Consultation: Wider rollout of on-board cameras

Fisheries New Zealand
Consultation Document
October 2021

Fisheries New Zealand
Tini a Tangaroa

New Zealand Government

This consultation document presents proposals for the wider rollout of on-board cameras.

Official Information Act

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Any commercially sensitive information provided by submitters will be treated as such but is subject to MPI's disclosure obligations under the Official Information Act. Release decisions under the Official Information Act will be made on a case by case basis.

Timeframe

This consultation will be open for eight weeks from 11 October 2021 until 6 December 2021.

How to respond to this consultation

Please send your consultation responses to one of the below. When sending your feedback please include your name and/or organisation.

Email: onboardcameras@mpi.govt.nz

Digital Monitoring
Ministry for Primary Industries
Charles Fergusson Building
34-38 Bowen St
Pipitea
Wellington
New Zealand

Online at: mpi.govt.nz/camera-consultation

Fisheries New Zealand will be hosting information sessions to discuss the proposals in this consultation. Details on when these sessions will take place will be available on our website: On-board cameras for commercial fishing vessels | Fishing and aquaculture | NZ Government (mpi.govt.nz)

Disclaimer

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How to use this consultation document

We are seeking your views on proposals for the wider rollout of on-board cameras.

Finding your way around the document

The **executive summary** provides an overview of the proposals being consulted on and can be read as a standalone document.

The full **consultation document** provides introductory information on the wider rollout of on-board cameras and the details of the proposals being consulted on. The proposals can be grouped into three categories:

Which vessels are required to operate on-board cameras (scope).

How the rollout will be prioritised across the in-scope fleet (the deployment schedule).

The fishing industry's contribution towards the costs of the wider rollout.

Our approach to the implementation of on-board cameras summarises key information regarding the implementation of the wider roll out of on-board cameras that is not being consulted on but may be of interest (e.g. managing fisher privacy, how review levels will be determined, camera placement).

What next?

Your feedback is important to the wider rollout of on-board cameras. The responses received from this consultation will inform final advice to the Government on scope of the wider rollout, the deployment schedule and industry's contribution.

It is expected that announcements will be made early in 2022, before the start of the rollout.

Minister's foreword

Our oceans are a precious taonga. New Zealand has a rich wealth of marine life, with many species that are found nowhere else in the world.

Oceans and coasts are central to New Zealanders' identity, wellbeing, and prosperity. Iwi/Māori have diverse rights and interests in the marine environment, including rights under fisheries and aquaculture settlements and other relevant legislation.

Most New Zealanders live near the coast and enjoy fishing, boating, swimming, or diving. They go on almost 2 million recreational fishing trips each year and in 2017/2018 are estimated to have caught or gathered over 7 million fish and 3.9 million shellfish.

Healthy marine ecosystems provide essential benefits such as kaimoana, filtering out pollutants, and providing resilience to the effects of climate change including taking up carbon dioxide. In te ao Māori, the mauri or life force of a healthy moana enhances the mauri of those who interact with it.

Commercial fishing plays an important role in New Zealand's economy, contributing $4.2 billion per year in total economic activity. However, there is a growing focus on the impacts of fishing on the broader marine environment.

The previous National Government agreed to put cameras on boats in 2016, after the Heron Ministerial Inquiry reported evidence on the illegal discarding of fish. It was this Government who has progressed these initiatives, with all vessels now required to report electronically and on-board cameras rolled out to trawl and set net vessels off the West Coast North Island. However, more needs to be done to support sustainable fishing practices.

As part of this, the Government is proposing a wider rollout of on-board cameras on up to 300 commercial inshore fishing vessels by 2024. These vessels account for about 85 per cent of the inshore catch, by volume.

Fishing rules are being updated, which, with limited exceptions will require all fish caught to be landed. Cameras on boats will assist with that, in-turn enabling a more nuanced penalty regime. We also know that cameras on boats also assist with more accurate reporting of seabird and marine-mammal captures.

This consultation proposes that the rollout will be staged to prioritise those vessels that pose the greatest risk to protected species such as Hector's and Māui dolphin, black petrel and Antipodean albatross. This consultation will look at what level of contribution the fishing industry should make to the wider rollout and ongoing operation of on-board cameras via cost recovery.

I'm aware that this will mean additional costs for fishers. The rollout's effect on fishers will need to be balanced against the long-term benefits that cameras will provide to all New Zealanders, including the commercial fishing sector.

The wider rollout of on-board cameras will enhance New Zealand's reputation as a producer of premium, sustainable, and trusted seafood. By doing so, we are ensuring that we cast New Zealand as a recognised world-leader and champion of more sustainable fisheries.

Hon David Parker
Minister for Oceans and Fisheries

Executive Summary

1.0

Background

The use of on-board cameras on fishing vessels began about 20 years ago in Canada, with successful voluntary trials operating in New Zealand since the early-2000s.

To increase monitoring capabilities, in June 2021, the Minister for Oceans and Fisheries announced that funding was in place for the wider rollout of on-board cameras. This rollout will build on previous initiatives and place on-board cameras on inshore[1] vessels which pose the greatest risk to protected species and/or take significant amounts of fish bycatch.

The wider rollout of on-board cameras will give greater assurance of sustainable commercial fishing practices by enabling increased monitoring and verification of fishing activity leading to improved fisheries management and positive environmental outcomes.

It will help increase transparency and trust in the seafood sector, improve the quality of fishing data and drive positive on the water behavioural change.

1 The definition of 'inshore' used throughout this document includes all vessels except 'deepwater' trawl vessels (i.e. those greater than 32 metres in overall length or which exclusively target scampi). As such it includes some vessels not always defined as 'inshore' within other contexts e.g. surface longline or purse seine vessels that target Highly Migratory Species (HMS) such as tuna or bottom longline vessels that target ling.

