

COASTAL TRAWLER FISHERIES HOKI OPERATIONAL PROCEDURE

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PART 1: INTRODUCTION

The purpose of this document is to provide information to companies (vessel skippers, crew and operators, quota owners and Licensed Fish Receivers) involved in the West Coast, Cook Strait, and East Coast South Island coastal trawler hoki fisheries.

This document has been prepared by Seafood New Zealand - Deepwater Council (DWC), on behalf of quota owners, to outline requirements to manage the risks when fishing for hoki in these areas.

Disclaimer

Nothing in these procedures shall be interpreted to replace or override any of the requirements in the fisheries legislation or other regulations, including those for Health & Safety and Maritime Safety. Vessel operators are required to always ensure that both they and their crew understand all regulations that are relevant to these fisheries and to the operating environment which they are in.

Background to these procedures

All fisheries are very important, with significant tonnages of hoki caught by the coastal fleet on a seasonal basis. Managing these environmental risks is important for the sustainability of the fishery and to demonstrate responsible fishing practices.

Central to these procedures are:

- Bulk fishery risk management
- Hoki Management Areas (HMAs)
- Protected species risk management
- Animal handling and release, and crew safety
- Reporting



Figure 1: Hoki vessels at Picton Wharf (Photo: John Cleal, 2018)

PART 2: BULK FISHERY

The coastal hoki fishery is a bulk (high volume) fishery with vessels usually targeting dense fish marks and taking large catches in a short tow time.

This requires excellent seamanship, fishing skills and practices to ensure careful management of catch size and subsequent catch handling, given the known safe working limits for vessel and crew in sometimes difficult conditions.

Fishing operations and tow times through the fish mark must be carefully managed to ensure you do not catch beyond the capability of the gear and vessel.

Catch monitoring systems

Your ability to judge the density of the mark on the sounder and the amount of time you will tow through the mark to ensure the required catch volume is dependent on two important factors:

- The experience level of the skipper and his knowledge of the fishery and area
- The catch monitoring equipment used on the fishing gear to improve the level of information available to the skipper throughout the tow (e.g., net headline monitor and codend catch sensors). It is also important to have an echo sounder capable of good mark recognition and description.

DWC recommends the use of catch control and monitoring systems in all hoki fisheries to reduce the potential issues with using a window (see below). This also:

- improves fish quality
- reduces the potential for gear damage and loss
- minimises the need for transhipments of excess fish
- reduces tow times and therefore improves fishing and energy efficiencies
- reduces the safety risks associated with catch volumes that may exceed the capabilities of the gear or vessel

Nearly all coastal vessels and all deepwater vessels now have headline monitors and catch sensors.

Windows

Windows are used in the fishery as a vessel and gear safety measure. If the skipper misjudges the density of the fish mark or the time the trawl is in the mark, the window mitigates the significant risk to the vessel, gear, and crew.

However, windows are **not** to be used as a way of allowing for poor fishing practice, judgement, and seamanship. They are merely insurance against mishaps or events where catches cannot be controlled despite best efforts.

Any fish seen lost must always be reported in the vessel's Electronic Reporting System (ERS) under code 'A' (accidental loss). You must read and understand the reporting regulations.

A window is considered a recognised safety measure in some bulk fisheries, but it is not to be used as a volume control measure. "Stitched" windows are considered illegal and are not recommended.

Fisheries New Zealand approval to transfer fish

On occasion, a vessel may bring aboard hoki volumes exceeding its fish hold capacity. To tranship excess fish to another vessel, each vessel requires a transhipment permit from Fisheries New Zealand (Approval to Tranship Fish under Section 110 of the Fisheries Act 1996 - see Appendix 2).

Operators intending to fish the Cook Strait fishery must receive a permit before the commencement of the season. This permit must list each registered vessel that may receive or tranship fish. Applications can be emailed to the Fisheries New Zealand Deepwater Team: deepwater.team@mpi.govt.nz

Once the vessel has a transhipment permit, no prior notification is needed to tranship fish.

Transhipment details must be entered in the Catch Landing Return (CLR) form. The vessel that caught and transhipped the fish should report the amount under destination code "T" (that amount does not go on the subsequent Monthly Harvest Return), and the vessel that received the fish should report it under code "L" as normal.

PART 3: HOKI MANAGEMENT AREAS (HMAs)

HMAs are areas with high abundances of juvenile hoki (less than 55 cm in total length). DWC quota owners have agreed to manage and monitor effort within HMAs to protect juvenile hoki.

