

Cook Strait Hoki Fishery- Best Practice Information Resource

Introduction

The purpose of this document is to provide a information and training material for improving operational practices to companies (vessels, quota-owners and LFRs) in the Cook Strait hoki fishery

The hoki fishery is Marine Stewardship Council (MSC) certified and this brings significant benefits to the sale of hoki products. However, it also means DWG must to support better practices across ALL the fleet engaged in targeting hoki.

During the past two seasons of monitoring New Zealand fur seal captures other fishing operational issues have been highlighted for improvement.

This resource is to raise awareness for improved overall fishing practices and a better understanding of the nature and extent of fur seal interactions and as far as possible reduce the risk of their capture.

The Cook Strait hoki fishery attracts NZ fur seals which feed around the vessels, particularly while their nets are near the surface during shooting and hauling. As a result, this fishery has the highest reported and estimated number of fur seal captures in observed NZ fisheries.



F.V. Daroni, Unloading Hoki at Picton Wharf

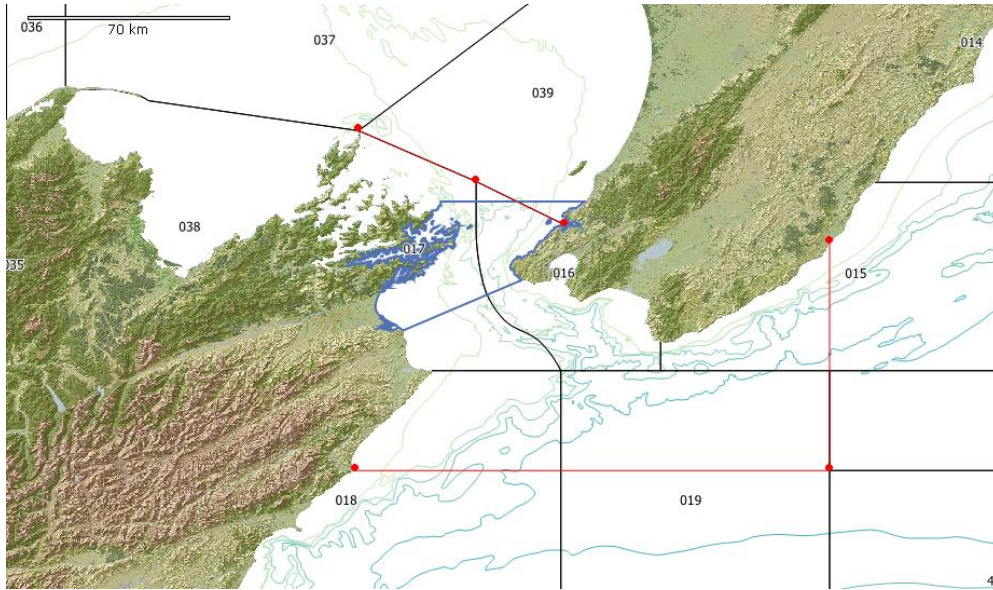


Figure 1: The Cook Strait area considered by the MSC Ecological Risk Assessment (ERA) bounded by red lines, and DWG Hoki Management Area (HMA) bounded by blue lines.

In the 2012/13 fishing year a total of 18,960 tons of hoki was caught in the Cook Strait. In the hoki spawn season (1 June to 30 Sept) a total of 14,693 tonnes of hoki was landed, with July and August being the main catching months. Overall, last hoki season 4,684 tons of hoki was landed by coastal (< 28 m LOA) vessels and 10,009 tonnes by deep-sea vessels during the June-September season. Fishing by deepwater vessels also occurs outside the season (300/500 tonnes/month) with total hoki landings of approximately 4,670 tonnes taken for that period. (Overall hoki catch was up a few thousand tons over past few seasons)

