go30</u>, the wording of clause 4 is incorrect. The correct wording for clause 4 is

4. Restrictions on use of surface longlines without hook-shielding devices

An operator or master of a vessel must not set a surface longline in New Zealand fisheries waters without using a hook-shielding device, unless at all times when the line is set, a streamer line that complies with clauses 6 to 8 is used, and either:

- a. the line is not set during the period of time between half an hour before nautical dawn and half an hour after nautical dusk on the same day; or
- b. the line is weighted in accordance with clause 5.

2020-gs124 09-01-2020 16-44



SLL Tori line Design Guide (vessels less than 35m)



Vessel Attachment

Attached to the vessel at least 6m above the surface of the sea in calm conditions, and as close to the stern as practically possible.

Streamer Aerial Section

The aerial extent section needs to be in the air (in calm conditions) for 75m, (not including the drag section). Streamers must be brightly coloured.

Within the first 15m streamers may be modified to minimise the risk of entanglement. Streamers must be fitted every 1m along the aerial extent.

<u>Long streamers:</u> Must reach the sea surface and be fitted at a max of 5m spacings.

Short Streamers: Must be spaced 1m apart and be a min of 1m long.

Drag Section

There needs to be enough drag to maintain 75m of aerial extent.

Braided rope or mono is best (less likely to tangle with setting gear rather than a float or a cone etc).

The drag material or 'object' needs to be designed and constructed to reduce entanglement with setting line i.e. streamline and seamless construction.

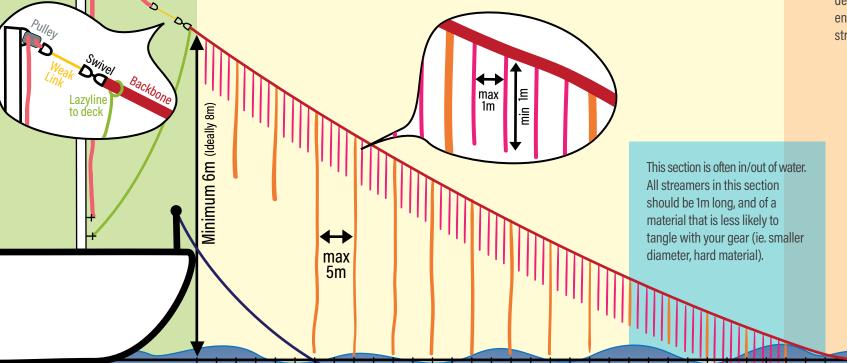
The join between the backbone and drag rope is a "catch point", ensure its streamlined, whip/tuck and wrap this join.

Drag "rope " section

Setting

80

Long Line



25

30

35

40

45

50

60

Recommended Materials:

- Main/Long Streamers: Heavier Rubber or Plastic Tubing
- Secondary/Short Streamers: Lighter weight tubing/tape etc

5_m

10

Tori Line Design and Build - Guiding Principles (vessels less than 35m)

Use the tori line design guide (over page) as a starting point to construct something that works for your vessel design and fishing practices.

A well-designed and deployed tori line reduces risk of seabird captures but only if it is used in conjunction with an effective sink rate.

Tori lines (streamer lines) must be used when setting surface long lines at any time and must achieve a minimum of 75m aerial extent.

To maximise performance, the tori line needs to be:

- Well-constructed, light weight, easy to deploy and retrieve. It should leave the vessel as high as possible and have plenty of drag. You will need spare parts and should have a spare line set up and ready to deploy if a major tangle or breakage occurs.
- The key to reducing tangling issues is to keep as much as possible of the streamer section in the air above your setting hook line. The drag section construction and materials need to be streamlined to reduce the risk of tangling. To do this, make sure the joins are whipped and taped to create a smooth surface so it is less likely to catch your gear.

Three Main Sections of a Tori line:

Vessel Attachment - This height is crucial in order to increase aerial extent

- Height: You are required to suspend the tori line from a point on the vessel at least 6m above the surface and as close to the stern as possible. Ideally it should leave the stern at around 8m+ above the waterline. If necessary, fit a pole to get extra height (for every 1m extra height above 6m you'll achieve about 8m more aerial extent).
- Weak link/ breakaway system: fit a weak link at the attachment point so that the tori line will break off at your weak link, or before the tori line 'spools off' your gear. Use a lazy line back to the deck so that you can regain control of the vessel end of the tori line if/when it breaks.
- If the tori line breaks or is lost, you need to redeploy another before setting any further gear.