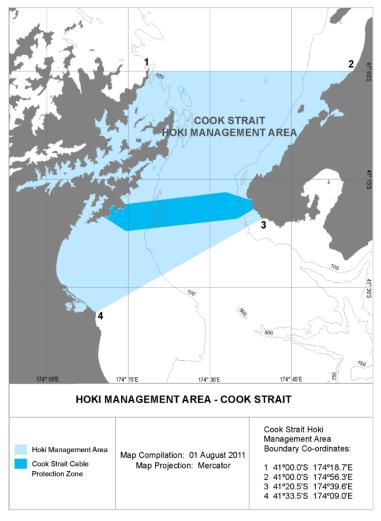


Figure 2: Cook Strait HMA

All operators and vessels are required to monitor catches of hoki across the entire HOK 1 QMA (not just within the HMAs) and, as a matter of principle, all vessels must move from any area where catches of juvenile hoki (<55 cm) comprise 20% or more of the hoki catch by number.

Trawlers >28 m LOA are not permitted to target hoki inside any of the HMAs. The Cook Strait HMA is the only HMA within the coastal hoki fishery area (Figure 2). There are other HMAs for the deepwater hoki fishery, as specified in the Deepwater Trawl Hoki Operational Procedures.

Cook Strait Cable Protection Zone

The Cook Strait Cable Protection Zone (CPZ) protects vital submarine electrical and telecommunication cable links between the North and South Islands (see Appendix 1 for a map).

There are severe restrictions on activities that can be carried out within the CPZ under the Submarine Cables and Pipeline Protections Act 1996. To deter illegal activity, there are severe penalties in the form of fines and forfeiture of vessels for violations of the Act. All fishing vessels fishing in the Cook Strait hoki fishery should have the CPZ coordinates on the fishing plotter and allow a buffer zone to keep clear of this area when fishing or anchoring.

Transpower operates sea and air patrols within the CPZ. Ben Hubbard is the marine patrol manager (0210 269 2841).

At sea contacts are:

Patrol Vessel: Seapatroller VHF Channel 16; or 24 hours per day, 027 444 2288 Patrol Helicopter: Call "Transpower Helicopter", VHF Channel 16 Website: <u>www.transpower.co.nz</u>

PART 4: PROTECTED SPECIES RISK MANAGEMENT

The coastal hoki fishery attracts high numbers of New Zealand fur seals and seabirds around the vessels and fishing gear, where captures can sometimes occur. Dolphins are also occasionally caught in the Cook Strait and ECSI fisheries. The following outlines the risks to these species and measures to mitigate captures.

PSRMPs

Follow your vessel's PSRMP and deploy mitigation to reduce capture risk as required.

All coastal vessels are <28 m LOA, which, unlike vessels >28 m, are not required by law to carry and use seabird scaring devices. However, DWC and hoki quota owners require that all hoki vessels <28 m LOA have Protected Species Risk Management Plans (PSRMP) on board.

The PSRMP is a one-page document outlining information on:

- The vessel, including a photo
- Vessel-specific protected species risks
- Vessel's offal control system
- Vessel's protected species mitigation measures, including a photo of the warp mitigation on board.

PSRMPs are now onboard all the fresh fish hoki fleet of <28 m vessels. These plans are a much simpler version of the deepwater trawlers' VMPs but retain the three basic management procedures.

New Zealand fur seal mitigation

Risk

Risk of fur seal bycatch varies between the coastal hoki fisheries, depending on several factors including the number of vessels, total effort, and operating procedures. Risk is also largely driven by less predictable factors such as fur seal behaviour and environmental factors.

Fur seals can be caught inside the net during both shooting and hauling operations. The majority of caught animals are dead males.

Captures of fur seals peak during late July and early August.

Mitigation procedures

- **Do not discharge fish waste** when hauling or shooting the trawl and avoid discharging offal or fish waste when towing.
- Always remove fish stickers from the net before shooting.
- When fishing operations, weather and navigation allow, **turn your vessel when hauling** to close the trawl mouth across stern ramp quarters. This can close off some meshes to reduce the risk of fur seals being caught in the trawl mouth.
- Minimise the time that gear is on or near the surface (shoot and haul the trawl as quickly as practicable) and avoid mending the trawl with gear in the water unless the head and ground rope are on deck.



Figure 3: Net-binding of midwater trawls is an option if significant fur seal captures are observed when shooting.

• **Net-binding** of midwater trawls is an option if significant fur seal captures are observed when shooting. Net binding consists of tying short lengths of rope at intervals down the length of the trawl's large meshes (Figure 3). Held with slipknots, these pull apart when the force of the doors spreads the net during shooting. Net binding instructions are in Appendix 7.