This consultation document seeks your views on the details of the wider rollout including:

- **Which vessels will be required to operate on-board cameras (scope);**
- **How the rollout is prioritised across the in-scope fleet (deployment schedule); and**
- **The fishing industry's contribution towards the costs of the wider rollout and amendments to the Fisheries (Cost Recovery) Rules 2001 to enable this.**

Timeline for on-board cameras

2016 MPI consults on regulating the use of on-board cameras.

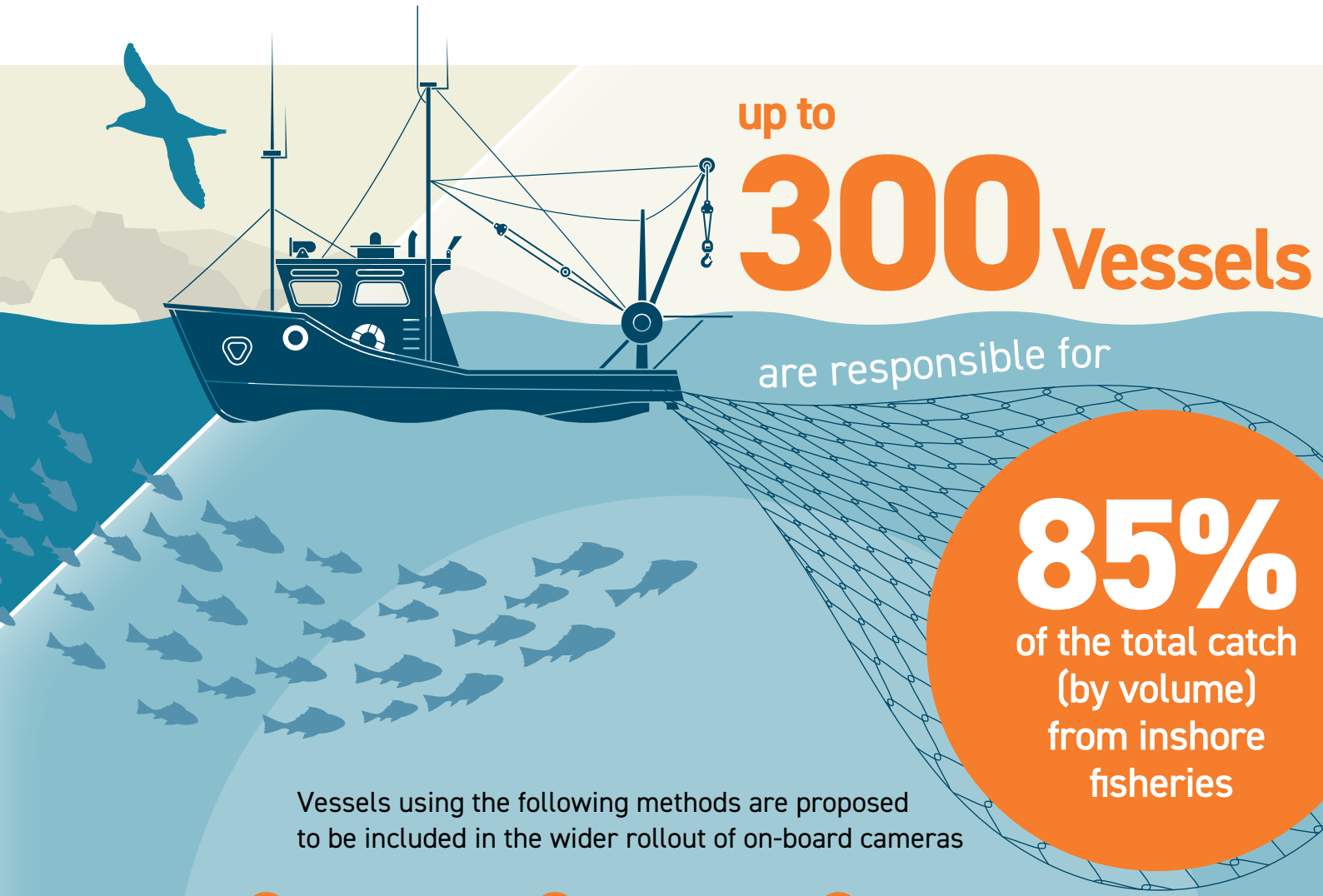
2017 Introduction of the Fisheries (Electronic Monitoring on Vessels) Regulations that required cameras on all vessels from 1 October 2018 (although this date has been subsequently amended to enable the systems and processes to support on-board cameras to be developed).

2019 To verify any interactions with Māui dolphin, cameras were installed on trawl and set net vessels with a history of fishing off the west coast North Island. This initiative was designed as a proof of concept to inform future rollouts.

2021 Announcement of the wider rollout and public consultation.

Proposed scope for on-board cameras

We propose that the wider rollout of on-board cameras is focused on inshore vessels that pose the greatest risk to protected species and/or have significant amounts of fish bycatch.



Vessels using the following methods are proposed to be included in the wider rollout of on-board cameras

Surface longline
All vessels

Bottom longline
All vessels

Trawl
Vessels ≤32m in length except those targeting scampi

Set net
Vessels ≥8m in length

Purse seine
All vessels

Danish seine
All vessels

At this time we're not proposing to place cameras on:

- Deepwater trawl vessels as these vessels are well observed
- Other inshore vessels as these use low volume, more selective fishing methods (e.g. potting) and pose less of a risk to protected species.

These 300 vessels pose the greatest risk from New Zealand fisheries to these protected species:

ANTIPODEAN ALBATROSS

HECTOR'S AND MĀUI DOLPHIN

BLACK PETREL

HOIHO

Have your say

1. Do you agree with the proposed scope for the wider rollout of on-board cameras?
2. Do you agree with the proposal that all in-scope vessels be required to operate an on-board camera or should other factors also be considered e.g. annual fishing activity and operational characteristics?

Proposed Deployment Schedule

We propose that the in-scope fleet be divided into 10 priority groups. This is a risk based schedule based on the risk posed to protected species. The rollout is set to begin in late 2022 with a target completion of 2024. Specific dates are dependent on information and factors not yet available.

2022

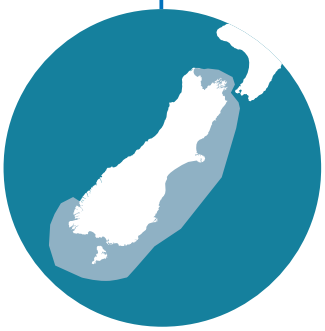
PRIORITY 1
Inshore trawl and set net West Coast North Island
58 Vessels (Approx)

PRIORITY 2
Set net North, East and South Coast South Island
23 Vessels (Approx)

PRIORITY 6
Bottom longline Rest of New Zealand
27 Vessels (Approx)

PRIORITY 7
Inshore trawl Rest of New Zealand
24 Vessels (Approx)

PRIORITY 8
Set net Rest of New Zealand
22 Vessels (Approx)



PRIORITY 3

Inshore trawl
North, East and South Coast South Island

60 Vessels (Approx)

PRIORITY 4

Surface longline
All New Zealand

28 Vessels (Approx)

PRIORITY 5

Bottom longline
Northern New Zealand

28 Vessels (Approx)

PRIORITY 9

Purse seine
All New Zealand

5 Vessels (Approx)

PRIORITY 10

Danish seine
All New Zealand

14 Vessels (Approx)

2024

Have your say

Do you agree with the proposed deployment schedule – if not why not?