Aerial Streamer section - Suitable materials make a difference

- Backbone: This is the main part of the tori line which supports the streamers, the aerial extent 'backbone section' needs to be 75m from the stern and you need to maintain a minimum 75m in the air. Choose a material that is light-weight, durable and braided as it twists less.
- Streamer materials: Must be brightly coloured, suitable/durable, use rigid, stiff, strong materials such as rubber tubing, tape, or cord attached in a way that prevents streamers from wrapping around the backbone and tangling with each other.
- Streamer placement: Must have streamers fitted every 1m along the aerial extent section, however within the first 15m the streamers may be modified to reduce tangling with the setting hooks.
- Long streamers: Often are heavier 5/6mm rubber tubing, placed at a maximum of 5m intervals, need to reach the water surface (in calm conditions) along the 75m aerial extent.
- Short streamers: Lighter weight 2-3mm plastic tubing, or strips of plastic-tape etc, placed at 1m intervals must be a minimum of 1m in length.
- Do a test deployment: Trim each longer streamer to suit your deployment height. In calm conditions the streamers must reach down close to the surface, but ensure most of the time they are in the air and not the water (streamers in water are more likely to tangle with setting hook line, reduce aerial extent and can even tangle birds).

Drag Section - Drag section is crucial in order to increase aerial extent

- Drag object: A length of rope or mono (or an object like a cone or float, or a combination of both) fitted to the end of the aerial streamer section and needs to provide enough drag to maintain the streamer section to the required 75m aerial extent.
- The connection between aerial section and drag section needs to be as seamless as possible to prevent tangling with the setting gear (braided rope or mono material twists less).
- Sea-trials have shown a tori line deployed from a height of 6m (at 6 knots) requires about 90m of 9mm braided (500L) drag rope to achieve 75m aerial extent. When deployed from a height of 8m, about 70m of 9mm braided (500L) drag-rope was required.

For more advice: Contact your local SLL Liaison Officer, listed in your Protected Species Risk Management Plan

Disclaimer:

This document has been produced to serve as a guide to the MPI Fisheries Regulations for Seabird Mitigation Measures Surface Longlines, for use by the fishing industry. This not intended to be nor should it be used, as a substitute to any statutory, regulatory, and/or non-regulatory requirements for Surface Longline fishing. Before acting in reliance, either wholly or partially, on any information contained in this document 'guide/design', readers should seek advice as to how current legislation, rules and regulations may affect their interests. It is the duty of the operator to know and understand the current Regulations that apply.

Small Vessel Surface Longline Crew and Vessel Safety Guide Line Weighting, tori lines and deck lighting

Background: There are methods and equipment used to reduce the risk of seabird captures. The information below is to be used as a guide to risk management for vessels and crew handling fishing gear using branch line weighting and deploying tori lines. It also considers issues with managing deck lighting; these methods have recognised hazards components. Vessel operators should have written safe operating procedures and crew training information covering all safety issues onboard including in relation to their seabird mitigation practices. Parts of this information below should be discussed with crew and included in the vessel owner's hazard Identification process. The creation of a vessel safety operating procedure should be considered also.

Past Safety Issues (lead swivels)

Line weighting snoods to reduce gear tangling and increase sink rate of snood and baited hook to reduce the risk of seabird captures has been carried out for many years. A fatality and several major injuries from recoiling weights on larger vessels in the mid-late 1990s occurred.

MNZ investigations found the following often contributing to incidents:

- inexperienced crew with little or no training
- excessive force when the hauling gear created high-tension recoil (vessel speed and/or using winch)
- crew hauling from vessel with high bulwarks so the angle of the snood lead-weight recoil was travelling towards the crew's upper body
- lack of personal protective equipment
- poor communications, between skipper, winch operator and crew

Hazards associated with line weighting near the hook

During a bite off or hook release when line is under tension the weight becomes a bullet-like projectile recoiling with significant speed and force towards the vessel. It is the stretchenergy within the monofilament line, coupled with high pulling force and vessel speed which results in the recoil speed and hence weight energy.

Lead swivels: A lead swivel released with 100kg of tension could recoil at speeds upto 200+km/h not allowing sufficient time for crew to react. Reducing the tension applied to the snood will reduce the risk of harm. The first point of impact is often in the proximity of the person or device (hauler) that is applying the tension to the snood.

Sliding leads (Lumo/Glo-leads, double lead branch-lines etc)

Sliding leads are a line-weighting device designed to improve safety by reducing the recoil force during a 'bite-off' by allowing the weight to either slide off the snood or move in opposite direction down the snood thus reducing the force and possible impact of the weight back to the vessel. While sliding-leads have proven to reduce recoil impacts (when compared to weighted swivels) they should however not be considered 'safe' and safety measures should be in place to reduce the risk of serious harm injury to crew.