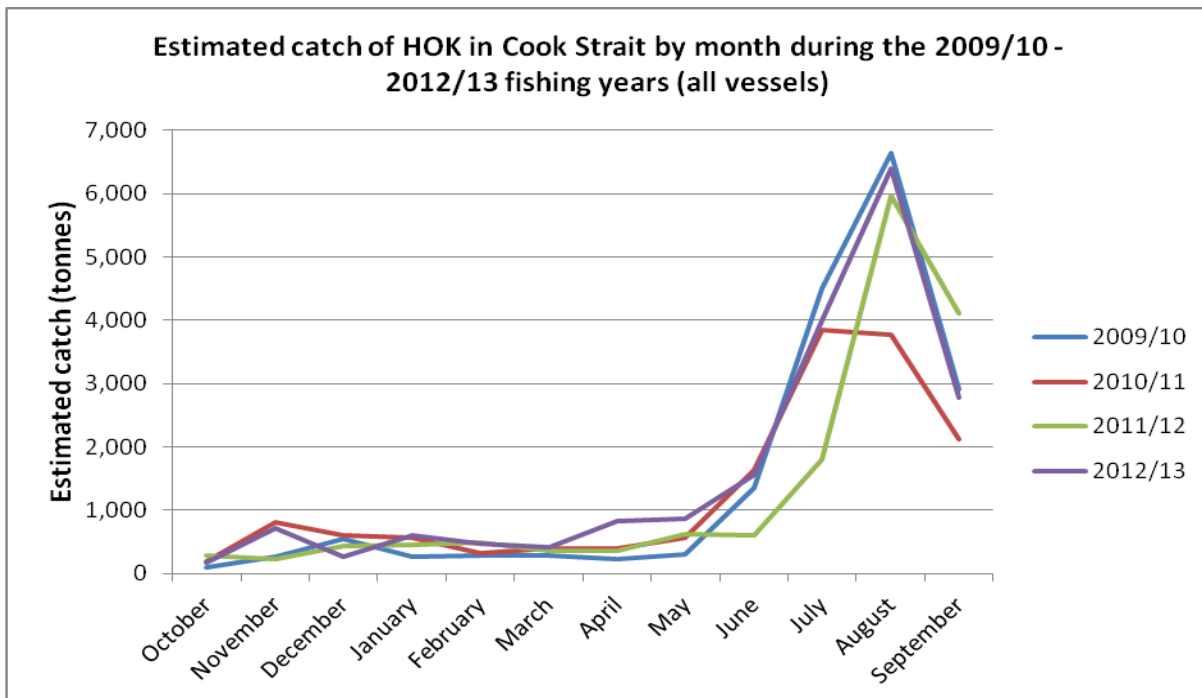


Figure 2: Estimated catch (tonnes) of hoki catch/landed in Cook Strait by month for the last four fishing years by all vessels.

Marine Stewardship Council (MSC)

Hoki was the first 'white fish' approved as MSC certified in 2001. MSC is an independent, global, non-profit organization that certifies and promotes sustainable fisheries to help preserve fish stocks and the surrounding ecosystem components for future generations.



The MSC certificate of approval lets consumers know the hoki has been caught sustainably. Demonstrated environmental care is a key part of the MSC audit and certification process. Seafood retailers are under public pressure to stock fish harvested sustainably, certification of the fishery by MSC gives consumers assurance on sustainability. For industry, it offers significantly better access to more markets and sometimes better prices.

Part of the MSC process required a hoki fishery Ecological Risk Assessment (ERA) to be undertaken; this process identifies risks posed by hoki target fishing on all the elements of the marine ecosystem. The ERA (carried out in December 2010) reported that the risks posed by the hoki fishery to the New Zealand fur seal population were considered as moderate in the Cook Strait fishery due to a lack of information excepting the relatively high levels of reported captures. Even so, the panel saw that there was no indication that captures are affecting the part of the population of NZ fur seals residing in or near the Cook Strait region. Consequently more data collection and analyses needs to be undertaken, in addition to information gathering, it was proposed that an education programme be established to raise awareness among those involved Cook Strait hoki fishery.

Fishing Effort

Vessel category	Catch (tonnes)		Total catch (tonnes)
	Spawn (June-September)	Non-spawn (rest of year)	
Coastal	4,685		4,685
Deepwater	10,009	4,267	14,276
All vessels	14,694	4,267	18,961

Table 1: Estimated catch of HOK from HOK target tows in Cook Strait during the 2012/13 fishing year

Vessel category	Number of HOK target tows		Total Tows
	Spawn (June-September)	Non-spawn (rest of year)	
Coastal	381	0	381
Deepwater	767	780	1,547
All vessels	1148	780	1,928

Table 2: Number of HOK target tows in Cook Strait during the 2012/13 fishing year

Bulk Fishery

A 'bulk' fishery is a high volume fishery with vessels usually targeting dense marks and taking large catches in a short period of time. This requires good fishing skills, seamanship, and practices to ensure careful management of catch size and subsequent handling of catch given the known safe working limits for vessel in often difficult conditions. Fishing operations and the time trawls are towed through the fish 'mark' should be carefully managed to ensure the risk of catch volumes beyond the capability of the gear and vessel are minimised.