Industry contribution towards the costs of the wider rollout

Many of the government-funded services for commercial fisheries such as observer coverage, research and compliance activity have the associated costs recovered from the fishing industry. Over recent years, approximately $35M has been cost recovered from the fishing industry annually.

As the exact costs of the wider rollout are not yet known, we have provided estimated cost information within this consultation paper to enable a genuine discussion on an industry contribution to the rollout of on-board cameras. These costs are estimates only and are based in part, on the costs from the initial rollout of on-board cameras in the West Coast North Island, as well as initial engagement with the market on potential on-board cameras solutions. Final costs will be set through the procurement process, where finding cost efficiencies will be a key consideration.

In line with the government's approach to cost recovery, we consider it appropriate that the fishing industry should contribute to the costs of the wider rollout and propose amending the Fisheries (Cost Recovery) Rules 2001 to enable this.

Based on the approach taken for similar services (such as observers) we propose that industry should contribute to the costs associated with the installation and maintenance of on-board cameras, submission, storage and review of footage and additional fisheries officers.

We recognise the impacts these proposals will have on fishers which is why we propose that industry's contribution towards the costs should be phased in.

We propose that industry contribute at least $10 million for the first four years.

We consider that discussions on the options for cost sharing arrangements for 2025/26 and beyond should take place once the exact details and costs of the wider rollout are known and following the outcomes of the wider review of fisheries cost recovery. This review, due to commence later this year, will consider how cost recovery of fisheries services currently operates and recommend potential improvements.

We propose that costs over the first four years should be recovered from quota owners using a stock specific levy.

We are also seeking feedback on how these proposals will impact iwi, quota owners, vessel owners, permit holders and ACE fishers. This feedback will be used to inform final advice and recommendations.

The costs associated with the wider rollout of on-board cameras are split into 10 cost categories

	Cost categories that should be funded by the Crown	Cost categories that could be recovered from industry
Installation & maintenance of on-board cameras	✗	✓
Submission of footage and data	✗	✓
Storage of footage	✗	✓
Footage review	✗	✓
Compliance Fisheries Officers	✗	✓
Compliance analysts, prosecutions and legal	✓	✗
Fisheries management, science and data management	✓	✗
Artificial intelligence research & development	✓	✗
Other	✓	✗
Project implementation	✓	✗

Consultation on the wider rollout of on-board cameras

2.0

What are we consulting on?

This consultation document seeks your views on the details of the wider rollout of on-board cameras including:

- Which vessels should be required to operate on-board cameras;
- How the rollout is prioritised across the in-scope fleet (deployment schedule); and
- Industry's contribution towards the costs of the wider rollout and amendments to the Fisheries (Cost Recovery) Rules 2001 to enable this.

What's the issue?

Accurate information is necessary for good fisheries management decisions

Fishers are required to provide information on where they fish, how they fish and what they catch. This information is used to inform fisheries management decisions and, following the introduction of electronic catch reporting over recent years, is provided in near real-time.

To ensure that fisheries management decisions deliver long term sustainability outcomes for our fisheries and the marine environment, it is important that information provided by fishers is a true and accurate reflection of what happens at sea. However, there is evidence that this is not always the case. For example, there are differences between the number of protected species captures reported by fishers and those reported by observers or estimated by statistical models.[2]

Experiences have shown that the use of on-board cameras results in more accurate reporting by fishers. Trials in northern New Zealand have shown that twice as many seabird captures were reported by vessels with an on-board camera than without (Tremblay-Boyer & Abraham, 2020), and an analysis of previous camera trials in the Snapper 1 fishery indicated that the rate and quantity of target species reporting increased with an on-board camera system. Likewise, reports of interactions with seabirds and mammals increased seven times when on-board cameras were introduced to Australia's longline fisheries in 2015 (Emery et al, 2019).

Recreational, commercial and customary fishers around New Zealand rely on our fisheries for employment, kai, and recreation.

Commercial fishing plays an important role in New Zealand's economy, **contributing $4.2 billion per year in total economic activity, including $1.4 billion in export revenue for the year ended June 2020.** The seafood industry (including aquaculture) **employs about 13,500 people.**

Commercial fishing is important to many coastal communities and Māori, who collectively hold around **40% of quota shares.**

2 For example, during the 2017/18 fishing year (the most recent year for which data are available) 1,186 (95% confidence interval; 913 – 1,589) seabird captures were estimated to occur in New Zealand bottom longline fisheries. Fishers using the method of bottom longlining reported 168 seabird captures during 2017/18.

Increased confidence in fisher-reported information will result in more responsive and timely decision making, provide greater certainty and result in improvements to the setting of catch levels and other sustainability measures over time.

Reducing the risk to protected species

Fishers use a variety of mitigation measures to reduce the risk posed to protected species.[3] Mitigation includes both technologies (e.g. bird scaring lines) and on-board practices (e.g. offal management).

Experience from deepwater trawl fisheries has shown that high levels of observer coverage have been effective at driving improvements in the use of mitigation. Due to lower levels of independent monitoring, information on mitigation use in other fisheries is uncertain and there is evidence that not all fishers are utilising the best possible mitigation measures.

Increased monitoring capabilities will help ensure that fishers are using mitigation measures that best reduce the risk posed to protected species.

The Department of Conservation will also be able to view footage captured by on-board cameras for the purposes of understanding and reducing the risk to protected species. The specific details of which are being worked through.

Improving at-sea behaviour

Evidence from MPI compliance investigations and independent research demonstrates that illegal discarding and high grading (where fishers discard fish of low value allowing them to land more valuable fish) occurs in some commercial fisheries in the absence of independent verification, although the exact extent to which this occurs is unknown. Such issues are incentivised by market pressures on fishers and are a longstanding problem in some inshore fisheries.

Illegal discarding must be addressed to ensure our fisheries and oceans are abundant and thriving and to improve trust and confidence in the sector.

Whilst steps are being taken to strengthen rules for what fish must be landed, improving the level of independent monitoring will incentivise better at-sea behaviour.