Risk mitigation options: Look to replace some or the entire snood, mono with another material which won't have the re-coil properties of mono, lead weights will have greatly reduced pressures during fly-back situations. Other option is a short weighted section, of line use several smaller leads spread over 1 or 2mtr, or combine with a section of lead core braid etc.

Identify hazards associated with seabird mitigation devices and procedures, list what equipment and procedures can be used to reduce the risk of accident and or injury. Add these hazards to the vessel's hazard register as per MOSS requirements. Ensure controls are in place and all crew understand these and are briefed as to the hazards and any safe operational procedures you develop. We have listed some of these hazards and risks and ideas and how to minimise them as a guide to get you started.

Safety Guide: Line weighted Mono snoods (All weight types placed near hook mono)

Reducing the force or tension applied to the snood will reduce the risk of harm, keeping recoil trajectory away from the person's head and upper body. Ensure when using sliding leads you follow the manufactures recommendations.

- Crew on deck are immediately made aware when a large fish/shark is on the line, use a fighting line to play large fish, only experienced/trained crew should handle this line
- The vessel speed should be reduced to a safe-speed to reduce the force on the snood
- Hand landing of fish is recommended or set hydraulic haulers to low-pressure settings (i.e. no more tension than a person could apply)
- Locate lead blocks or pull the snood from a position to lower the impact zone (generally the lead with recoil to position of the applied force, i.e. don't pull from head height)
- Crimps fitted too tightly or general wear and tear on snoods can often result in mono breaking well within its 200kg expected breaking load
- Use the correct Personal Protective Equipment (PPE). Either use head protection or have area where you can haul/stand that's protected/shielded to isolate crew from recoiling weighted snood

Safety Guide: Tori line

Background, tori line safety incidents can occur when crew are deploying and or retrieving the device. A tangled tori line can require a lot of force to retrieve. Deployment is most often carried out from the stern and or from an elevated position, potentially placing the crew at risk from a fall from height and or a fall overboard.

- When deploying tori line crew should be under the watch (visual sight) of skipper or other crew
- If tori line is fitted to a high gantry or pole, etc use a lazy-line from deck level to deploy
- Ensure tori line backbone, streamers and drag object are properly stowed (bin, drum or reel etc) to reduce tangling during deployment and reduce risk of crew tripping and falling
- Around 10kg of drag is required to maintain 75m of the streamer section in the air, reduce vessels speed to a safe level for deployment and more so for retrieval to reduce the effort and force placed on the crew
- Tori lines are prone to tangle with the setting hook line, ensure there is system/procedures in place so when the tori line breaks free crew can maintain safe-control of the breakaway and have another spare ready to deploy.

Safety Guide; Deck lighting

Background, Reduced light emission on the stern deck and from spotlights astern reduces the risk of bird captures.

 Ensure general deck lighting is maintained for safe working on deck when shrouding, redirecting or turning off any lights which are attracting seabirds

.

HNNK REMOVAL FROM SFARIRIS



Visit www.acap.aq for more information



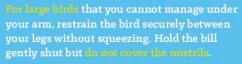
Bring bird aboard

If possible, slow or stop hauling and slow or stop vessel to release line tension. If practical, use a landing net to lift small birds on board, otherwise retrieve the bird on the line as safely and quickly as possible. When within reach, grab it by the bill. Never grab the wing.

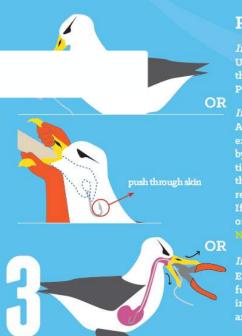


Restrain bird and hold securely

Carefully fold the wings into the bird's body. Wrap the bird in a towel/blanket (not too tightly) and cover the eyes if possible. Make sure the bird doesn't come into contact with oil on deck.



If the bird vomits, loosen hold on bill so the bird does not suffocate.



Remove the hook

If the hook is visible

Use pliers (or bolt cutters for large hooks) to cut through the hook shaft (or to flatten the barb). Pull the hook back out of the bird.

If the hook is swallowed and removal is possible A second person can find the hook position externally by feeling along the neck or internally by following the line to the hook. Gently force the tip of the hook so that it bulges under the skin of the bird (for large birds, this may be easier if you reach down the bird's throat and hold the hook). If you can get a good grip on the hook, push the tip of the hook though the skin and remove.

If hook removal is not possible

Either because removing the hook will cause further damage to the bird or the hook is too deeply ingested, cut the line as close to the hook as possible and leave the hook in the bird.



If the bird is exhausted or waterlogged

If possible, place in a ventilated box or bin in a quiet, dry, shaded place to recover for an hour or two. Otherwise, contain bird in a quiet dry area, away from oil. The bird is ready for release when the feathers are dry, bird is alert and able to stand.



