

TEN GOLDEN RULES FOR COASTAL TRAWLING TO SAVE PROTECTED SPECIES

1. Ensure your vessel has onboard:
 - a. The vessel's Protected Species Risk Management Plan (PSRMP),
 - b. The Coastal Trawling Operational Procedures, and
 - c. A map of areas where trawling is prohibited.
2. Hold all fish waste immediately before or during shooting/hauling and batch discharge away from the path of warps if/when towing.
3. Always have fit & proper bird scaring device/s onboard.
4. Always deploy mitigation devices if there is any risk to seabirds (when birds are present or when discharging fish waste near warps).
5. Ensure the warps are not overly greased; all warp splices are 'wrapped'; any sprags are removed or 'whipped'; and warp splices are not near the water's surface.
6. Minimise time trawl gear is at/near the surface. Where possible, conduct gear maintenance/repairs while net is on board.
7. Remove stickers from net before shooting especially small fish and squid.
8. Reduce unnecessary deck lighting
9. Crew know and follow safe handling procedures for captured animals (dead or alive)– return protected species to sea quickly and treat with care.
10. Report all protected species captures by ERS or in the Nonfish Protected Species Catch Return (NFPSCR) logbook and send to FishServe. **It is illegal not to report.** Report protected species trigger level captures to Liaison Officer.

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).
- 7.** 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: doc.govt.nz/our-work/conservation-services-programme/csp-resources-for-fishers/a-fishers-guide-to-new-zealand-seabirds/
- A fuller set of invertebrate NFPS material is available at: fs.fish.govt.nz/Doc/23020/AEBR_86.pdf.ashx
- A coral guide is available at doc.govt.nz/Documents/conservation/marine-and-coastal/fishing/coral-id-guide-updated.pdf

South Island Coastal Trawler

Operational Procedures - Protected Species Risk Management

Version 1.5



Fisheries Inshore New Zealand Ltd

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Background, Rationale and Purpose

Background and Rationale – Seabirds and Marine Mammals

The South Island coastal vessels (under 28 m LOA targeting inshore stocks) trawl fishery has, like the offshore trawl fleet, had observed captures and risk assessments of seabirds that require a structured approach to mitigation of that risk.

The characteristics of coastal trawl fishing which increase the risk of incidental captures of seabirds are:

- warps towing from blocks outboard of the vessel hull
- operations requiring extended periods during which the gear is on or near the surface
- feed attraction from high levels of fish waste - offal and discards
- fishing grounds and seasons in some areas well known for high seabird numbers.

Marine mammals such as fur seals or dolphins may also be captured in this or other inshore trawl fisheries. Common, dusky, bottlenose and Hector's dolphins inhabit many parts of the coastal waters where trawling occurs, as do fur seals. Sea lions also occur in some areas.

These are species of significant importance to the community, they have real tourism value in the regions and some are rare (i.e. have very small and / or threatened populations). The Government will be responsive in ensuring that undue impacts are not occurring on these species. It is in the best interests of the coastal trawler fleet as users of the coastal space to take all reasonable steps to understand, acknowledge and mitigate impacts on protected wildlife encountered.

Seabirds National Plan of Action (NPOA) and Risk Assessment

The NPOA - Seabirds is part of an internationally visible management framework, a requirement of the Agreement on the Conservation of Albatrosses and Petrels (ACAP) members (of which NZ is one) and linked to United Nations Food and Agriculture Organisation processes and guidelines. The NPOA sets out objectives for the next five years to guide management of risk to seabirds in New Zealand fisheries. This management comes mostly from MPI with support from DOC and industry bodies such as Southern Inshore Fisheries Management Co. (SIFMC) and Fisheries Inshore NZ (FINZ).

The Risk Assessment referred to in the NPOA is a useful guide to assess the impact of potential fisheries mortalities on 70 of the seabird species that breed in the New Zealand region. A risk 'factor' for each seabird species estimated as the ratio between the estimated annual potential fatalities due to fisheries and the number that the population can withstand and stay healthy or grow. The risk ratios are assessed on a fishery by fishery basis where data is sufficient to allow this. A key part of the NPOA -Seabirds is the objective to move seabird species to lower risk categories (so the populations are not threatened) and a long-term objective is to have negligible impact on seabirds (i.e. few if any seabirds are killed). Currently 13 seabirds are assessed to be in a risk category that warrants prompt and considered attention. Three of these species have been observed captured by the SI coastal trawl - Salvin's and white-capped albatross in particular, and also Buller's albatross (these are the most commonly seen mollymawks around your vessels – the term mollymawk or albatross are both applied to these birds).

Other albatross species and several other seabirds have also been observed caught – sooty shearwaters (muttonbirds) most often, but also a variety of smaller petrels, shags and shearwaters. While some seabird populations are identified as being at higher risk than others, they are typically all caught in similar ways – on trawl warps, or in trawl nets. Therefore, mitigation measures that reduce the risk of capturing one species usually work to reduce the risk of capturing others as well.

Marine Mammals

NZ fur seals are the marine mammals most frequently observed caught. Common, Hector's and other coastal dolphin species have also been reported captured by coastal trawlers. Around New Zealand, there are Government management regimes in place for Hector's and Maui dolphins in the form of controls on setnetting and trawling in certain areas.