Why use on-board cameras?

To-date, observers have been the primary way to monitor at-sea fishing activity. Observers perform a variety of tasks such as independently confirming data on fish being caught, recording information on protected species captures and collecting biological samples to inform stock assessments.

Observers play a valuable role but there are limits on the ability to scale up observer coverage. This is particularly true on smaller vessels where logistical challenges such as space constraints and weather-related interruptions to fishing activity happen more often compared to larger vessels.

For many fishery data needs, on-board cameras are more cost-effective and more easily scaled to cover a higher proportion of fishing activity when compared to observers. As fishing vessels can be a hazardous workplace, the wider rollout of on-board cameras is likely to result in safer monitoring of at-sea fishing activity.

Observers are placed on both large deepwater trawl vessels and smaller inshore vessels.

Observer coverage rates are relatively high in deepwater trawl fisheries with **greater than 40% of fishing activity** observed each year.

By comparison, observer coverage rates in **inshore fisheries are much lower with less than 5%** of fishing activity typically observed each year.

On-board cameras in New Zealand fisheries

In part due to concerns regarding illegal discarding highlighted by MPI compliance operations and academic studies, public consultation on regulating the use of on-board cameras in New Zealand fisheries took place in 2016. Following this consultation, the Fisheries (Electronic Monitoring on Vessels) Regulations 2017 were introduced which require the use of on-board cameras on all commercial fishing vessels (except those used solely for hand gathering or as a tender for a purse seine vessel). Although a date of 1 October 2018 was initially set, the intent of the regulations was to provide for the phasing of on-board cameras in different fisheries over time.

From 1 November 2019, on-board cameras have been required on trawl and set net vessels, with a history of fishing off the west coast of the North Island, an area where fishing activity overlaps with the distribution of the critically endangered Māui dolphin. This initiative was Crown funded and has been treated as a proof of concept to inform the wider rollout.

The proof of concept demonstrated that on-board cameras could be used to achieve fisheries monitoring objectives and detect interactions with protected species[4]. It also demonstrated that MPI could successfully plan, procure, and implement an on-board camera programme.

3 Protected species include all species protected under the Wildlife Act 1953 or the Marine Mammal Protection Act 1978. Within the context of fisheries this includes all seabirds, marine mammals, marine reptiles, corals and protected fish such as basking shark, white pointer shark and spine-tailed devil ray.

4 The proof of concept also demonstrated that changes to the operating model and legislative/regulatory settings could help generate further benefits in these areas, and these are underway.

The role and benefits of on-board cameras

The role of on-board cameras in creating a strong foundation for a more responsive system was highlighted in the recently released report 'The Future of Commercial Fishing in Aotearoa' from the Office of the Prime Minister's Chief Science Advisor.

Alongside the introduction of electronic catch and position reporting, on-board cameras will support better, more nimble decision making and as technology and artificial intelligence develops there will be further, transformative opportunities.

Further, the increased verification and data provided by the rollout of cameras across the inshore fishing fleet supports a number of the Report's recommendations, particularly improvements in the quality and quantity of data to inform decision making.

The benefits of the wider rollout of on-board cameras include:

Make better decisions: Improved information will provide more certainty and a greater evidence base to inform policy and regulation, scientific research, and fisheries management decisions.	• Greater understanding of what's happening at sea. • Higher level of verification and observation coverage of the inshore fishing fleet. • Footage used to develop intelligence to help inform business decisions across a range fronts, including policy, research, and fisheries management.
Improve information and intelligence: To ensure better quality and quantity of information and improved knowledge and understanding of what is happening at sea.	• Greater understanding of what's happening at sea. • Higher level of verification and observation coverage of the inshore fishing fleet. • Footage used to develop intelligence to help inform business decisions across a range of fronts.
Improve species protection: To promote better management of the marine environment by minimising interactions with protected species including promoting the use of mitigation methods.	• Greater evidence of protected species measures being consistently applied/used. • Camera footage helps inform successful interventions and fishing practices. • Verification of fisher reported protected species capture.
Maintain market access and improve industry's reputation by: • Demonstrating sustainable fishing practices will assist to maintain and enhance overseas market access as demand, and value, for sustainable catch increases. • Increasing transparency and help build trust and confidence in the sector to improve the social license of the fishing industry.	• Evidence of improved industry reputation. • Evidence of improved consumer confidence. • Evidence of new or expanded markets. • Camera footage used to help show how NZ is meeting international obligations relating to protected species and sustainable fishing practices.

Benefits	Outcomes
Change behaviours: By influencing fishers to report accurately and fish in a way that minimises the impact on the marine environment and deter poor handling and illegal discard practices.	• Camera footage informs MPI guidance and advice to sector on behaviours/ practices it is seeing, both good and bad.
Provide a more cost-effective fisheries review and verification capability for Fisheries New Zealand.	• Able to demonstrate more cost-effective approach and cost benefit value to verification, observation, science and research, enforcement and fisheries management (taking into account establishment and ongoing operating costs). • Greater understanding of what's happening at sea. • Higher level of verification and observation coverage of the inshore fishing fleet. • Footage used to develop intelligence to help inform monitoring, enforcement and compliance activity.
Verify and monitor inshore fishing activities such as: • catch composition • interaction with protected species • and landings and discards.	• Higher level of verification and observation coverage of the inshore fishing fleet. • Evidence to substantiate and support fisher self-reporting.

Impact on consumers

Seafood is an important, healthy and nutritious food for New Zealanders, with an estimated 72% of Kiwis purchasing seafood at least once a month. Consumers are becoming more environmentally conscious and want to be assured that the seafood they purchase has been caught sustainably and responsibly. The use of on-board cameras may have an impact on costs and it's possible that any increase could be passed on down the value chain. This could result in an increase in the retail fish prices for consumers.

The impacts of on-board cameras on retail fish prices are difficult to pin-point as there are multiple other factors that affect retail markets. This includes changes to catch limits for key species (such as tarakihi) and the price of food items more generally which are affected by multiple factors including transport and labour costs.