Electronic Catch Monitoring Systems

Judging the density of the 'mark' as shown on the sounder, and the amount time the skipper will tow through the 'mark' to ensure required catch volume is dependent on two important factors,

1. The experience level the captain has, his knowledge of the fishery and fishing area
2. Catch monitoring equipment placed on the fishing gear to improve the level of information available to the captain throughout the tow, i.e. headline/net monitor and catch monitoring/catch sensors for real-time catch information updates the captain on the volumes of fish going into the trawl. Vessels also need to recognise the importance of an echo-sounder capable of good mark recognition and description

DWG recommends the deployment of catch monitoring systems in all hoki fisheries, to help reduce possible 'waste' due to prolonged tows when using a window (see below). This will also help improve fish quality, reduce risk of gear damage and loss, minimise the need to tranship excess fish, reduce tow times and therefore improve fishing and energy efficiencies, not to mention the safety issues and the associated risks on the occasions when catch volumes exceed the capabilities of the gear or vessel.

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 ensures safety of the vessel and crew cannot be compromised. Catch volumes exceeding the gear limits can also lead to lengtheners or codends ripping or 'blowing-out' or total gear loss.

Skipper's are reminded windows are not to be used as a way of allowing for poor fishing practice, judgement and seamanship. Rather, they are necessary insurance against mishaps or events where catches cannot be controlled despite best efforts. Simply, fishing through a mark long enough to guarantee the required volume of catch and allowing a window to manage the level of catch is not best practice in this fishery. When a safety window is used and the gear reaches the surface, to prevent any loss of fish at that time this should be closed off or that part of the net brought aboard. Any fish seen lost must always be reported in the vessel's catch log under code 'A' (accidental loss) A window is regarded as a recognised safety measure in many bulk fisheries, but it is not to be used as a volume control measure i.e. multiple windows, opened and closed to regulate tonnage. "Stitched" windows, even when likely to reduce fish loss in certain circumstances, are considered illegal and cannot be recommended.

MPI Approval to Transfer Fish

On occasion a vessel may bring aboard hoki volumes exceeding its fish hold carrying capacity. An MPI special transshipment permit is required (MPI Section 110 (1) of the 1996 Fisheries Act; Approval to land fish by way of Transshipment) to tranship this to another vessel. The receiving vessel must also have the special as well as other MPI fishing permits.

DWG recommends all coastal vessel operators make a permit application prior to the commencement of the season, and that this permit has all other possible vessels listed on it that may receive, or tranship fish.

Once the vessel is issued with a special transshipment permit, during the season if transshipment is required, (to another vessel with a permit which both vessels are listed) No prior notification or transshipment details are required, but the transshipment details must be completed as mandatory required in the CLR form. The vessel that caught and transhipped the fish should report the amount under destination code "T" on their CLR (that amount does not go on the subsequent MHR) and the vessel that received the fish just reports it under code "L" as normal.

Hoki Management Areas (HMA)

The purpose of the DWG Hoki Fishery Operating Procedure is to monitor fishing effort within the agreed Hoki Management Areas (HMAs- Shown in Appendix 2) to protect juvenile hoki. These are areas where there is information to demonstrate the presence of a relatively high abundance of juvenile hoki (i.e. for these purposes, hoki less than 55 cm in total length). Operators and vessels should monitor catches of hoki across the whole QMA and DWG recommends as a matter of principle that vessels move from areas where catches of juvenile hoki (i.e. less than 55 cm in length) comprising more than 20% or more of the hoki catch by number.

Trawlers longer than 28 m LOA are not permitted to target hoki inside any of the HMAs. Vessels > 28 m wishing to target other species within a HMA must report their entry and exit (day/time) to the DWG by email. For the purpose of the Cook Strait fishery it is recommended that all trawlers, regardless in length, should not target hoki in the Cook Strait HMA as this area is well known for juvenile fish. There are no longer any DWG seasonal closures with regard to hoki management in Cook Strait (or West Coast South Island).

Cook Strait Submarine Protection Zone (CPZ)

Cook Strait submarine protection zone protects vital submarine electrical and telecommunication cable links between the North and South Islands. 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 any proven violations of the Act. All fishing vessels fishing in the Cook Strait hoki fishery should have the CPZ co-ordinates 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, (Ken Bedford is the marine patrol manager Phone: 0274770744, patrol vessel MV Sea-patroller Phone: 0274442288)

Fur Seal Captures

The Cook Strait hoki fishery attracts fur seals who feed around the vessels, particularly while their nets are near surface during hauling and shooting. As a result the fishery has the highest number of fur seal captures in NZ.