Release the bird

If the bird is strong and mostly dry, release it onto the water (but clear of the vessel) immediately after hook removal. Having again first grabbed the bill, lift and slowly lower the bird onto the water letting go of the bill last.

lift and release the bird from the side of the vessel into the wind letting go of the bill at the same time. The bird may remain on the water for some time after release.

HOOK REMOVAL FROM SEABIRDS

Visit www.acap.aq for more information

Appendix 1. Hook release guidelines developed by the Agreement on the Cryation of Albatrosses and Petrels

Turtle Handling & Release and Crew Safety

To reduce risk:

- Large circle hooks (18/0) and setting deeper (below 40m) helps to avoid interactions with turtles.
- Do not comnece line setting near large congregations of marine mammals

General Pointers:

Do not land turtles on board if there is the possibility this will cause further injury and stress. Hauling animals to the deck using the line may result in increased tissue damage by the hook, possibly piercing the oesophagus or stomach or pulling organs from connective tissue and killing the animal.

Where practical use the DOC supplied line cutters to cut as much line as possible off an entangled animal or dehooking device to remove hooks from internally (e.g. throat hooked) or externally (flipper) hooked animals.

Where practical (small turtles) use dip-nets (long enough to reach the animal from the fish door) to retrieve small animals that require further treatment. For animals that can be brought aboard, land them gently to avoid damage.

If a turtle is caught by being hooked or entangled in your longline:

- If a turtle is noticed on the line, slow down to reduce trauma to the animal.
- If the turtle is too large to bring on board, bring it as close to the boat as possible without putting strain on the line then cut the line as close to the turtle as possible. Don't jump in the water to untangle the line.
- Turtles may appear lifeless but are not necessarily dead they may just need time on board to recover.
- If the turtle is small use the supplied dip net to lift on board the boat. Make sure you don't use a gaff or pull on the line, or grasp the eye sockets of the turtle.
- Gently place a piece of round wood (a broom handle) in the turtle's mouth so that it cannot bite you bites can be nasty.
- If the hooks barb is visible use bolt cutters to cut off the point. Then remove the two parts of the hook separately.
- If the hook is not visible remove as much line as possible without pulling too hard. Then cut the line close to the turtle.
- If the turtle is active then you can carefully release it after noting and recording any tag numbers
- If the turtle is not active then it may have water in its lungs. Raise the rear flippers by 20cm while it is recovering.
- Place the turtle in a shaded location on the boat. Cover the turtle's body with wet towels, avoiding the nostrils. Spray the towels with salt water, again avoiding the face.
- Keep the turtle on board for at least 4 hours. Assess its recovery it can be released when it is lively again this can take up to 24 hours.
- Carefully return the turtle to the water when it has recovered. Release it headfirst while the boat is stopped and the propellor stopped.
- Ensure the turtle is well clear of the boat before making way again.
- Report the turtle capture in MPI Non-Fish & Protected Species Catch Return

Turtle realise and handling equipment:

Gloves, bolt cutters, A line cutter and Optional- A dehooker

Turtle MPI 'NFPSCR' Reporting Codes; Green turtle – GNT / Loggerhead Turtle – LHT / Leatherback turtle-LBT

Fur Seal Handling & Release and Crew Safety

To reduce risk:

• Do not comnece line setting near large congregations of marine mammals

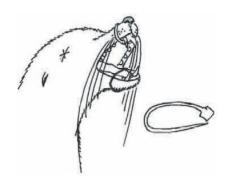
Handling Dead Marine Mammals:

- The entire body of any dead mammal must be returned to the sea,
- Mutilating or taking any part from the body of a marine mammal and keeping it is a serious offence in New Zealand.

Marking and Returning Dead Mammals:

Any marine mammal returned to the sea must be marked with twine. The purpose of this is to avoid the same animal being counted twice if its body is caught again.

(This can and does happen especially on othe/trawl fishing grounds. When marking a dead fur seal: simply use either a cable tie or twine fixed firmly behind the lower or upper jaw canine teeth prior to returning to the sea.



Handling Marine Mammals – Crew Health & Safety:

Fur seals carry a number of infectious bacteria that can be dangerous to humans. You must be very careful with regards to hygiene practices when handling live or dead animals to avoid contamination or infection.

Always:

- Wear waterproof gloves and waterproof protective clothing
- Avoid unnecessary contact with blood, urine or faeces or other body fluids
- If you are bitten or grazed you must wash and disinfect the wound immediately and treat with antibacterial ointment such as Betadine.
- After handling any animal wash your hands and forearms with soap or disinfectant, wash your deck and gear

Seal realise and handling equipment:

Gloves, bolt cutters, A line cutter and Optional- A dehooker

MPI 'NFPSCR' Reporting Codes; Fur Seal - 'FUR'



Protected Species Information for Commercial Fishers Täkoketai/Black Petrel

Where are black petrels?