The objectives for on-board cameras

Improve information and intelligence

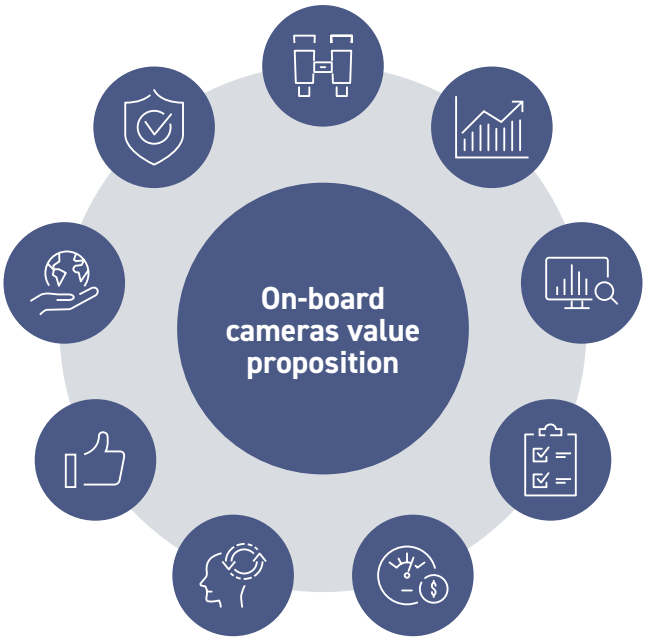
Better quality and quantity of information and improved knowledge and understanding of what is happening at sea.

Improve species protection

Promote better management of the marine environment by minimising interactions with protected species including promoting the use of mitigation methods

Make better decisions

Improved information will provide more certainty and a greater evidence base to inform policy and regulation, scientific research, and fisheries management decisions.



Maintain market access

Demonstrated sustainable fishing practices will help to maintain and enhance overseas market access as demand, and value, for sustainable catch increases.

Verify and monitor inshore fishing activities

Enhanced verification of activities, such as: catch composition, interaction with protected species, and landings and discards.

Improve industry's reputation

Increase transparency and help build trust and confidence in the sector to improve the social license of the fishing industry.

Strengthen monitoring, compliance, and enforcement

Support the integrity of fisheries management to ensure accountability with objective evidence to inform monitoring and enforcement and encourage voluntary compliance.

Change behaviours

Influence the behaviours of fishers to report accurately and fish in a way that minimises the impact on the marine environment and deter poor handling and illgeal discard practices.

Cost efficiency

Provide a cost effective fisheries review and verification capability.

Treaty of Waitangi obligations

Māori have extensive rights and interests in fisheries which are recognised by the Treaty settlement and fisheries legislation. The Crown has entered into settlement agreements which requires the Crown to consult on proposed policy and management measures with iwi in a manner consistent with the principles of the Treaty. These agreements formally record that decision makers need to engage with affected iwi in accordance with the principles of Te Tiriti o Waitangi (Treaty of Waitangi). These principles include:

- Acting in good faith;
- Early engagement on matters for consultation;
- Ensuring sufficient information and time is provided to enable effective participation; and
- Engaging with an open mind and reporting back on the outcome.

How will these proposals impact iwi?

On-board cameras, and other management measures, may impact the cultural, social and economic interests of many of those involved in the fishing industry. We recognise that these proposals will be of particular interest to iwi and may have implications on revenue streams to iwi.

As iwi hold significant amounts of quota, proposals for quota owners to contribute towards the costs of the wider rollout of on-board cameras will impact iwi. To enable a fair transition we are proposing that industry's contribution towards the costs of on-board cameras is phased in over the initial four years of the rollout.

Whilst work is underway to better understand these impacts, through this consultation document, we are seeking further information from iwi on how the wider rollout of on-board cameras will impact iwi rights and interests and what could be done to mitigate any negative impacts.

Further information on the cost recovery proposals can be found in section 5.0.

How can iwi provide input into decision making?

Throughout this consultation, and the subsequent implementation of on-board cameras, focus will be placed on understanding issues of concern to iwi and identifying potential mitigation options.

Information will be provided to Iwi Fisheries Forums with feedback collated and provided to the Minister to inform final decisions.

Te Ohu Kaimoana will be engaged throughout and will be a standing member of the on-board cameras Technical Advisory Group.

Iwi Fisheries Forums have been established to provide for tangata whenua input into fisheries planning and sustainability processes. Many Iwi Fisheries Forums have Iwi Fisheries Forum Plans that describe how Forums exercise kaitiakitanga over the fisheries of importance to them, and their objectives for the management of their interest in fisheries.[5]

Te Ohu Kaimoana Trust is the representative organisation created under the Māori Fisheries Act 2004 to assist in giving effect to the 1992 Fisheries Deed of Settlement and the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.

5 Not all Iwi Fisheries Forums have developed plans at this stage and work in this area is ongoing.

Which fishing vessels will get cameras

3.0

What are we proposing?

The proposed scope for the wider rollout of on-board cameras includes inshore[6] vessels which pose the greatest risk to protected species and/or take significant amounts of fish bycatch.

This includes vessels using the fishing methods of:

- Trawling (on vessels 32 metres or under in overall length except those exclusively targeting scampi);
- Set netting (on vessels 8 metres or over in overall length);
- Bottom longlining;
- Surface longlining;
- Purse seining; and
- Danish seining.

We propose that **all** vessels which use these methods (and meet any relevant length criteria) are required to operate on-board cameras. This would require on-board cameras to be placed on up to 300 vessels based on the current fleet.

You are invited to provide your views on the proposed scope of the wider rollout.

6 The definition of 'inshore' used throughout this document includes all vessels except 'deepwater' trawl vessels (i.e. those greater than 32 metres in overall length or which exclusively target scampi). As such it includes some vessels not always defined as 'inshore' within other contexts e.g. surface longline or purse seine vessels that target Highly Migratory Species (HMS) such as tuna or bottom longline vessels that target ling.

The New Zealand commercial fishing fleet[7]

During the 2019/20 fishing year approximately 860 fishing vessels actively fished within New Zealand waters. The adjacent table broadly characterises the New Zealand commercial fishing fleet and demonstrates the diversity of vessel sizes, fishing methods used, areas fished, and the types of species harvested.

The environmental impact and selectivity of fishing activity varies according to the fishing methods used, with some methods (e.g. longlining, trawling, set netting and seining) resulting in higher amounts of unwanted fish bycatch or higher rates of protected species captures compared to other fishing methods (e.g. hand gathering or potting).

The risk of protected species interactions, or unwanted fish bycatch, also varies according to where fishing occurs. For example, set netting in sheltered inlets such as harbours (typically smaller vessels) typically poses less of a risk to protected species than set netting in coastal waters that overlap with the foraging range of penguins and marine mammals (typically larger vessels).