- Animals (seals and birds) returned dead 'washed-out' (an indication the animal has been in a trawl for a long time) will often be found in the codends or fish pound. Netbinding will choke the mid-water trawl mouth closed and reduce access into the trawl meshes when shooting.
- Whenever practicable, **move away** from areas where multiple fur seal capture events are occurring and cannot be prevented or reduced using industry best practice mitigation measures.

Dolphin mitigation

Risk

Common and dusky dolphins are occasionally caught in the Cook Strait and Pegasus Canyon hoki fisheries.

The risk of dolphin captures is less predictable than for fur seals and can be unexpected during the hoki season. Some obvious risk factors include dolphins following the vessel or large pods seen at the surface.

Captures in recent years have most often occurred after dusk and before dawn.

Mitigation procedures

- Shooting and hauling When visibility permits, the captain will view the immediate area around the vessel for dolphin activity before shooting the fishing gear. If large numbers of dolphins are observed, the vessel should (when practicable) move or prevent shooting or hauling.
- **Dolphin Dissuasive Devices (DDD)** will be deployed as agreed between the operator and the DWC ELO and will be made explicit in the VMP. If dolphin captures continue, vessels will be asked to deploy DDDs during the season.

Seabird mitigation

Risk

The coastal hoki fishery is of relatively low risk to seabirds. This is because the catch is landed whole, little processing of bycatch occurs, and seabird numbers are lower in winter.

Seabirds are attracted to fish waste and trawl nets.

Captures can occur on different parts of the fishing gear, including the warp, the net and occasionally on mitigation devices. Some seabirds are also more likely to land on the deck, sometimes in high numbers (though rare).

Mitigation procedures

- Fish waste management No continuous discharge of fish waste while towing, hold for the tow or batch at intervals.
- **Mitigation device** Vessels must have one of the recommended warp mitigation devices and/or a tori line (see Appendix 6 Warp Mitigation Design Guide) and deploy them when required. If you discharge fish waste into the path of the warp and birds are present in the 'warp danger zone', deploy a warp mitigation device.
- **Reduce time net is at surface –** As with fur seals, it is important to minimise the time the net is at the surface. Any repairs are to be done when the net is on deck.

PART 5: ANIMAL HANDLING/RELEASE AND CREW SAFETY

The following outlines what to do if a marine mammal or seabird capture occurs.

Animal welfare

- All practical care should be taken to release animals alive while maintaining the safety of the crew.
- Handle all captures with care to minimise harm to the animal and to increase their survivability.
- Deliberately harassing or harming the captured animal is an offence.
- Taking any part and keeping it or cutting or mutilating the body of a protected species, is an offence.

The above applies to ALL protected species.

Health and safety when handling animals (dead or alive)

Crew and vessel safety are paramount. Animals can be dangerous, particularly when stressed and carry infectious diseases that can infect humans. Handling marine mammals should always be kept to a minimum and only occur when needed.

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

- Whenever handling animals, wear waterproof gloves and waterproof protective clothing (refer to examples shown below).
- Where possible, avoid direct contact with blood, urine, faeces, and other body fluids. It is also important to avoid the animal's mouth as this is a major source of disease. Take special care when marking a dead animal.
- If bitten or grazed by an animal, wash and disinfect the wound immediately, apply betadine/antiseptic ointment and cover the wound. This minimises the risk of painful infections caused by bacteria carried by some animals.
- After handling any animal, wash your hands and forearms with antibacterial soap and hose down your protective clothing.

Marking and returning marine mammals

Any dead marine mammal returned to the sea must be marked with twine to prevent it from being counted twice if it is caught again. (This can and does happen, especially on other fishing grounds, but is much less likely in Cook Strait.)

When marking a dead fur seal, ensure a cable tie or twine is fixed firmly behind the lower or upper jaw canine teeth before returning to the sea (Figure 4).



Figure 4: Marking a dead fur seal jaw with twine or a cable tie

PART 6: REPORTING - WHEN CAPTURES OCCUR

DWC trigger points and vessel action

Trigger points are the DWC real-time reporting capture event threshold system. Once a trigger is reached, the situation is monitored closely by DWC, the vessel manager and the captain. When appropriate, the crew should take additional steps to mitigate the risk of further captures by actively reassessing measures and taking additional steps as required.

Trigger points

For vessels <28 m (deepwater vessels >28 m also have trigger points):

- 2 fur seals (dead or released alive) in a single trip, or 5 fur seals in a 7-day period
- 3 seabirds (dead or released alive) in a single trip, or 10 seabirds in a 7-day period
- 1 dolphin (dead or released alive)

Most often, a single coastal hoki trip is just one day's fishing, sometimes two days of fishing.