Some marine mammals, e.g. Hector's dolphins (and more recently NZ sea lions), are also the focus of Threat Management Plans –TMPs. (Maui dolphins are also in a TMP but do not occur around the South Island). Similar to seabirds, Government evaluates the risk that commercial fishing presents to marine mammals and is expected to do this on an ongoing basis.

Around the South Island the most likely risk of interactions is with fur seals, common, Hector's or dusky dolphins depending on where fishing is occurring. While sea lions have not been reported caught inshore to date, they are captured in offshore fisheries, vulnerable to trawl nets and occur around the Otago and Southland coasts.

Purpose

The purpose of the South Island Coastal Trawl Operational Procedures is to ensure:

1. risks of seabird and marine mammal mortalities are mitigated by reducing the risk of capture
 2. that by implementing this OP and associated vessel specific Protected Species Risk Management Plan (PS-RMP) the vessel crew is actively involved in seabird and marine mammal mitigation measures and undertakes improvements through ongoing on board observation, review and improvement processes, i.e. **Look – Think – Act**
 3. that all vessels in the fleet have the same information as well as robust and documented systems to manage protected species risk and therefore are working together as a fleet to manage the risks
 4. vessels report as required and as accurately as possible all capture events (MPI reporting) as well as any event triggers required by the PSRMP
 5. systems are able to stand up to audit or review by vessel owners, skippers or Government.
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Risk

Seabirds and marine mammals are attracted to offal and discards from the vessel or whole fish in the trawl net or fish disturbed by the passing of the net. Once attracted, they are at risk of injury from the gear or drowning in it.

Risk to seabirds and marine mammals is driven by these two factors and how they interact:

1. Food attractant: offal, waste, discards from the vessel and fish in the trawl
2. Fishing gear:
 - a. **The warps (seabirds)**: in particular where the warps enter the water and birds collide with or are struck by them.
 - b. **The trawl net (seabirds and mammals)**: in particular when gear is on or near to the surface as this increases the risk of interactions with marine mammals and seabirds that may easily enter into the trawl mouth and become trapped and drown

Managing the risks associated with these parts of the fishing gear at a vessel level will help minimise interactions and reduce incidental captures. It is worth remembering that mortalities can occur even if no body is landed. For example, seabirds may strike trawl warps and fall injured or dead into the water, rather than coming up on the gear during hauling.

Note that lights at night can also attract seabirds to vessels. While seabirds can be injured or killed by impacting fishing vessels, deck strikes are not considered to be fishing-related mortalities. However, the risk of such strikes occurring can be managed by minimising deck lighting to just what is necessary for safe operations.

Managing Risk Associated with the Coastal Trawl Fishery

| RISK MANAGEMENT | | |
|---------------------|---|--|
| RISK ITEM | RISK FOR | WAYS TO MANAGE RISK |
| WARP CAPTURE | Seabirds (mostly albatross) | <ul style="list-style-type: none"> Stopping or controlling (batching) offal/waste discharge while warps are in the water will greatly reduce or even eliminate interactions - this is the PRIMARY risk reducing measure Fit and proper mitigation devices (tori lines, bafflers, deflectors or scarers), well designed, and implemented will serve to keep seabirds away from the warp danger area Ensuring warp splices are 'wrapped', and any sprags removed and 'whipped' |
| NET CAPTURES | Seabirds (mostly petrels, shearwaters, shags and penguins) & Marine Mammals | <ul style="list-style-type: none"> Net captures occur during both shooting and hauling of the net. Therefore, it is important that the vessel prevents offal discharges both before and during hauling and shooting. Minimising the amount of time the net is on the surface will also reduce this risk. So, getting the gear to fishing depth and later aboard quickly is important. Avoid trailing the gear in the water while mending. Avoiding setting the net when large numbers of birds or mammals are present Ensuring that the net is clean of stickers and other food attractants when being set |

Regions and Periods of Risk for Seabird & Marine Mammal Species

| RISK MANAGEMENT | |
|--------------------------------------|---|
| RISK ITEM | MAIN SPECIES AT RISK DUE TO OBSERVED FISHERY INTERACTIONS PLACE, TIME and RISK PROFILE |
| SEABIRDS Mollymawks | <ul style="list-style-type: none"> Salvin's albatross (notable for grey head and yellow beak) <ul style="list-style-type: none"> Chatham Rise and east coast South Island during spring, summer and autumn Second highest risk seabird in NPOA Risk Assessment; Threat classification nationally critical, aggressive feeder around vessels White-capped albatross (bigger, and whiter head than Salvin's) <ul style="list-style-type: none"> Mostly Southland and West Coast but around all NZ coast at times including Cook Strait, year round but especially spring/summer Aggressive feeder around vessels and most frequently caught albatross across all fisheries Southern Buller's albatross (looks similar to Salvin's, much brighter yellow stripe on the top and bottom of beak) <ul style="list-style-type: none"> Southland, Fiordland and east coast South Island, year-round but especially spring/summer Another aggressive feeder around vessels, relatively small population, 5th in NPOA Risk Assessment |