Trawl vessels	Approximately 30 large (>35 metre) deepwater trawl vessels, most of which process and freeze product on-board. These vessels are generally active in southern offshore waters targeting species such as squid, hoki or orange roughy. Eleven medium-sized (20 – 32 metre) freezer trawlers which exclusively target scampi. Around 120 small-medium sized trawl vessels which generally target species such as snapper, tarakihi or flatfish in inshore waters around New Zealand.
Longline vessels	Three large (>34 metre) bottom longline vessels which process and freeze product on board and target ling in southern offshore waters or toothfish species outside New Zealand waters. Around 90 small-medium (10-30 metre) bottom longline vessels, about half of which predominantly target snapper in northern waters. Approximately 30 medium sized (15-25 metre) surface longline vessels which target highly migratory species such as large tuna or swordfish.
Set net	Between 120 and 130 set net vessels less than 8 metres in length which generally target flatfish or mullet in semi-enclosed waters such as rivers, harbours or estuaries. Between 50 and 60 vessels 8 metres or over in length which fish using the method of set netting for at least part of the year. These vessels primarily target inshore species such as sharks in coastal waters.
Seine	Fourteen Danish seine vessels which target a mix of inshore species in northern waters or off the Canterbury coast. Five, predominantly large (>30 metre) purse seine vessels which target pelagic species such as skipjack tuna or mackerel in northern waters.
Other fishing methods	Approximately • 300 small to medium sized potting vessels which target crayfish or blue cod; • 90 vessels which are used as the basis for diving operations (e.g. pāua); • 30 small-medium sized dredgers which target shellfish species such as bluff oysters or scallops; • 30 small (<6 metre) vessels which target eels on inland waters; and • 150 small to medium sized vessels which seasonally troll for albacore tuna. Almost all these vessels fish using other methods at other times of the year.

7 Note that these numbers will vary over time as vessels enter and exit the sector, and that the total number in the table exceeds 860 due to many vessels using more than one fishing method over the course of the year.

The proposed scope

Prioritising on-board cameras on those vessels which pose the greatest risk to protected species and/or have significant amounts of fish bycatch will best achieve the objectives for the wider rollout. As there are relatively high observer coverage rates on deepwater trawlers, vessels which meet the following criteria are proposed to be within the scope of the wider rollout:

- Vessels using the method of trawling that are 32 metres or under in overall length (excluding those which exclusively target scampi);[8]
- Vessels using the method of set netting that are 8 metres or over in overall length; and
- Vessels using the method of surface longline, bottom longline, Danish seine or purse seine.

The rationale for including these methods and vessels within the scope of the wider rollout is provided (on the next page). Monitoring objectives for the use of on-board cameras in these fisheries will include monitoring protected species captures and interactions, verifying and quantifying the use of protected species mitigation measures and verification of catch and discard activities.

Analysis of the proposed scope

On-board cameras will provide a number of benefits including improving compliance with landing and discard requirements, increasing the reliability of fisher-reported data and reducing the risk to protected species (by promoting the use of mitigation measures).

By targeting on-board cameras at the proposed fleet, we will ensure that the benefits delivered by the rollout will be maximised. This is because fishing methods within the proposed scope are generally less selective, have higher amount of unwanted bycatch and are responsible for:

- Approximately 85% of the inshore catch (by volume), 92% of the inshore finfish catch (by volume)[9] and 56% of the fishing activity conducted by inshore vessels[10]; and
- Almost all of the risk inshore fishing is estimated to pose to protected species.

The status quo, no on-board cameras except for the proof of concept off the west coast North Island, is not being considered. This is because there is no effective or feasible option to address illegal discarding and improve the quality of fisher reporting data across the inshore fleet without the wider use of on-board cameras.

Alternative options for the rollout are not being proposed at this time. This is because there are relatively high observer coverage rates on deepwater trawl vessels and other inshore vessels use methods that are more selective, pose a lower risk to protected species and catch smaller volumes per fishing event.

The costs of the proposed scope are discussed further in section 5.0.

Question 1

What are your views on the proposed scope for the wider rollout of on-board cameras?

8 The proof of concept used registered length, rather than overall length, to define those vessels required to operate on-board cameras under the Electronic Monitoring regulations. However, to ensure consistency with other fisheries regulations and to avoid complications for vessels that do not currently have a registered length, we propose to use overall length for the wider rollout.

9 Finfish includes shark species (e.g. rig or school shark) but excludes invertebrates such as squid.

10 Fishing activity is measured as a proportion of fishing events conducted. The remaining 44% of inshore fishing activity was conducted by set net vessels less than 8 metres in overall length or vessels using out of scope methods such as potting or trolling.

Proposed scope for the wider rollout

Fleet	Which vessels	Why
Inshore trawl	Vessels using the method of trawl that are 32 metres or under in overall length – except those that exclusively target scampi (including bottom trawl, midwater trawl, pair trawling and modular harvesting systems)	• Over half (54%) of fish harvested from inshore fisheries (by volume) is taken by the method of trawling. This includes fish species that are important to both commercial and non-commercial fishers such as snapper (55% of the total snapper catch) and tarakihi (88% of the total tarakihi catch). • Inshore trawl fisheries are characterised by mixed species assemblages. Many inshore trawl fisheries take significant amounts of non-target fish species which can cause bycatch issues in some fisheries. • There are interactions between inshore trawl fisheries and a variety of marine mammal species including Hector's dolphin. • Inshore trawl fisheries pose a risk to a number of seabird species including the 'Nationally Critical' Salvin's albatross and black petrel (the seabird species considered most at-risk from commercial fishing).[11] • Vessels that only target scampi are not included within the scope of the wider rollout of on-board cameras at this time. These vessels are considered deepwater trawl vessels and observers are considered a more effective way of monitoring due to the need to collect biological samples to inform scampi stock assessments.
Bottom longline	Vessels using the method of bottom longline (including trot lining)	• Bottom longlining poses a risk to a number of seabird species including black petrel and the 'Nationally Vulnerable' flesh-footed shearwater. • Monitoring will help ensure adherence to the suite of mitigation measures used to manage interactions between vessels using the method of bottom longlining and seabirds. • Bottom longline fisheries are responsible for a significant amount of fish harvested from inshore fisheries (15%), including 32% of the total snapper catch.
Surface longline	Vessels using the method of surface longline	• There are interactions between surface longline fisheries and a variety of protected species including the 'Nationally Critical' Antipodean & Gibson's albatross, marine turtles (including the critically endangered leatherback turtle) and New Zealand fur seals. • Monitoring will help ensure adherence to the suite of mitigation measures used to manage interactions between vessels using the method of surface longlining and protected species. • Surface longline fisheries are responsible for the majority (95%) of catches of pelagic shark species managed under the Quota Management System (e.g. blue, mako and porbeagle).
Set net	Vessels using the method of set netting that are 8 metres or over in overall length	• Set netting is estimated to pose a risk to a number of protected species including Māui dolphin, Hector's dolphin and hoiho (yellow-eyed penguin). • Improved data collection is also needed to further understand the extent of captures of other vulnerable diving seabirds such as Foveaux shag, Otago shag, northern spotted shag and Fiordland-crested penguin. • Vessels less than 8 metres in length that use the method of set netting are not included within the scope of the wider rollout of on-board cameras at this time. These vessels are typically active within semi-enclosed waters such as rivers and harbours where the risk to protected species is lower.