Trigger reports

Report all DWC trigger point breaches in real time (within 24 hours) to <u>admin@deepwatergroup.org</u>. Note that these emails are automatically forwarded to the DWC Environmental Liaison Officer (ELO), John Cleal, and Ben Steele-Mortimer. The ELO will follow up to provide support and may seek additional information.

DWC CONTACTS (AVAILABLE 24/7)	PHONE
John Cleal (ELO)	021 305 825
Ben Steele-Mortimer	027 234 3140

Fisheries New Zealand mandatory reporting requirements

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

As required under Fisheries Regulations, all protected species landed dead or alive (then returned to the sea) must be recorded via the vessel's Electronic Reporting System (ERS).

Capture Reports should be made via the Non-Fish Protected Species part of the daily ERS report, and if a trigger point is reached, also to the DWC ELO (as instructed above).

Note: Under the Wildlife Act, vessels must also report protected species that are injured or killed, whether they were 'captured' or not. These interactions should be reported **if known** by the captain or crew.

Note: The ERS has fields to allow reporting of leg-band or flipper tag numbers found on a captured animal. This information is highly valued, so please always record and report.

Cameras (EM)

Electronic Monitoring (EM) cameras have now been rolled out on vessels in the coastal hoki fleet. All crew should understand the requirements for operating with cameras. Information to support crew and vessel managers is available on the MPI website, Onboard Cameras for Commercial Fishing Vessels: <u>tinyurl.com/Onboard Cameras</u>

If you have any questions or problems with operating the cameras, contact MPI at <u>onboardcameras@mpi.govt.nz</u>

Definition of a capture

Captures = animals that have become fixed, entangled, or trapped and are prevented from moving freely or freeing themselves (i.e., interactions with fishing gear or Mitigation gear/ tori lines, etc)

Deck strikes = birds that collide with the vessel's superstructure or deck and are unable to leave the vessel on their own, either through death, injury, or disorientation.

Do not report any seabird if it is alive and leaves the vessel unassisted.

Note: deck strikes are not included in the Fisheries New Zealand seabird capture estimates but must be reported.

Seabird identification codes

Unless you can positively identify the species, use the generic/unidentified codes below (<u>do</u> <u>not use XAL to report seabirds)</u>:

XGA - Great albatrosses (unidentified), Royal, Antipodean (Wandering) and Gibson's

XMA - Smaller albatrosses (unidentified) Mollymawks - most commonly Salvin's, Buller's, Chatham Island, White-capped, etc.

XXP - Petrels, prions, and shearwaters (unidentified), most commonly White-chinned, Cape, Grey, and Westland petrels and Sooty Shearwaters.

Record any leg band numbers in the ERS field provided on the form.

We now require improved seabird identification of three of the most common Mollymawks, petrels, shearwaters, and prion species. Only when you *can positively identify* these species listed below should you report the individual seabird codes. To assist with this, we have provided an improved Seabird ID Guide (Appendix 8, or view online here: <u>tinyurl.com/SeabirdGuide</u>)

XPB - Buller's albatross (light-grey head with white cap; two big bright yellow stripes on both the bottom and top of the beak; this bird is generally a bit smaller than the other two).

XSA - Salvin's albatross (head and neck grey with white cap; beak dull grey/brown with a thin yellow line at the base and a black tip at the end).

XWM - White-capped albatross (a larger Mollymawk; white head, a light grey beak with yellow tip).

XWC - White-chinned petrel (bigger bird than a shearwater; white feathers under the bill, commonly found in the Southern Ocean)

XWP - Westland petrel (dark tip of bill, commonly found West Coast and Western Snares, Otago, etc)

XSH - Sooty shearwater (mutton-bird; a longer, dark, narrow bill; smaller bird than petrels)

XFP - Fairy prion (small grey bird, common deck strike bird, i.e. not often caught in fishing gear)

Common marine mammal identification codes

FUR - Fur seal

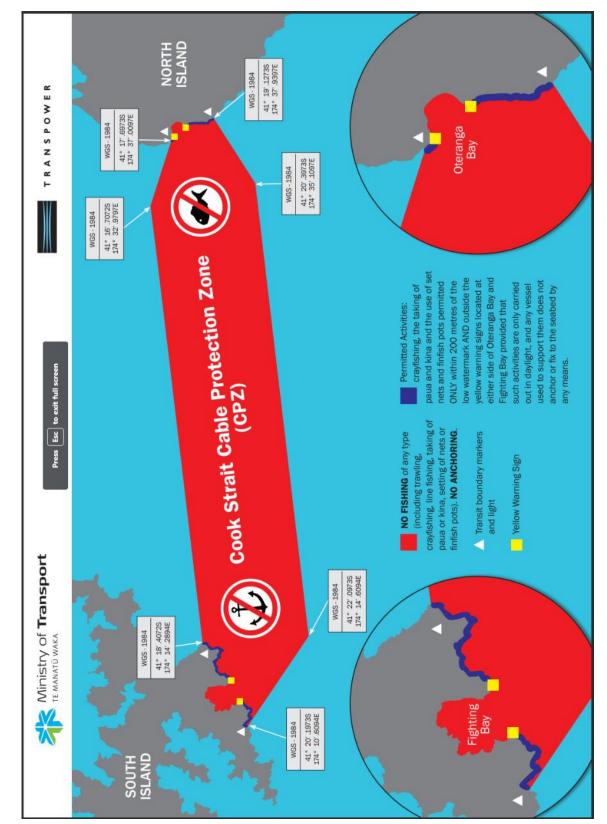
CDD - Common dolphin | **DDO** - Dusky dolphin (more often found at Pegasus)