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|------------------------------|---|
| <p>Other birds</p> | <ul style="list-style-type: none"> • Sooty shearwater (mutton bird or titi) <ul style="list-style-type: none"> – East coast especially autumn during post breeding migration – Strong diver and aggressive feeder around vessels at times, third most frequently caught species in NZ, usually in the trawl • Penguins and shags <ul style="list-style-type: none"> – Coastal waters near their breeding colonies or roosts onshore – Can forage well out to sea but usually nearshore (yellow eyed penguins do forage further in 50-70m depth range or deeper at times) – Some species, e.g. yellow-eyed penguin, are high risk and some e.g. Foveaux shag, have very small population. These species, being land-based, also suffer other threats. – Shags that form “rafts” i.e. large flocks on the sea can pose a risk and there has been one event where a large number (34) of spotted shags were caught in a trawl in a single shot |
| <p>MARINE MAMMALS</p> | <ul style="list-style-type: none"> • NZ fur seal <ul style="list-style-type: none"> – Coastal waters, year round – Fur seals can be distinguished from sea lions by their whiskers. Fur seal whiskers are long, and sweep back to the seal’s ears. • NZ sea lion <ul style="list-style-type: none"> – Otago, Southland and Stewart Island coastal waters, year round – Sea lions have shorter whiskers, unlike fur seals (above). • Dolphins <ul style="list-style-type: none"> – Some species threatened or with small populations <p>Found in coastal waters and bays, year round notably:</p> <ul style="list-style-type: none"> – Hector’s dolphin – East Coast, Southland and West Coast, often in shallow water and off river mouths – Dusky dolphin - more frequent on East Coast – Common dolphin – around the South Island though more prevalent in north |

Risk Management Plan Responsibilities

Responsibilities of Skipper/Master

The vessel skipper will:

- *Ensure all crew are briefed on these OPs, the vessel’s PS-RMP and fully understand all the actions required*
- *Ensure batch discharge equipment is available and the methods are understood and followed by crew (this is the paramount risk measure for seabirds)*
- *Deploy mitigation measures (fish waste management and warp device) whenever seabirds are at risk from warps*
- *Deploy and/or adjust mitigation measures to best suit weather, fishing and processing conditions to minimise risk of seabird interactions*

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- *Regularly inspect warps and ensure they are spliced using methods that do not leave sprags (i.e. splices should be wrapped and sprags whipped)*
 - *Be aware that when the vessel is turning this may further expose a warp wire in line with any offal discharge and will increase likelihood of warp strike*
 - *Be aware of seabird/mammal activity around the vessel, assess risks and take those actions needed to minimise risk*
 - *Display a copy of “The 10 Golden Rules for Coastal Trawl Vessels” on the bridge*
 - *Ensure correct reporting (MPI) and that trigger reports are sent promptly to the Liaison Officer identified on your PS-RMP.*
 - *Ensure crew are meeting their responsibilities listed below.*
 - *Address any deficiencies in implementation of the PS-RMP as noted by any observer*
 - *Address the effectiveness and content of the PS-RMP if protected species captures exceed the triggers*
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Responsibilities of Vessel & Crew

This crew must:

- Operate an offal control (batching) system to ensure **no continuous or uncontrolled discharge of offal and fish waste ever occurs when towing the fishing gear – warp risk**
 - **Not discharge offal and fish waste prior to or during hauling and shooting periods to reduce bird numbers in the net danger zone**
 - Hauling: This period is defined by when the doors reach the surface through until the codend is on deck.
 - Shooting: This period is from when the codends are off the deck until the doors are below the surface.
 - Shoot and haul the net as quickly as practicable and always seek to minimise the time the net remains on or near the surface
 - Carry and deploy a fit and proper bird scaring device as described in vessel’s PS-RMP and spare parts to rebuild/replace if damaged or lost
 - maintain a watch of seabird and mammal activity around the vessel and advise the skipper as appropriate when it is clear there is risk that requires action
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Reporting Protected Species Captures

Trigger Limits & Vessel Action Trigger Limits are the FINZ real time reporting ‘threshold’ system. Once a ‘trigger’ is reached, the Liaison Officer, FINZ, 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.

Real Time Reporting Triggers Triggers are shown on your PSRMP.
The contact details of your Liaison Officer are also shown there.

Trigger 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.

MPI Reporting Requirements

MPI Reporting Requirements – All protected species captures

It is not illegal to accidentally capture protected species while commercial fishing, **but it is illegal to fail to report the capture**. It is important that all captures and mortalities are reported accurately. All protected species (captures or deck strikes, see below) dead or alive (then returned to the sea) must be recorded in the Non-Fish Protected Species Catch Return form (NFPSCR) or the Electronic Logbook equivalent.

MPI observers may decide to keep some protected species caught for autopsy. They are permitted to do so. The vessel may only do so if it holds a DOC permit.

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)*

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

NFPSCR Codes, Species Identification and legbands/tags

Seabirds

- Use the XAL (unidentified Albatross/mollymawk) and XXP (unidentified Petrels & Shearwaters) species codes if you are not 100% sure of the species identification. If you are 100% sure, use the species individual codes supplied by MPI.
- Record any leg band numbers on the form, these are important and FINZ urges skippers to get a record of any leg bands. Take a photo if possible and send to your Liaison Officer.

Marine mammals

If you are able to identify marine mammals, report these captures at species level. If you are unsure, use generic codes. You may wish to take photos of the head, whole body and any distinguishing marks on a marine mammal. Do this without any crew or vessel features in the picture. Share these photos with your Liaison Officer, who may identify the marine mammal for you.