Breeding location: Tākoketai/Black petrel breed only in New Zealand. There are two remaining breeding colonies found in the Hauraki Gulf on Aotea/Great Barrier Island and Te-Hauturu-o-Toi/Little Barrier Island.

Breeding time: Tākoketai/Black petrel breed from October through to June each year. When they are not breeding, they migrate to South American waters to forage and feed.

Foraging distribution: Tākoketai/Black petrels forage and feed in the entire inshore area of the East Coast of the North Island from Mahia to Kaitaia. Their distribution is focused on deeper water near the continental shelf, with concentrations found closer to Great Barrier Island where they breed. Offshore they extend and are found on the East and West of the North Island.



How to recognise black petrels

Tākoketai/Black petrels are black or very dark brown, with black feet. The bill is pale yellow with a black tip and a distinctive double tube nostril on top.

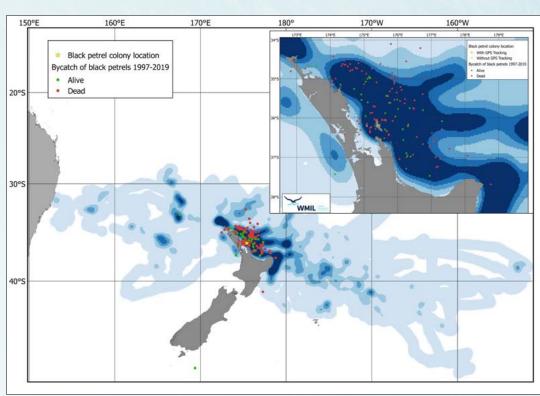
Distribution Map:

The distribution map shows where Tākoketai/black petrels are more likely to be found during the breeding season and where bycatch has occurred.

The dark blue areas indicate where numbers are most concentrated (hot spots) for foraging and feeding. These areas are also where most captures have been reported.

This data was accumulated from 1997 to 2019 breeding seasons.

It is not illegal to capture seabirds. IT IS ILLEGAL not to report captures of seabirds.



For more information on what to do when you have caught a bird, please refer to your Operational Procedures for Protected Species Risk Management document.





Fact Sheet 1/4

1

Conservation and management of New Zealand sharks

Over 113 species of sharks have been reported in New Zealand waters. Sharks are now known to be an important part of marine ecosystems and New Zealand's *National Plan of Action – Sharks* (available at www.mpi.govt.nz) recognises this.

SHARK FINNING BAN

From 1 October 2014, it is ILLEGAL TO REMOVE THE FINS FROM A SHARK AND DISCARD THE BODY OF THE SHARK

AT SEA. The Fisheries (Commercial Fishing) Regulations 2001 require that any shark fins landed must be naturally attached to the body of the shark (see fact sheet 2).

The Regulations provide exceptions to the "fins attached" requirement for eight species of shark. These exceptions take two forms, the first is for blue shark and it allows the fins to be removed from the body but requires that the fins be attached to the trunk after processing (before landing). The second exception is for seven other QMS species, for which the fins may be landed separately but in accordance with a gazetted ratio (see fact sheet 3).

The management of individual shark species depends on Note that you are not required to land any fins.

Approach	Species	
Fins naturally attached	Spiny dogfish All non-QMS species	SPD
Fins artificially attached	Blue shark	BWS
Ratio	Elephant fish Ghost shark Mako shark Pale ghost shark Porbeagle shark Rig School shark	ELE GSH MAK GSP POS SPO SCH

the scale of catch, as well as other factors such as how vulnerable they are to fishing. You are likely to come across the following categories –

QUOTA MANAGEMENT SPECIES

–Blue shark	BWS
–Elephant fish	ELE
–Ghost shark	GSH
–Mako shark	MAK
–Pale ghost shark	GSP
–Porbeagle shark	POS
–Rig	SP0
–School shark	SCH
-Spiny dogfish	SPD

Nine species of shark are managed under the Quota Management System (QMS). Catches of these species must be retained like any other QMS species, unless they are listed on Schedule 6 of the Fisheries Act 1996. A separate fact sheet is available explaining the conditions under which Schedule 6 applies and providing information on the appropriate recording of Schedule 6 releases (see fact sheet 4).

NON-QUOTA SPECIES

The remainder of shark species are not managed under the QMS. Reporting obligations still apply for these species, but they do not have to be retained and landed.

You are encouraged to use best practice handling methods to release sharks alive wherever possible.