Accurate reporting of all mortalities is the best approach. Having accurate information regarding captures helps better understand and manage the process, which in turn helps get the most appropriate risk mitigation measures in place. See Appendix 4 for the 10 Golden Rules for Non-Fish or Protected Fish Species Catch Reporting.

Animal Welfare

Under the Marine Mammal Protection Act, it is illegal to harass, kill or deliberately catch any marine mammals. However, in commercial fisheries, any incidental capture is not illegal provided the incident is reported.

Any vessel capturing a protected species should return all animals to the sea as soon as possible (unless, in the unlikely event, an MPI observer says to keep it).



APPENDIX 1: COOK STRAIT CABLE PROTECTION ZONE

Figure 5: Transpower's map of Cook Strait Cable Protection Zone

APPENDIX 2: APPROVAL TO TRANSHIP FISH





APPROVAL TO TRANSHIP FISH UNDER SECTION 110 OF FISHERIES ACT 1996

1. Pursuant to section 110 of the Fisheries Act 1996 (the Act) I hereby authorise the operators of the vessels listed in Schedule 1 to tranship fish from one registered fishing vessel to another.

Term of approval

2. This approval is valid between the date of signature and 30 September 2022.

Defined area

3. This approval only applies to fishing vessels taking hoki in Cook Strait (fisheries statistical areas 16 and 17) and off the West Coast South Island (fisheries statistical areas 33, 34 and 35).

Reporting requirements

- 4. For the avoidance of doubt the requirements of the Fisheries (Reporting) Regulations 2017 still apply to any fish transhipped pursuant to this approval.
- 5. Those requirements are that the vessel that caught the transhipped fish must report that fish on a Landing Report under either landing code TL (catch balancing obligations lie with the vessel that caught the fish) or landing code TT (catch balancing obligations lie with the vessel that received the fish). In the case of the latter, the vessel that received the fish must also report it on a Landing Report and balance the catch with annual catch entitlement.

Dated this day of 2022

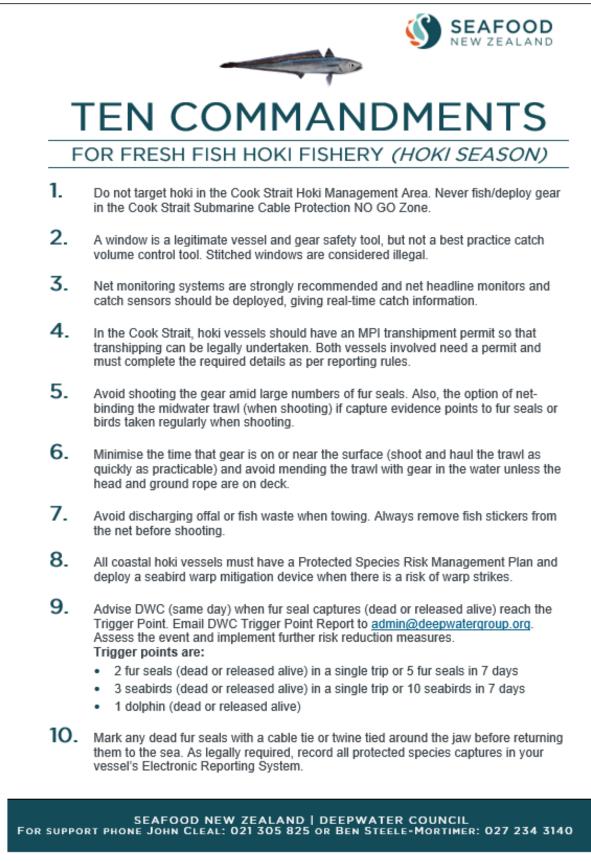
James Andrew Acting Manager Deepwater Fisheries

Acting under a delegation made under clause 2, Schedule 6 of the Public Service Act 2020 – with delegation for section 110 of the Fisheries Act 1996