Animal Handling/Release and Crew Safety

Release Alive

Every care should be taken to release 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 post incidental capture is an offence.

| | |
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| Birds | <ul style="list-style-type: none"> • Keep the bird calm by covering the head with a cloth. Use two crew; one to support the bird, while the other frees the gear from the bird. Use gloves and eye protection (beware large birds can inflict a nasty bite). • Carefully isolate the tangled meshes. Peel the netting back over the tail, feet, and then the wings, while holding the bird firmly. Remove the head from meshes last. • When freed, place the bird gently back into the water. If the bird is waterlogged keep it in a safe place, such as an empty fish case, until it has recovered. |
| Marine Mammals | <ul style="list-style-type: none"> • 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. |
| Returning Dead Seabirds and Marine Mammals to the Sea | <p>The entire body of any dead protected species must be returned to the sea, unless a MPI observer onboard the vessel directs the skipper to, or they themselves keep it or the skipper has been advised otherwise by DOC or MPI. Usually they only keep seabirds. Taking any part and keeping it or cutting or mutilating the body of a protected species is an offence.</p> |
| Seal Handling and Crew Safety Issues | <p>Seals (and sea lions) 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.</p> <p>When attending to animals landed on deck the following steps should be followed to ensure crew safety:</p> <ul style="list-style-type: none"> • Whenever handling bodies of drowned sea lions, fur seals, or any other marine mammals, wear waterproof gloves and waterproof protective clothing • Where possible, avoid direct contact with blood, urine, faeces and other body 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. |

Audit & Review

Audit & Review

Government fisheries observers on your vessel will audit the implementation of your PS-RMP. Information they collect will be provided to DOC, MPI and the Liaison Officer.

If your PS-RMP is not being implemented effectively, it means that either the Plan needs updating or practices onboard need to be improved. Your Liaison Officer can work this through with you, and update your Plan if necessary.

Your PS-RMP may also need updating at other times. For example, if you change gear or target species, or there are changes in any element of your fishing operations that relate to the risk of protected species captures. At these times, please contact your Liaison Officer.

< 28 m Trawl Protected Species Risk Management Plan: Observer audit form



| Trip Number | Vessel Name | Observer code | Trip start date | Trip end date |
|----------------|-------------|---------------|-----------------|----------------|
| | | | / / | / / |
| Target species | | FMA's fished | | Number of tows |

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, or Y to questions 4, 6, 8 & 12 then please make detailed comments on the reverse.

- Item 1. Did the vessel carry a copy of the South Island/North Island Coast Trawl Operational Procedures (as relevant) document on board that was made available on request?
- Item 2. Were copies of the 10 Golden Rules and Protected Species Risk Management Plan Readily available in a place accessible to all crew?
- Item 3. Were the skipper and crew familiar with the contents of the above documents?
- Item 4. Were any protected species capture 'trigger-points' reached during the trip? (if Y please describe in comments)
- Item 5. After a trigger point was reached, did the crew: (if Y describe in comments)
 - a) Change their behaviour?
 - b) Make changes to fishing operations?
 - c) Change the mitigation measures they implemented?
- Item 6. Did a gear or equipment failure event occur that increased the risk of seabird or marine mammal captures? (if Y detail the event and the action taken by the vessel)

Fish waste management

- Item 7. Was the discharge of fish waste from the vessel managed as per the Protected Species Risk Management Plan?
- Item 8. Were there any periods of continuous fish waste discharge during the tow? (if Y please describe in comments)
- Item 9. Was all fish waste held on board during shooting and hauling?
- Item 10. Was the net cleared, as practicable, of all stickers prior to shooting?

Warp strike mitigation

- Item 11. Was the primary warp strike mitigation device used in accordance with the Protected Species Risk Management Plan?
- Item 12. Were any other mitigation devices used either instead of, or in conjunction with, the primary mitigation device? (if Y please describe in comments)

General procedures

- Item 13. Was the amount on time the net spent at the surface minimised as much as practicable?
- Item 14. Was deck lighting at night reduced to minimum safe operational levels?
- Item 15. Were all protected species captures reported on the Non-Fish protected Species Catch Return, or electronically, as required?
- Item 16. Were a protected species caught and released alive handled with due care?
- Item 17. Were spot lights shining directly astern controlled/dimmed during night setting?

Inshore & Coastal SI Trawlers (Warp Strike Risk and Mitigation)

South Island trawl fisheries have observed and unobserved reports of seabird captures on warps, often larger birds especially albatross. Seabirds are attracted to fishing vessels mainly because of the availability of food. Mitigation solutions are well known and can be easily addressed and solved and effective if properly adopted.

- Discharging fish waste 'continuously or regularly' increases the number of birds around the boat
- Discharging fish-waste into the path of the warp attracts seabirds and while feeding can end-up within the warp danger area, and potentially striking the warp. On contact they can;
 - a. Hit the warp and bounce-off, or become forced under water for a short period of time, and then 'pop-back-up' alive (but fate uncertain)
 - b. Become forced under-water, their wings tangle/twist around the warp, the seabird slides down the warp and drowns or;
 - c. Slide down the warp, until becoming snagged on a sprag or a splice and is held in place for the duration of the tow and is returned (dead) to the vessel when gear is hauled back onboard

Mitigation: No continuous discharge of offal & fish-waste. Live fish and fish waste discharge must be 'controlled' whenever discharge is made into the path of the warp, and seabirds are present, warp mitigation must be deployed!