FOR MORE INFORMATION

Fact sheet 2 – Landing sharks with fins attached

Fact sheet 3 – Landing shark fins subject to a ratio

Fact sheet 4 - Requirements for returning sharks to the sea (Schedule 6)

A copy of the regulations is available at: http://legislation.govt.nz

The content of this Fact Sheet is information only. The requirements are set out in the Fisheries (Commercial Fishing) Regulations 2001 and the *Fisheries* (Shark Fin to Greenweight Ratios) Circular 2014. The Ministry for Primary Industries does not accept any responsibility or liability for any error of fact or opinion, nor any consequences of any decision based on this information.

Conservation and management of New Zealand sharks

 PROTECTED SPECIES – catches of these species both in the EEZ and on the high seas cannot be retained by law, but all catches must be reported on the "non-fish species or protected fish species catch reports":

-Basking shark	BSK
-Great white shark (White pointer shark)	WPS
-Oceanic whitetip shark	OWS
–Deepwater nurse shark	ODO
–Whale shark	WSH

CITES-LISTED SPECIES NOT OTHERWISE PROTECTED:

 Porbeagle shark
 Smooth, scalloped and great hammerhead sharks
 Shortfin mako shark

MAK

Porbeagle, hammerhead, and more recently mako sharks have been listed in Appendix II of the Convention on International Trade in Endangered Species. Any landings from the high seas now require a "CITES introduction from the sea" permit before bringing any sharks into NZ fisheries waters. Exports of these sharks or their products now requires a "CITES export/re-export" permit.

Note that sharks caught in the New Zealand EEZ but not exported are not subject to CITES regulation. The CITES documentation process is administered by the Department of Conservation. For more information see http://www.doc.govt.nz/cites





Fact Sheet 2/4

2

Landing sharks with fins attached

The Fisheries (Commercial Fishing) Regulations 2001 require that for all non-quota management system (QMS) species, spiny dogfish, and blue shark, any fins to be landed must be attached to the remainder of the shark.

Blue shark

If you are planning to land the fins of any blue shark they must be attached to the trunk of the shark.

If you are retaining blue shark fins, you may land the shark either green (whole) or as the principal product state of "SHARK FINS ATTACHED" (SFA). This state is described as the shark being processed to the dressed state (see Figure 1 over the page) and then the fins re-attached by some artificial means. This includes (but is not limited to) stitching them on, or storing both the dressed trunk and the fins in the same bag (one shark per bag).

This rule will allow the small fishery for blue shark meat to continue, by allowing processing at sea to maximise the value of the fish, but still allowing for retention of the fins.

Note that you are not required to land the fins; you may land a different principal product state of blue shark. It is only if you wish to retain the fins that you must land it in either the "SHARK FINS ATTACHED" state or green. You are allowed to return unwanted blue shark to the sea under Schedule 6 provisions (see fact sheet 4).

Spiny dogfish and all non-QMS species

For spiny dogfish and non-QMS species, any fins landed must be **naturally** attached to the remainder of the shark. This means that there must be some portion of uncut skin connecting the fins to the body. If you are retaining fins, you may land these sharks either as green (whole) or as the principal product state "SHARK FINS ATTACHED". This is defined for spiny dogfish and all non-QMS species as the fish being processed to the headed and gutted state with the primary fins naturally attached (i.e. the pectoral fins, dorsal fins and some or all of the caudal (tail) fin).

You may cut the fins to allow them to be folded flat against the fish, or to allow for bleeding, but they must remain naturally attached to the trunk of the shark if they are being landed.

Note that this does not preclude landing another primary landed state. It is only if you wish to retain the fins that you must land it in the "SHARK FINS ATTACHED" state.

Non-QMS species can also be legally returned to the sea (dead or alive) if you don't wish to retain them (reported on disposal reports under disposal code "D"). Spiny dogfish can be returned (dead or alive) and reported on disposal reports under disposal code "M".

FOR MORE INFORMATION

Fact sheet 1 – Conservation and management of New Zealand sharks

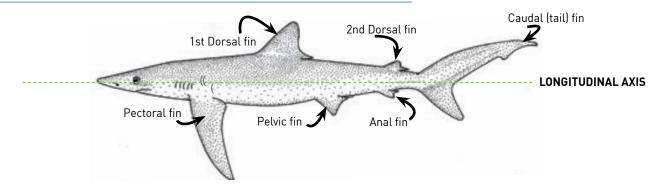
Fact sheet 3 - Landing shark fins subject to a ratio

Fact sheet 4 - Requirements for returning sharks to the sea (Schedule 6)

A copy of the regulations is available at: http://legislation.govt.nz

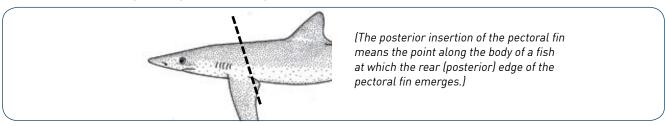
The content of this Fact Sheet is information only. The requirements are set out in the Fisheries (Commercial Fishing) Regulations 2001 and the Fisheries (Shark Fin to Greenweight Ratios) Circular 2014. The Ministry for Primary Industries does not accept any responsibility or liability for any error of fact or opinion, nor any consequences of any decision based on this information.