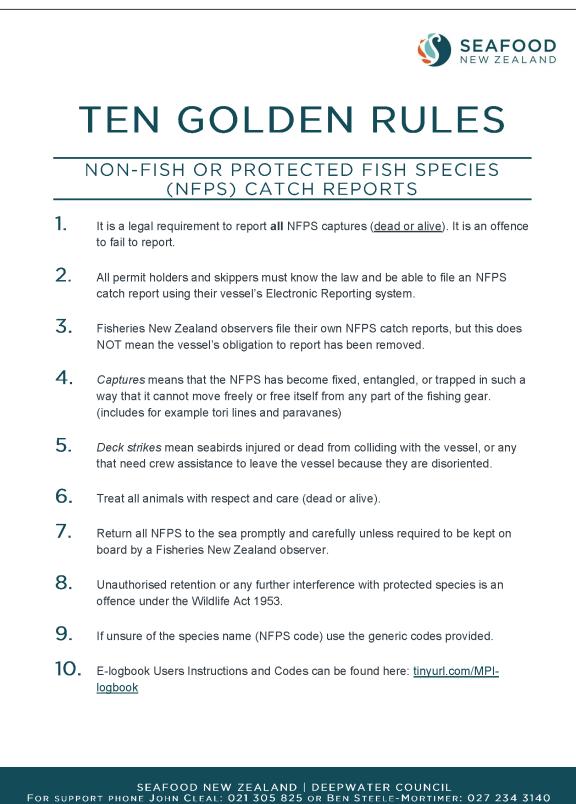
Fisheries New Zealand Fisheries Management Charles Fergusson Building, 24-38 Bowen Street Wellington 6140, New Zealand

www.fisheries.govt.nz

APPENDIX 3: TEN COMMANDMENT	S
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APPENDIX 4: 10 GOLDEN RULES FOR NON-FISH PROTECTED SPECIES CATCH REPORTING



NON-FISH OR PROTECTED FISH SPECIES CATCH REPORT - SUMMARY INFORMATION

(from Fisheries New Zealand Electronic Catch and Position Reporting Guide August 2021)

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 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>tinyurl.com/DOCseabirdsNZ</u>
- A fuller set of invertebrate NFPS material is available at tinyurl.com/86AEBR
- A coral guide is available at tinyurl.com/DOCCoralGuide

SEAFOOD NEW ZEALAND | DEEPWATER COUNCIL For support phone John Cleal: 021 305 825 or Ben Steele-Mortimer: 027 234 3140

APPENDIX 5: OBSERVER VMP AUDIT FORM

Trip Number		Ve	ssel Nar	FMAs fished	FMAs fished			Tini a Tangard				Trip end date			
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					questions, or \										
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em 2)	Were the se	nior crew	familiar	with and	have access to	o th	ne above de	ocum	ent	s?			N	/A	
tem 3)	Were any s	eabird, ma	arine ma	mmal or	protected shar	c 'ti	rigger point	ts' act	iva	ted durin	ig th	e trip?	N	/A	
tem 4)	Did a gear o	or equipme	ent failur	e event o	occur that incre	ase	ed the risk	of sea	abir	d or mar	ine I	mamm	nal N	I/A	
tem 5)					en by the vessel)										
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tem 8)					oyed on every									J/A	
ish Was	te Managem	ent:													
tem 9)	Was the dis	charge of	fish was	ste from t	he vessel mana	age	ed as per th	ne VN	IP?				N	I/A	
tem 10)	The main fig	sh waste r	manager	nent strat	tegy employed	du	ring this tri	p was	: (0	escribe in	com	nents)			
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tem 11)					whole fish) held		· 🖵						۸ ^۲	N/A	
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		-	nettina r	etained o	on board?								N	J/A	
					gations of mari									J/A	
tem 17)	Was the amount of time the net spent on the surface minimised as much as practicable? Were any turns conducted during the tow with the doors fully submerged and a headline depth of less than 50 m?(<i>excl. coastal trawlers</i>)								N	I/A					
tem 18)	Were all pro	tected sp	ecies ca	ptures re	ported by the v	es	sel?						N	I/A	
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APPENDIX 6: SOUTH ISLAND COASTAL TRAWL WARP MITIGATION DESIGN GUIDE

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 on-board 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 a minimum of 20 to 30 minutes. The discharge needs the 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 hosepipe 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 your fishing operations.