11 More information on the risk posed to seabirds can be found in the latest iteration of the seabird risk assessment.

Fleet	Which vessels	Why
Purse seine	Vessels using the method of purse seine (on-board cameras would not be required on tenders used whilst purse seining)	• There are interactions between purse seine fisheries and protected species such as dolphins and mobulid rays. • Purse seine fisheries are a high-volume fishery with 25% of the total inshore catch taken through purse seining.
Danish seine	Vessels using the method of Danish seine (including paired Danish seine)	• Danish seining is considered to pose a lower risk to protected species when compared to other in-scope fishing methods. However, little is known regarding interactions between vessels using the method of Danish seining and protected species due to low rates of observer coverage (<1% of activity between the 2010/11 and 2019/20 fishing years was observed). • Danish seine fisheries are characterised by mixed species assemblages. Many Danish seine fisheries take significant amounts of non-target fish species which can cause bycatch issues.

Proposed option

The proposed option for the wider rollout would require on-board cameras to be operated on **all** in-scope vessels.[12] This includes:

- **All** vessels 32 metres or under in overall length using the method of trawl (except those exclusively targeting scampi),
- **All** vessels 8 metres or over in overall length using the method of set net and
- **All** vessels using the method of bottom longline, surface longline, Danish seine or purse seine.

This option would require on-board cameras to be installed on up to 300 vessels based on the current fishing fleet. Given that there are relatively few vessels with on-board cameras worldwide (approx. 1,500),[13] the proposed rollout would represent a significant proportion of the global number of on-board camera enabled vessels. However, it is important to note that this figure of up to 300 is an estimate only with the number of vessels likely to change between now and the final completion of the rollout due to the likely continuation in the trend in decreasing numbers of active vessels and some vessels changing fishing method.

Alternative options

Given the diverse make-up of the in-scope fishing fleet, alternative rollout options have been considered, including prioritising cameras based on levels of annual fishing activity and/or whether operational characteristics may mean observers provide a more effective way of monitoring.

Annual fishing activity

Not all vessels in a fleet conduct the same amount of fishing activity. Some vessels fish year-round and take a higher proportion of the catch whilst other vessels may only fish intermittently. For example, during the 2019/20 fishing year, 87% of the catch from Danish seine fisheries was taken by half the fleet.

A minimum annual fishing activity threshold is applied in the Australian Southern and Eastern Scalefish and Shark fishery where only those set net or longline vessels fishing for more than 50 days per year are required to operate on-board cameras - E-Monitoring (Southern and Eastern Scalefish and Shark Fishery) Direction 2015 (legislation.gov.au).

Introducing a minimum annual fishing activity threshold would result in a reduction in the costs of the wider rollout of on-board cameras. However, the risk posed to protected species and the amount of fish bycatch taken are not directly proportional to the level of fishing activity and vary according to a number of factors such as mitigation used, the fishing gear deployed and when and where fishing takes place. Therefore, to best achieve the objectives of the on-board camera programme, we consider it appropriate to monitor the entire in-scope fleet and not apply minimum annual fishing activity thresholds.

Introducing minimum annual fishing activity thresholds would also require more complex regulations, create an unequal playing field between fishers (as not all would be monitored) and would introduce the potential for reduced monitoring levels if operators amended their fishing activity to remain below any threshold.

12 Note that cameras would only be required to be operated when using in-scope methods.
13 Catalyzing the Growth of Electronic Monitoring in Fisheries PROGRESS UPDATE AUGUST 2020.

Operational characteristics

The bottom longline fleet can be broadly categorized into two groups: large (>34 m) and smaller (<34 m) vessels. Of the approximately 90 vessels that fished using the method of bottom longlining in New Zealand during 2019/20, three can be characterised as large vessels.

Large vessels share a number of operational characteristics with deepwater trawl vessels as they typically fish offshore during multi-week trips and process and freeze product at sea. This, coupled with the relatively small number of vessels, means that the challenges involved in increasing observer coverage do not apply to these larger vessels.

The costs of increasing observer coverage to levels similar to deepwater trawlers are estimated to be similar in magnitude to using on-board cameras to monitor these vessels.[14] Observers can only monitor those fishing events conducted when they are placed on-board a vessel whereas on-board cameras record footage from 100% of fishing events (although not all are subsequently reviewed). As such, we consider that on-board cameras are the most cost-effective method to increase monitoring levels on larger bottom longline vessels.

Question 2

Do you consider it appropriate to require all in-scope vessels to operate on-board cameras? If not, what other factors should be considered?

Next steps

Following consultation, the Fisheries (Electronic Monitoring on Vessels) Regulations 2017 will be amended to reflect the finalised scope of the rollout, removing the requirement for all vessels to operate an on-board camera system.

However, we recognise the need to increase monitoring and verification capabilities across commercial fisheries and consideration may be given to expanding the use of on-board cameras in deepwater and other inshore fisheries to meet specific monitoring objectives over the medium to long term. In recognition of this need, a trial is proposed to assess the feasibility of using on-board cameras as a monitoring tool in rock lobster fisheries. The decisions on the monitoring objectives for this trial, the areas where it would take place and timing are yet to be made and will be determined following engagement with tangata whenua, fishers and other stakeholders.

14 Cost estimates are uncertain and dependent upon the procurement process, footage review levels and whether installing cameras on larger vessels is more expensive (e.g. if more cameras are required).