During hauling & shooting, return those fish required to be returned to the sea while still alive.(in a manner to reduce the risk of warp captures)

1. During the tow duration hold all fish-waste (in bins or fish pound, etc) for the full tow duration and discharge all fish waste when trawl net is on the deck or;
 - a. Hold fish waste in bins or fish pound etc, then discharge 'in-batches' away from the path of the warp (or over the stern if the risk is low and the trawl net is not at the surface) or;
 - b. Hold fish-waste in bins, fish-pound, tank or chute etc and 'batch-discharge' at intervals when the full capacity is reached. If, or when the discharge is made into the path of the warp area, and seabirds present within the warp danger zone,
 - i. Deploy a suitable warp mitigation device when required or;
 - ii. If discharging is required regularly by larger vessels then fit/deploy a 'set & forget' baffle or fit another suitable device while fishing.
2. Ensure warp splices are 'wrapped', any sprags removed or 'whipped', and that warp splices are not near to the water surface

Following information is a guide. Vessel size is not automatically a proxy for increased risk of warp strikes, not all trawlers will 'fit' into this classification description, its fishing operations, deck and trawl equipment that dictates risk and the mitigation to negate that risk!

South Island Trawler - General Classification for Mitigation Requirements

Tier - 1 (Highest risk) Higher volume coastal/offshore trawler, (50, 60, 70ft+ / 15m - 21m+) often operating in areas overlapping with high numbers of albatross. Higher volume-catches and processing, vessels often have a 'truck-deck' as a fish receiving pound. Fish and fish waste discharge is required more often when towing and the position of the trawl blocks and warps, often discharge flows back into the path of the warp.

Mitigation: Fish waste control, requires equipment (tanks, bins chutes etc) hold and control fish-waste and 'batch-discharge' fish waste at intervals.

Warp Mitigation, must have a suitable warp device that's ideally 'set & forget' deployed while fishing and is capable of deterring birds access from discharge-side down side of the hull into warp danger zone.

Tier - 2 (Moderate risk) lower volume coastal trawler, (40,- 50ft / 12m -15m) vessels can 'at- times' operate within areas overlapping with high numbers of Albatross, and 'at-times' have increased volumes of discards. With occasional higher volumes to discharge which exceeds the tow holding capacity, discharge maybe required into the path of the warp

Mitigation: Fish waste control, requires equipment (tanks, bins chutes etc) hold and control fish-waste and 'batch-discharge' fish waste at intervals. Some vessels may be able to discharge over the stern, or at times hold for the full tow duration and discharge when gear is on deck, or during high capacity catch and discharge periods, fish waste may need to be discharged into the path of a warp.

Warp Mitigation, must have a suitable device onboard, and if/when fish waste is discharged into path of the warp, the device must be deployed for that tow. Device examples: A baffler-option, tori line, warp deflector- (buoy/float clipped to warp) and or buoy's attached along hull from the discharge point back into the warp area, or cone / shield etc, placed around warp at the surface level.

Tier - 3 (Lowest risk) small inshore trawler, (30 - 40ft / 9m - 12m) low fishing effort and catch volume, often operating close to shore with fewer seabirds in attendance. Low volume fish waste can either be held for duration of the tow, and as gallows/trawl blocks deployed well outboard of the hull, fish waste/discards are easily discharge over the stern away from the path of the warps.

Mitigation: Fish waste control, basic measures required, able to hold all fish waste/discards held in bins etc and held for whole tow and or batch discharged away from the path of the warp (over stern etc) i.e. no discharge while fishing into the path of the warp when towing.