FIGURE 1:BLUE SHARK (BWS) DRESSED (DRE)

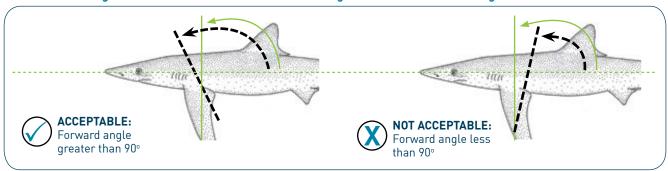


The body of a fish from which the head, gut and fins have been removed with:

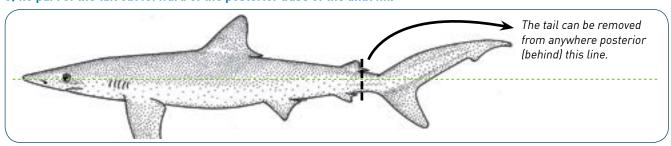
1) the anterior cut being a straight line passing immediately behind the posterior insertions of both pectoral fins.



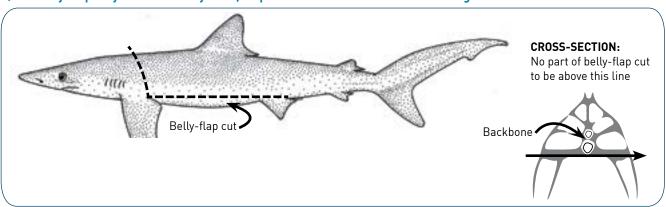
2) the forward angle of the anterior cut not less than 90 degrees in relation to the longitudinal axis of the fish.



3) no part of the tail cut forward of the posterior base of the anal fin.



4) the belly-flap may be removed by a cut, no part of which is dorsal to the cartilaginous backbone.







Fact Sheet 3/4

Landing shark fins subject to a ratio

The Fisheries (Commercial Fishing) Regulations 2001 prohibit shark finning and require that any shark fins landed must be naturally attached to the remainder of the shark (or artificially in the case of blue shark). However, an exception to the fins attached requirement is provided for seven QMS species to allow at-sea processing to continue.

These seven QMS species are:

	a open	
•	Elephant fish	ELE
•	Ghost shark	GSH
•	Mako shark	MAK
•	Pale ghost shark	GSP
•	Porbeagle shark	POS
•	Rig	SP0
•	School shark	SCH

For these species, the weight of all fins landed must not exceed a specified percentage of the greenweight of the shark. For example, if the ratio for a particular species is set at 3.5, if sharks are landed that have a total greenweight of 100 kgs, the fins of that species landed cannot weigh more than 3.5 kgs. They may weigh less than that. The ratios will be applied to landings on a trip-by-trip basis.

The species which may have fins landed seperately, the specific ratios for each species, and the "primary fins" which have been used to set the ratios are defined in a *Shark Circular* which can be found at: www.mpi.govt.nz

Note that landing other fins may result in being over the gazetted ratio for a species.

How will the ratio work?

For species where you normally process the catch at sea and keep both a trunk (for example, dressed) and also

the fins, not a lot should change, but you will need to **STORE AND LAND THE FINS SEPARATELY BY SPECIES**. Fins must be landed wet. This will be a legal requirement from 1 October 2014, and will allow monitoring to make sure you are not retaining any more shark fins than the trunks they come from.

Future reviews of ratios will be based on direct sampling over the coming years.

For the main inshore shark species, the ratios have been set so that if you follow normal processing practices, you shouldn't exceed the ratio with your landings of shark fins. The ratios for each species have been set based on statistical analysis of at-sea sampling data. However, you will need to monitor your landings more closely so you can be confident you aren't exceeding the weight ratio, especially as you become familiar with the new rules.

FOR MAKO AND PORBEAGLE, there are some differences in cut and which of the fins are retained across different fleets. THE RATIO IS SET BASED ON RETAINING THE WHOLE TAIL (CAUDAL) FIN. This has been done to try and avoid any accidental noncompliance (which could occur if the ratio was set lower), but you will still

need to monitor your landings more closely to ensure you don't exceed it, especially if your vessel normally lands the whole tail. You can choose to land just the lower tail lobe. Close monitoring will occur to make sure no high-grading is occurring within the ratio.