Fur seals are known to migrate long distances to reach plentiful food sources from bulk fisheries. These provide ample opportunities to access food by scavenging from codends, or seeking damaged hoki, discards of non-quota species, fish accidentally lost from trawl gear failures and offal.

Fur Seal Capture Rate

Table 3: Capture rates (captures per 100 tows) from observer data.

Vessel	Year	# observed tows	# observed captures	Captures/100 tows
Coastal	2012/13	47	29	62
Coastal	2011/12	109	14	13
Coastal	2010/11	57	16	28.1
Coastal	2009/10	88	10	11.4
Deep-sea	2012/13	151	0	0
Deep-sea	2011/12	85	2	5
Deep-sea	2010/11	32	2	6.2
Deep-sea	2009/10	270	7	4.3

Observer Coverage

Table 4: Observed hoki target tows during the last four years

	2009/10	2010/11	2011/12	2012/13
# HOK target tows	1,695	1,573	1,739	1,928
# observed HOK target tows	358	89	194	198
% HOK target tows observed	19.8%	5.6%	11.1%	10.3%

- In 2012/13, deep-sea vessels completed 1547 tows with 151 (9.8%) observed
- In 2012/13, coastal vessels completed 381 tows, with 47 (12.3%) observed

Reporting- NZ Fur Seals

Capture events are very 'random'; with low observer coverage vessels can fish for a fortnight observed with no recorded captures and or the same vessel could capture 8 seals, so there can be a large variance in observed capture rates. This season saw observers placed very late in the season, on a few coastal vessels that were left in the fishery, last few vessels were 'swamped' by seals and record high capture numbers.

The Coastal Fleet

Capture reports from the coastal fleet skippers on the Non Fish Protected Species Catch Return form (NFPSCRs,) has increased (when compared to previous years) which was a huge improvement but still some room for improvement required.

- 50 animals were reported last season in the NFPSCRs with 29 (58%) of these when carrying an observed, with 8 of the 12 vessels reporting captures!
 - Much better reporting from the coastal fleet, a larger number of (unobserved) vessels now report seals when compared to few years ago.
- Last year/season, the strike rate increased greatly to 62 seals for every 100 tows. A lot of this comes down to when and which vessels end up with observer coverage the larger fleet coverage was very early in the season,(mostly even before season begun, with very few seals around...but the coverage in the coastal fleet was late in the season when huge number of seal were observer when hauling, with multiple capture events occurring.

The Deep-Sea Fleet

- 24 animals were reported last season (some from all 4 vessel, most in Sept) in the NFPSCRs with no animals reported when carrying an observed, with all 4 vessels reporting captures
- Reporting/capture rates are consistently high when not observed, observed and unobserved strike rates are closely related, approx-5 seals per 100 tows

Reporting Rules

Under the Marine Mammal Protection Act, it is illegal to harass, kill or deliberately catch any marine mammal. However in commercial fisheries it is not illegal if the capture is accidental and the incident reported. Thus any vessel capturing a fur seal should:

- Return all animals to the sea as soon as possible (unless MPI observer says to keep it)
- Report any marine mammal or seabird incidental by-catch on a Non-fish Protected Species Catch Return (example below)
- Be aware of the DWG reporting trigger points and report to DWG when triggers are reached during the Cook Strait hoki season (see below)

Seabirds

The Cook Strait fishery is relatively low risk to seabirds, with 19 seabird captures last season, 15 from deep-sea vessels and 4 from coastal boats. Much of the fleet are coastal vessels under 28 m LOA which are currently not required to carry and use mandatory bird scaring devices.

DWG recommends all coastal hoki target vessels carry some form of warp mitigation device and have a documented, Seabird Risk Management Plan (SRMP) onboard. DWG will advise and help vessel operator's document and develop a SRMP if requested.

Non Fish / Protected Species Catch Return

Non-fish / Protected Species Catch Return NPC 1234567

- Complete **separate returns** for each fishing trip where non-fish / protected species incidental catch occurs.
- Non-fish / protected species include: corals, sponges, bryozoans, seabirds, marine mammals, marine reptiles and protected fish (see explanatory notes for a detailed list of species).
- Non-fish / Protected species incidental catch**
Complete a **separate row** for each non-fish / protected species caught in a fishing event.