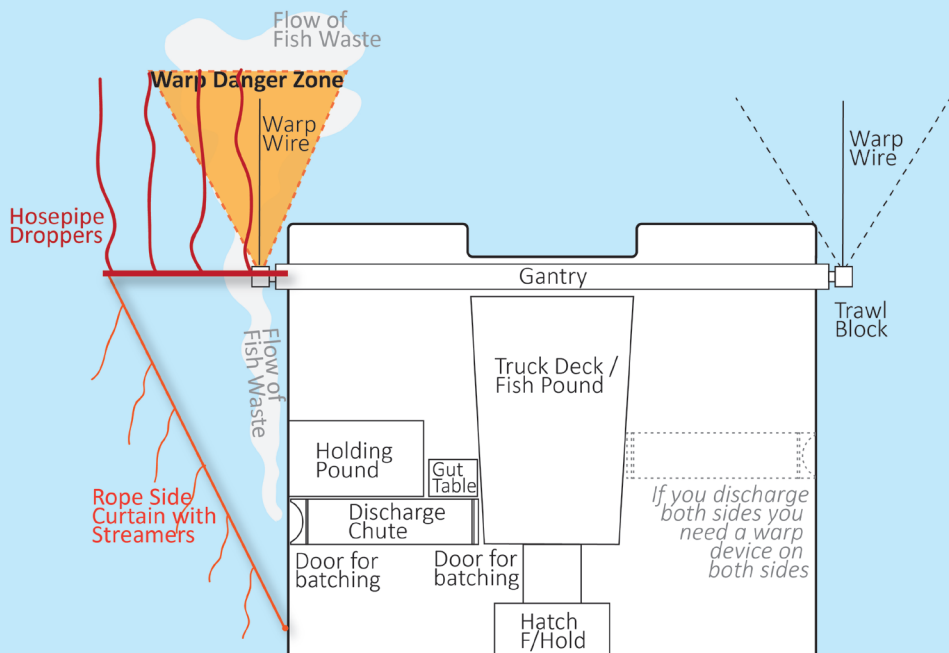
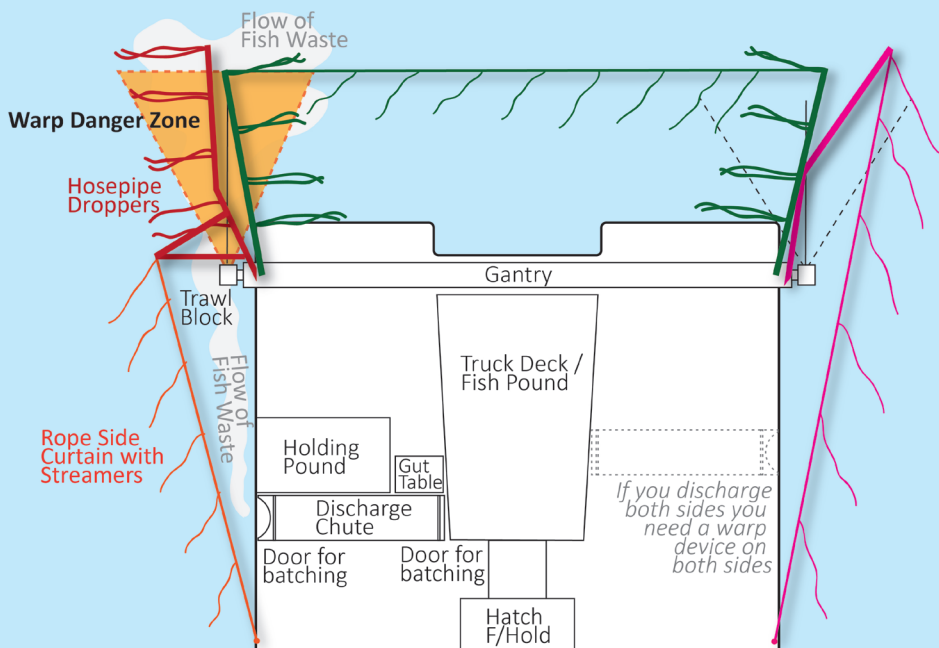
Warp Mitigation, no device required

Design Guide for Large Coastal Trawlers: Warp Mitigation Options

Option 1: Single Side Aft Baffle & Side Curtain

Option 2: Single Side Pole with Full Curtain

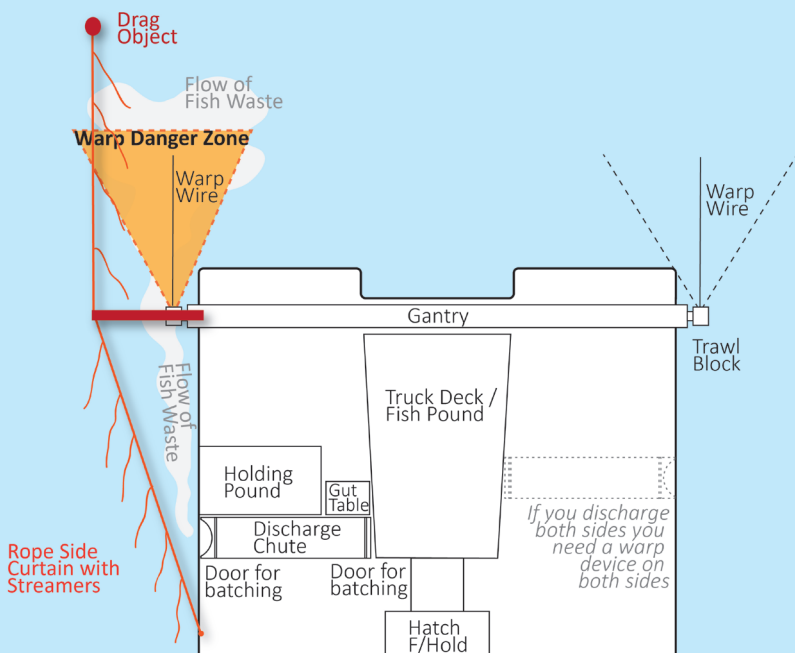
Option 3: Two Boom Baffle and Aft Curtain



Option 4: Single Side Baffle with Side Curtain

(long hose droppers trailing back into the warp danger zone)

Option 5: Single Side Pole with Tori Line & Side Curtain



Design and Build: Guiding Principles

Larger South Island coastal trawlers increasingly operate in areas overlapping with a large number of albatross. They have high catch volumes and some onboard processing; coupled with the need to discharge fish waste more often and while trawling is taking place. The fish waste flows back into the path of the warp, increasing the risk of albatross warp captures.

FINZ and Southern Inshore support the need by this class of larger vessel to have improved fish waste management procedures and a suitable warp mitigation device, which ideally would be a 'set and forget' device that is deployed consistently while fishing.