Over the next two years, there will be ongoing monitoring and continued data collection to ensure that the ratios are set appropriately. Monitoring and enforcement will differentiate between slight variation around the ratios, which is to be expected, and a consistent trend of too many shark fins compared to shark bodies.

It is your responsibility to ensure you are within the ratio, but if you think the ratio is set incorrectly for a particular species, talk with MPI and/or a commercial stakeholder organisation such as Fisheries Inshore.

If you land any fins, you will need to report the actual weight of the fins for each species in the appropriate part of landing reports.

Retaining the fins from one shark and the trunk from a different shark (high grading) is an offence under the shark finning regulations.

FOR MORE INFORMATION

Fact sheet 1 – Conservation and management of New Zealand sharks

Fact sheet 2 - Landing sharks with fins attached

Fact sheet 4 – Requirements for returning sharks to the sea (Schedule 6)

A copy of the regulations is available at: http://legislation.govt.nz

The content of this Fact Sheet is information only. The requirements are set out in the Fisheries (Commercial Fishing) Regulations 2001 and the *Fisheries (Shark Fin to Greenweight Ratios) Circular 2014.* The Ministry for Primary Industries does not accept any responsibility or liability for any error of fact or opinion, nor any consequences of any decision based on this information.





Fact Sheet 4/4



Requirements for returning sharks to the sea (Schedule 6)

Schedule 6 of the Fisheries Act 1996 sets out QMS species that may be returned to the sea, so long as the specified conditions are met.

As part of the regulatory package to ban shark finning, MPI has made changes to Schedule 6 for several species of shark to allow them to be returned to the water. This provides a legal option for fishers who accidentally catch a shark for which they have no market.

In many cases, the best option is to try and avoid catching the sharks altogether if they are not marketable species. There may be different ways to avoid shark catches, depending on the species and the fishery. Some research is currently being done for surface longline fisheries.

Schedule 6 returns to the sea provide another option if you have already caught the shark. This fact sheet has been produced to explain the Schedule 6 provisions for shark species and detail the associated reporting requirements.

Live release only

The following species of sharks may only be returned to the sea **ALIVE**, if they are **LIKELY TO SURVIVE** and returned as soon as practicable:

Rig SPOSchool shark SCH

Any returns of these species must be reported on disposal reports under disposal code "X" and will not be counted against your Annual Catch Entitlement (ACE).

Live or dead - pelagic sharks

For the following species:

Mako sharkPorbeagle sharkBlue sharkBWS

Sharks may be returned to the sea **ALIVE**, if they are **LIKELY TO SURVIVE** and returned as soon as practicable. Any sharks returned to the sea **ALIVE** must be reported on disposal reports under disposal code "X" and will not be counted against ACE.

As of 1 October 2014, these sharks may also be returned to the sea if they are **DEAD** or **UNLIKELY TO SURVIVE** provided they are correctly reported. Any sharks returned to the sea dead or unlikely to survive must be reported on disposal reports under disposal code "Z". These returns will be counted against ACE. You need to accurately estimate the weight of the sharks discarded this way.

Live or dead - spiny dogfish

Spiny dogfish may be returned to the sea either live or dead. There is no differentiation between live and dead fish. Any spiny dogfish returned to the sea must be reported on disposal reports under disposal code "M" and will be counted against ACE.

FOR MORE INFORMATION

Fact sheet 1 – Conservation and management of New Zealand sharks

Fact sheet 2 – Landing sharks with fins attached

Fact sheet 3 - Landing shark fins subject to a ratio

A copy of the regulations is available at: http://legislation.govt.nz

The content of this Fact Sheet is information only. The requirements are set out in the Fisheries (Commercial Fishing) Regulations 2001 and the *Fisheries* (Shark Fin to Greenweight Ratios) Circular 2014. The Ministry for Primary Industries does not accept any responsibility or liability for any error of fact or opinion, nor any consequences of any decision based on this information.

Requirements for returning sharks to the sea (Schedule 6)

SUMMARY OF OPTIONS BY SPECIES OF SHARK

SPECIES		LIVE RETURN	Destination Code	Balanced with ACE	DEAD RETURN	Destination Code	Balanced with ACE
School shark	SCH	Yes	X	No	Only observer- authorised discards	J	Yes
Rig	SPO	Yes	X	No	Only observer- authorised discards	J	Yes
Mako shark	MAK	Yes	X	No	Yes	Z	Yes
Porbeagle shark	POS	Yes	X	No	Yes	Z	Yes
Blue shark	BWS	Yes	X	No	Yes	Z	Yes
Spiny dogfish	SPD	Yes	M	Yes	Yes	M	Yes