Date tow / set began (dd/mm/yy)	Time tow / set began (24-hr clock)	Form number from catch effort return	Species code	Estimated weight of corals, sponges or bryozoans (kg)	Seabirds / Mammals / Reptiles / Protected fish		
					Number alive, uninjured	Number alive, injured	Number dead
/ /	:			0kg			
/ /	:			0kg			
/ /	:			0kg			
/ /	:			0kg			
/ /	:			0kg			
/ /	:			0kg			
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Use additional pages if you run out of space to record non-fish / protected species incidental catch from this trip.

4. Enter a cross in **one** of the circles to show the MFish catch effort form type used during the trip.
 TCEPR CELR LCER TLCER NCELRL Other → if other, enter the form type used

5. Permit holder and vessel details

Name of permit holder

Client number of permit holder

Name of vessel

Registration number of vessel

I declare that the information I have given on this return is correct and complete, and that I have read and understood the explanatory notes supplied with this return.

Signature of permit holder or authorised person

Date signed / / 20

Send completed returns to PO Box 297, Wellington 6140.

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.

Accurate reporting also gives credibility to individual boats and the industry is quickly exposed when they consistently report lower numbers when not observed.

Under fisheries regulation, you are required to complete and furnish to FishServe a Non Fish Protected Species Catch Return form when you have captured any protected species.

Figure 3: Example page from Non Fish/Protected Species Catch Return

DWG Trigger Points

Trigger points are set by DWG in regard the number of seabirds and marine mammal captures which require the deep-sea and coastal trawlers across all fisheries to take immediate action; the trigger point help crew to assess the seriousness of a major incident or set of continuing smaller incidents when a trigger point is reached.

Hence:

- Crew must take action and where necessary alter practices or deploy additional mitigation measures, and identify why or how the captures are taking place, and work towards reducing the captures at that time
- The vessel must report to their vessel manager, or directly with the DWG for support and advice, on the same day (John Cleal - Phone: 021 305 825)

Trigger Point: Vessels under 28m (deepwater 28m+ vessels already have trigger points)

- **2 fur seals in a single trip**
- **3 seabirds in a single trip**

Handling and Marking - Marine Mammals

Handling Mortalities

- The entire body of any dead mammal must be returned to the sea, unless in the unlikely event an MPI observer on board the vessel directs the Captain to keep it, (they will supply approved hygienic body bags that will allow safe storage in the hold with normal catch).
- Taking or mutilating any part from the body of a marine mammal and keeping it is a serious offence in New Zealand.

Marking and Returning 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 other fishing grounds, but is much less likely in Cook Strait) 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.

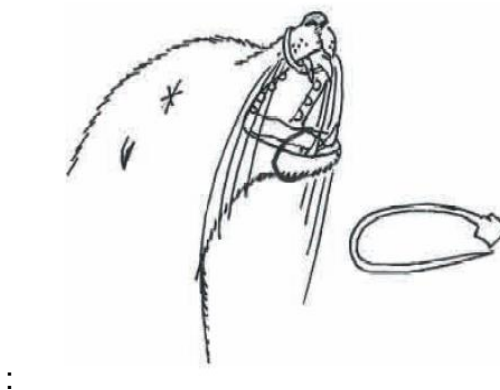


Figure 4: Marking dead fur seal jaw with either twine or cable tie

Handling Marine Mammals – Crew Health & Safety

Fur seals (and sea lions) 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 Betadene.
- After handling any animal wash your hands and forearms with soap or disinfectant
- Wash your deck and gear