• Aft baffler/pole: extending far enough back (est. 3m to 5m+ astern, this is vessel-dependent) 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 baffler with side curtain - baffler with hosepipe droppers over warp area and separate side curtain providing coverage over fish waste flow down the hull to the discharge chutepoint.

o Option 2: Single side aft pole with full curtain - 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 bafflers and aft curtain - extended over/outside each warp with hosepipe 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: Single side baffler/pole with side curtain - extended at least 2.0m - 2.5m outboard of trawl block.

o Positioned close to (or over) the trawl block with hosepipe 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: Single side pole with tori line and side curtain - extended at least 1.5m - 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.

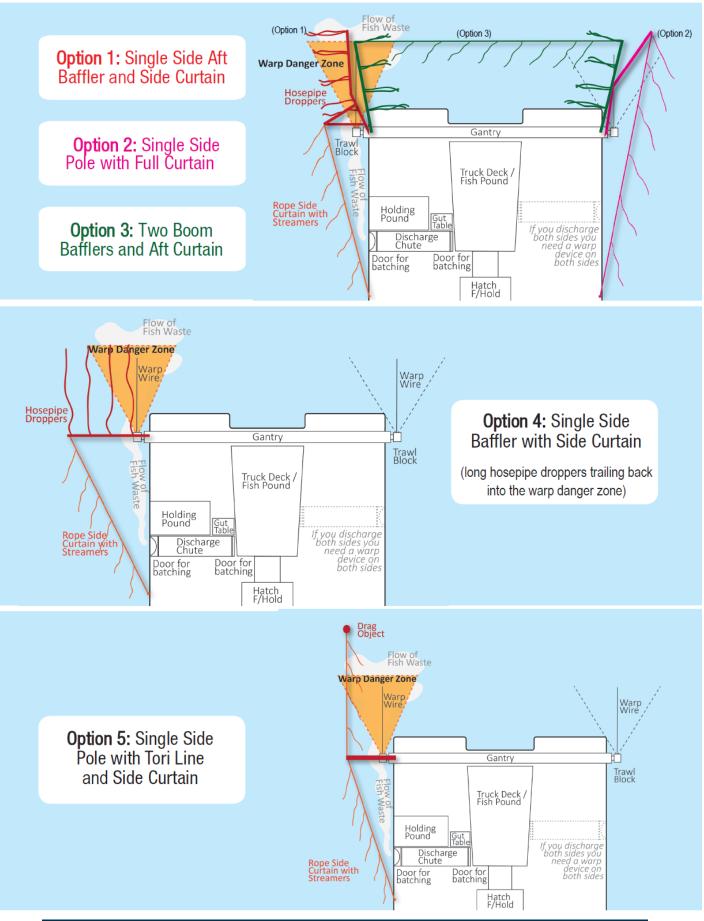
Droppers and/or streamers should be spaced at intervals approx. 70cm apart

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

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

Contact John Cleal for further information Ph. 021 305 825

Design Guide for Large Coastal Trawlers: Warp Mitigation Options



APPENDIX 7: NET BINDING MIDWATER TRAWL

- **Net Binding Purpose**: Holds trawl meshes in a tight bundle during shooting to reduce the risk of seals and birds becoming entangled or entering open meshes.
- **Complementary Procedures**: Best used alongside shooting the trawl gear quickly, cleaning the net, and avoiding discharge of offal or fish waste to minimize protected species interactions.
- **Mechanism**: Tying meshes into a tight bundle at intervals along the trawl; binds slip apart as trawl doors open, reducing netting lofting near the surface.
- Materials & Techniques:
 - Short ropes (e.g., 7 mm mussel lashing, 600-1000 mm long) are used.
 - One end is knotted in a mesh or selvedge, looped around meshes multiple times, and tied off using slip hitches with 3-6 twists for grip. (Figure 5)
 - Adjustments depend on vessel size and trawl dimensions
 - Two or more binds spaced along the trawl (larger trawls may require more binds).
 - Initial setup takes ~5 minutes while you work out what binding method works best; subsequent checks and re-ties take ~1 minute per tow.
 - Adjustments to twists or rope material may be needed to prevent premature release or binding failure.
 - Over-tightening may prevent the binds from slipping, causing the trawl to remain closed.

• Maintenance:

- Regular inspection of rope for fraying or knots; replace if necessary.
- Ends of binds should be whipped or spliced to prevent fraying.



Figure 6: Net-binding of midwater trawls is an option if significant fur seal captures are observed when shooting.

APPENDIX 8: SEABIRD ID GUIDE

SEABIRD ID CODES FOR COMMON DEEPWATER SPECIES

SEAFOOD

XGA - larger albatross species (generic code)



XMA - smaller albatross/mollymawk (generic code)



Northern or Southern Buller's albatross (XPB). Head light grey with white cap. Beak bright yellow strips top & bottom



White-capped albatross (XWM). A larger Mollymawk. Head white. Beak light grey with a yellow tip.