Fish Waste Control: (No continuous discharge of fish waste when towing) Have equipment to 'hold & batch' fish waste to be discharged at intervals (deck pound, bin, chute or tank) with capacity to hold all fish waste for minimum 20/30 mins the discharge needs ability to be closed off and when capacity reached, opened to allow a 'batch-discharge' during hauling and shooting. Return those fish required to be returned to the sea while still alive in a manner to reduce the risk of warp captures.

Warp Mitigation: A suitable boom/pole or structure to support hose-pipe droppers to restrict seabird access into the warp-zone and a side curtain along the discharge side to restrict access to the discharge chute-point. *(If discharging regularly from both-sides, you need two devices)*

These design-guide examples *(or an approved type-hybrid of these)* are a starting point to construct something that *works* for your vessel design and fishing operations.

- **Aft baffle/pole / 3 Options:** extending far enough back (est. 3m to 5m+ astern, this is vessel dependant) to provide coverage over most of the area where the warp meets the water surface, *3 different versions/examples of this shown (over page)*
 - o **Option 1:** Single side aft baffle & side curtain; (baffle with hose-droppers over warp area and separate side curtain providing coverage over fish waste flow down the hull to the discharge chute-point)
 - o **Option 2:** Single side aft pole; angled-back over warp area and outboard with full large single curtain from the end of the pole providing coverage over fish waste flow down the hull to the discharge chute-point
 - o **Option 3:** Two aft boom-baffles and aft curtain, which extends over/outside each warp with hose-pipe droppers on each pole and aft curtain between poles with streamers to provide aerial coverage across both warp danger zones

The aft boom-device/s is expected to be very effective but requires more complex design and engineering requirements (this design may only suit some of the largest vessels)

- **Option 4. A single side baffle/pole,** should extend at least 2m -2.5m outboard of the trawl block
 - o Positioned close to (or over) the trawl block with 'hose-pipe droppers' that hang down and trail-back into warp zone. A side curtain with streamers extends from the pole running forward alongside the vessel to provide coverage over discharge point
- **Option 5. A single side pole with tori line,** should extend at least 1.5/2.0m outboard of the trawl block
 - o Support the attachment for a tori line which should be a minimum of twice length of the warp behind the vessel. A side curtain with streamers extends from the pole running forward alongside the vessel to provide coverage over discharge point
- Droppers and or streamers should be spaced at intervals approx. 70cm apart

Fish waste discharge management is the key: less often you discharge, and less you discharge into path of the warp, less likely you are to have birds around the warp danger zone!

The better Baffle device you build: the greater protection you will have over the warp danger areas, and less likely you will have to deal with warp strikes.

Mitigation Standards to Reduce the Incidental Captures of Seabirds in New Zealand Commercial Fisheries <28 metre trawl

1. Introduction

To effectively reduce the risk of seabird captures, trawl vessels less than 28 metres in overall length (<28 metre) need to use a combination of mitigation practices that best address the risks of their individual operations. As the <28 metre trawl 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 <28 m trawl fleet, these mitigation standards document what is expected of effective mitigation practices.

Mitigation standards are grouped by what the mitigation practices aim to achieve (desired outcomes).

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

2. Scope

These mitigation standards are applicable to all <28 metre trawl vessels (excluding those used to target scampi). See Appendix 1 for a characterisation of the <28 metre trawl fleet.

3. Desired outcomes

1. The discharge of fish waste¹ from the vessel is managed so as not to attract seabirds to risk areas.
2. The risk to seabirds from trawl warps is minimised.
3. Seabird attraction towards, and access to, trawl 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.²

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

² 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. 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 shooting or hauling.³

Mitigation standard 1.2: Fish waste discharged whilst the net is being towed must be batch discharged.⁴

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

- Develop and document a fish waste management system that describes how 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 understood by, all crew members.⁵
- Ensure their vessels have the equipment needed to implement their fish waste management system (such as holding/batching tanks or bins). All such equipment should be well maintained with sufficient spare parts kept on board to effect regular maintenance/repairs.
- Develop and document a fish waste contingency plan that describes what actions will be taken to meet mitigation standards 1.1 and 1.2 in the event of an equipment failure. The contingency plan should ensure that any fish waste discharge from the vessel continues to achieve desired outcome 1. Sufficient, well maintained equipment must be kept on board to allow the vessel to enact the fish waste contingency plan at short notice.
- Maintain a secondary system that prevents fish waste lost to the deck or factory floor from being lost overboard. Examples of such secondary systems include equipment to minimise the volume of fish waste lost to the factory floor/deck and the use of gratings or trap systems to reduce the volume of fish waste discharged through scuppers/sump pumps (whilst still allowing the free movement and egress of water).

³ 'Shooting' is defined as the time between the codend leaving the deck and the time when the doors are below the surface. 'Hauling' is defined as the time between the doors reaching the surface and the codend being on deck.

⁴ 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.

⁵ See Appendix 2 for the template of the protected species risk management plan.

Desired outcome 2: The risk to seabirds from trawl warps is minimised

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

Mitigation standard 2.1: The trawl warp located closest to the side of the vessel from which fish waste is discharged is protected by a visible and physical barrier which deters birds from approaching the warp (unless the vessel is operating at a time and place where there is no risk to seabirds).

Mitigation standard 2.2: The condition of the trawl warps does not increase the risk of seabirds captures.