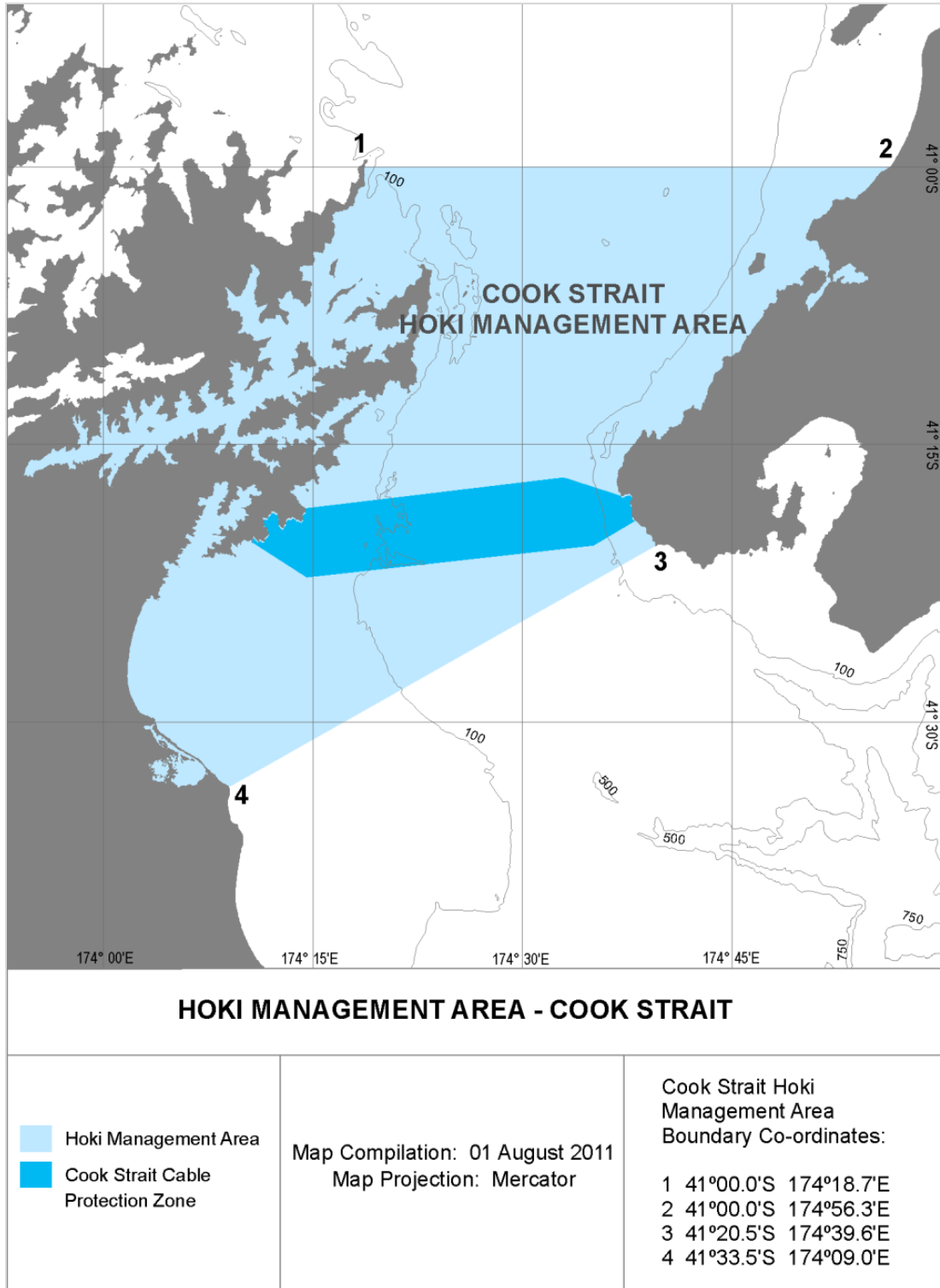
Appendix 1:

10 Commandments for Cook Strait Hoki Fishery

1. Do not target hoki in the Cook Strait Hoki Management Area or ever fish/deploy gear in the Cook Strait Submarine Cable Protection NO GO Zone.
2. A window is a legal vessel and gear safety tool but not a best practice catch volume control tool. Stitched windows are considered illegal and cannot be recommended.
3. Net monitoring systems are recommended and net headline monitors and catch sensors should be deployed, giving 'real-time' catch information.
4. All vessels must have a MPI transshipment permit so that transshipping can be legally undertaken, both vessels involved need a permit and must complete the required details in the CLR
5. Avoid shooting the gear in the midst of large numbers of fur seals
6. 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
7. Avoid discharging offal or fish waste when towing. Always remove fish stickers from the net prior to shooting.
8. All coastal vessels are advised to have a Seabird Risk Plan and deploy a seabird warp mitigation device when there's a risk of warp strikes
9. Mark any dead fur seals with a cable tie or twine tied around the jaw before returning it to the sea, and report all captures of protected species as legally required by MPI on the Non-fish/Protected Species Catch Return at the completion of the voyage.
10. Report (same day) to DWG fur seal capture events (dead or released alive) that meet the trigger point = 2 +fur seals and 3+ large or 5+ small dead sea birds per day. Phone or text, John Cleal 021 305 825

Appendix 2:

DWG - Cook Strait Hoki Management Area



Appendix 3:

Transpower Cook Strait Submarine Cable Protection Zone