Salvin's albatross (XSA). Head & neck grey with white cap. Beak dull grey/brown, yellow line at base & dark tip at end

*Not all albatross species included

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Petrel, Prion or Shearwater ID guide

XXP – Petrel, Prion or Shearwater

(Note - not all species are included. Use XXP if you are unsure of the species)



White chinned petrel (XWC). White feathers under bill. Lighter tip of bill. Commonly found in Southern Ocean



Westland petrel (XWP). Dark tip of bill, more commonly found on west coast



Sooty shearwater (XSH). Dark narrow bill. Smaller than petrels



Fairy prion (XFP). Common deck strike bird, not often caught in fishing gear

*Not all petrel & shearwater species included

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APPENDIX 9: MARINE MAMMAL SPECIES ID GUIDE

Remember: Take two pictures (close-ups of the head and the whole animal) and send them to DWC so an identification of the species can be made.

New Zealand fur seal (FUR)





Characteristics

- Sharply pointed nose
- Very long whiskers reaching back to ears
- Dense brown fur
- Ears on the side of the head
- Length of males = 1.8 m
- Length of females = 1.2 m

Note: Long whiskers in photos contrast with the short whiskers found on New Zealand sea lions (see below).

Dusky dolphin (DDO)

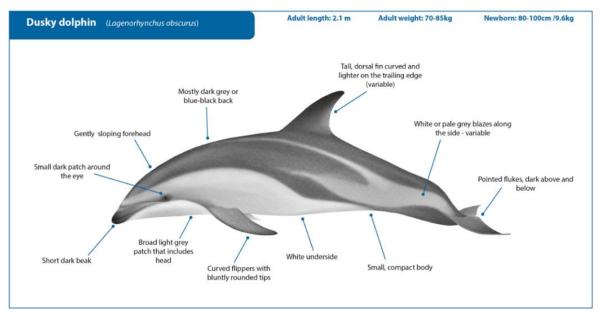


Image credit: IWC (2018) Online Whale Watching Handbook. https://wwhandbook.iwc.int/en/

Characteristics

- Adult length 2.1 m; small, compact body
- Mostly dark grey or blue-black back. White underside. White or pale grey blazes along the side (variable)
- Small dark patch around the eye
- Gently sloping forehead, short dark beak
- Occasional interactions with hoki fishery

Common dolphin (CDD)

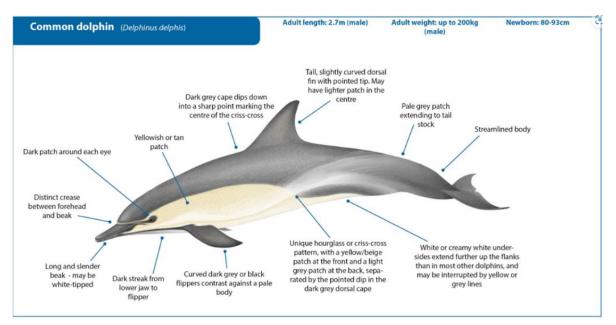


Image credit: IWC (2018) Online Whale Watching Handbook. https://wwhandbook.iwc.int/en/

Characteristics

- Adult length 2.7 m (male); streamlined body
- Yellowish or tan patch on sides. Unique hourglass or criss-cross pattern on sides, with yellow/beige patch at the front and a light grey patch at the back
- Dark patch around the eye
- Distinct crease between forehead and beak. Long and slender beak may be whitetipped
- Occasional interactions with JMA 7 fishery and hoki spawning fisheries

Bottlenose dolphin (BDO)

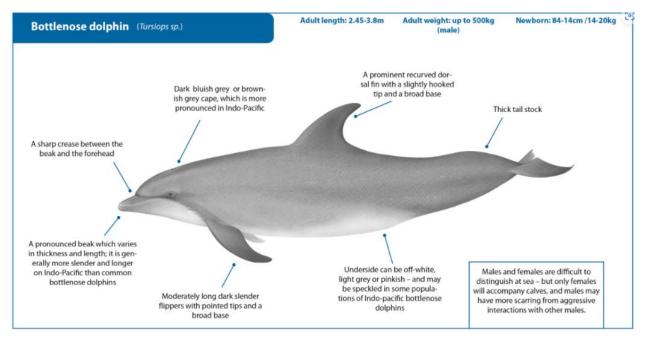


Image credit: IWC (2018) Online Whale Watching Handbook. https://wwhandbook.iwc.int/en/

Characteristics

- Adult length 2.45-3.8 m
- Dark bluish-grey or brownish-grey cape
- Sharp crease between the beak and forehead
- Thick tail stock
- Rarely interact with deepwater fisheries