To meet mitigation standards 2.1 and 2.2, vessel operators should:

- Deploy a seabird scaring device on the appropriate warp(s), unless the vessel is operating at a time and place that the operator or skipper and liaison officer agree poses no risk to seabirds. The chosen device must be well maintained and deployed in such a way that does not increase the risk to seabirds.⁶ Sufficient spares must be carried on board to effect repairs when necessary.
- Ensure the warps are not overly greased; all warp splices are 'wrapped'; any sprags are removed or 'whipped'; and warp splices are not near the water's surface

Desired Outcome 3: Seabird attraction towards, and access to, trawl nets is minimised.

If seabirds do access nets, the risk of harmful interactions is minimised

Mitigation standards 3.1, 3.2, 3.3 and 3.4 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 All gear maintenance/repairs (planned or otherwise) are conducted in a way which minimises the risk to seabirds.

Mitigation standard 3.4 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)

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

- Ensure the crew clear the net of all practicable stickers prior to shooting.
- Shoot and haul the trawl net as quickly as practicable.

⁶ The risk of seabirds becoming entangled in the mitigation device is increased if droppers or streamers trail excessively in the water.

- Inspect and maintain all fishing gear and equipment (such as winches) to reduce the risk of gear or equipment failure.
- Conduct planned gear maintenance whilst the trawl net is on board. If the trawl 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 maintenance whilst the trawl net is on board. If the trawl net is required to be in the water to effect repairs, all such maintenance should be conducted with as much of the trawl net on board as possible given the circumstances (with particular consideration given to the net mouth).
- 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.

5. Implementation

The mitigation standards outlined above are implemented through non-regulatory management measures as set out in the Coastal Trawl Operational Procedures and Protected Species Risk Management Plans (PSRMPs). Coastal trawl 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.

Coastal trawl 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.

Associated with coastal trawl 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 Project. As part of the Liaison Project, liaison officers contact fishers to support them in the development and implementation of PSRMPs. Liaison officers regularly visit fishers to audit and review plans and assist operators with changes as necessary.

The progress of liaison officers is reported back to DOC monthly by the liaison officer project coordinator. The number of PSRMPs in place, and the number of vessels visited is reported annually by DOC⁷ and will be included in the seabird annual review report.

6. Verification

Vessel adherence to the mitigation standards is verified through Fisheries New Zealand observer coverage. After each trip, the observer completes a Protected Species Risk Management Plan Observer Review Form (Appendix 3). Fisheries New Zealand discuss the review form with the observer and then sends it to the liaison officer coordinator to follow up on any issues with the vessel operator. The outcome of the any follow-up actions are reported to DOC and Fisheries New Zealand quarterly and will be reported annually in the seabird annual review report.

During their trips, Fisheries New Zealand observers also inspect and measure each seabird scaring device. Observers record their findings on either the bird baffler, tori line or warp scarer details form (Appendices 4, 5 and 6).

The level of observer coverage on board the <28 metre trawl fleet is relatively low with approximately 5% of tows observed between the 2013/14 and 2017/18 fishing years. The level of observer coverage has increased in recent years although coverage is highly skewed towards northern waters and seasonal hoki fisheries.

⁷ <https://www.doc.govt.nz/our-work/conservation-services-programme/csp-reports/2017-18/protected-species-liaison-project/>

International and National Seabird Risk Frameworks

1. United Nations (UN) Law of the Sea, Fish Stocks Agreement & Responsible Fishing Agreement
 - Nations must catch their fish but not harm environment
2. UN -FAO delivers required base standards through IPOA for seabird risk management globally and each nation must have its own plan
3. Seabirds especially albatross are recognised as the world's most threatened bird group
4. Association for Conservation of Albatrosses and Petrels is a global treaty on reducing threats to seabirds and in New Zealand is the responsibility of the Department of Conservation (DOC) with Fisheries NZ involvement.
5. NZ has National Plan of Action (NPOA)-seabirds with 2 goals
 - No risk to populations (they can grow, not decline due to fishing)
 - As few deaths as practical (further affordable and sensible mitigation)
6. Fisheries Act allows for utilisation (catch your fish) while avoiding, remedying or mitigating adverse impacts on environment
7. Under the NPOA, NZ has a Seabird Risk assessment with each species given a '*risk-rating by fishery*' where there is a risk of unsustainable mortality levels
8. Crown/MPI (FNZ) obligated to meet the Act, therefore they have introduced mandatory measures in many fisheries, with more to come and undertake risk assessments
9. Crown (FNZ and DOC) being held to account by eNGOs and others
10. Most NZ trawl, line and net fisheries have issues with certain bird species
11. Anywhere bird captures are high and monitoring (observer coverage) is low will drive FNZ to meet its obligations with further interventions
12. FNZ has ability, and does, set limits on mortalities if seen necessary (e.g. NZ sea lions)
13. Industry associations have worked with and demonstrated to Government that a joint approach with risk plans, liaison and support is the best approach rather than more laws
14. Liaison/support programmes are in place for many sectors now (approximately 200 vessels inshore and deepwater) and more will be in as time goes on
15. These programmes are paid for by quota owners directly or through Govt. levies
16. Industry works hard to ensure the programmes are practical, sensible and that all vessels in a sector are dealt with the same way
17. Vessel owners as well as skippers need to understand these programmes and be engaged in them