Schedule of the wider rollout

4.0

What are we proposing?

The rollout of on-board cameras across the in-scope fleet will be phased with different types of vessels required to operate on-board cameras at different times. We estimate it will take over two years to rollout on-board cameras on up to 300 vessels.

We propose that the rollout of on-board cameras across the in-scope fleet is prioritised based on the risk posed to protected species. You are invited to provide your views on the proposed deployment schedule.

The timing of the rollout

It is intended that on-board cameras will be rolled out across the in-scope fleet between late 2022 and 2024. However specific timeframes depend on other requirements, such as selecting a provider through procurement, the availability of hardware and suitable technicians and the approval of new regulations.

The Fisheries (Electronic Monitoring on Vessels) Regulations will be updated with a schedule of dates that reflects the scope of the wider rollout and the deployment schedule approved by the Minister and Cabinet. This will occur after the completion of public consultation and final Cabinet decisions.

The amended regulations will set out the final rollout schedule and will include the phasing of the dates when certain fleets must start operating on-board cameras. We will work with the sector to ensure that all fishers are aware of obligations regarding the use of on-board cameras.

The proposed rollout would be prioritised based on the risk each priority group poses to protected species.

The proposed deployment schedule

The rollout of on-board cameras will need to be phased. This means different vessels will be required to start using on-board cameras at different times. This phased approach is necessary because of the:

- Large number of proposed vessels (up to 300);
- Geographic distribution of in-scope vessels around the entire New Zealand coastline; and
- Likely operational limitations including the availability of suitable personnel to install the on-board camera systems.

It is proposed that the in-scope fleet be divided into 10 priority groups based on the area fishing takes place and the fishing methods used. The proposed **rollout would be prioritised based on the risk each priority group poses to protected species.**

Due to the staged nature of the rollout and current unknowns in relation to the potential service provider(s) and their capacity, the details on when specific fleets would be required to operate on-board cameras will be determined once a service provider(s) is selected.

When planning the rollout, efforts will also be made to avoid scheduling camera installation during the peak periods of highly seasonal fisheries (e.g. the southern bluefin tuna surface longline fishery) to limit the disruption to fishing operations.

Under some circumstances, installing on-board cameras on individual vessels may also be prioritised. For example, where a particular vessel poses a compliance risk or where placing an observer on-board may result in a health and safety concern. These assessments will be made on a case by case basis.

Notes on the proposed deployment schedule:

Priority groups would be defined as combinations of fishing method and area, with all vessels which meet the definition criteria required to operate a camera from the specified date (unless granted an exemption).

Within each priority group a more detailed, risk-based approach may be used to determine the rollout based on a further assessment of risk and other processes. For example, decisions made following public consultation on further measures to manage fisheries risks to Hector's dolphin.

?

Question 3:

Do you agree with the proposed deployment schedule? Are there alternatives that should be considered?

Proposed deployment schedule

Priority group	Fishery	Definition
1	**West coast North Island trawl and set net**	All in-scope vessels using the method of set net or trawl in statistical areas 047, 046, 045, 044, 043, 042, 041, 040, 037, 039 & 016. This covers the west coast of the North Island between Cape Reinga and Cook Strait.
2	**North, east & south coast South Island set net**	All in-scope vessels using the method of set net in statistical areas 038, 017, 018, 020, 022, 024, 026, 025, 027, 029, 030 & 031. This covers the coast of the South Island between Farewell Spit and Fiordland (including Stewart Island).
3	**North, east & south coast South Island trawl**	All in-scope vessels using the method of trawl in statistical areas 038, 017, 018, 020, 022, 024, 026, 025, 027, 029, 030 & 031. This covers the coast of the South Island between Farewell Spit and Fiordland (including Stewart Island).
4	**Surface longline**	All vessels using the method of surface longline regardless of area fished
5	**Northern New Zealand bottom longline**	All vessels using the method of bottom longline in Fisheries Management Area (FMA) Auckland East (FMA 1)
6	**Bottom longline**	All vessels using the method of bottom longline regardless of area fished
7	**Trawl**	All in-scope vessels using the method of trawl regardless of area fished
8	**Set net**	All in-scope vessels using the method of set net regardless of area fished
9	**Purse seine**	All vessels using the method of purse seine regardless of area fished
10	**Danish seine**	All vessels using the method of Danish seine regardless of area fished

15 The number of vessels that would have on-board cameras installed as part of this priority group (based on data from the 2019/20 fishing year and the proposed options for the scope of the wider rollout). Note that does not equal the number of vessels active in a particular fishery – for example, some trawl vessels active off the west coast North Island also fish off the north, east & south coasts of the South Island.

Approx. number of vessels[15]	Rationale for prioritisation
62	We propose to prioritise these vessels above all others to: • Support verification that the new trawl and set net restrictions are effective in managing fisheries risk to Māui dolphin; and • Ensure that Fisheries New Zealand is not running two on-board camera systems simultaneously.
23	We are consulting on a new management approach to manage the remaining fisheries risk to Hector's dolphin, which to be effective, would require the ability to verify protected species capture reporting. As Hector's dolphin and the nationally endangered hoiho are most vulnerable to being caught in set nets, we propose that vessels using the method of set netting off the north, east and south coasts of the South Island are prioritised ahead of trawl vessels operating in these areas.
60	To support the new management approach proposed for South Island Hector's dolphin, we propose that vessels using the method of trawling off the north, east and south coasts of the South Island are placed third on the deployment schedule. Inshore trawl fisheries off the east coast of the South Island also pose a risk to the 'Nationally Critical' Salvin's albatross.
28	We propose that surface longline fisheries are placed fourth on the deployment schedule given the risk posed to at-risk protected species including Antipodean & Gibson's albatross, black petrel and a critically endangered leatherback turtle population.
42	Due to the risk posed to black petrel (the seabird species considered most at risk from fishing) and flesh-footed shearwater, we propose that bottom longline fisheries in northern New Zealand are placed fifth on the deployment schedule.
27	Given the risk that vessels using the method of bottom longlining outside of northern New Zealand pose to seabird species of concern (e.g. Salvin's albatross & Westland petrel), we propose that these vessels are placed sixth on the deployment schedule.
24	We propose that vessels using the method of trawling outside of the above areas are placed seventh on the deployment schedule due to concerns regarding interactions with a variety of protected species including at-risk seabirds such as Westland petrel and marine mammal species including Hector's dolphin off the west coast of the South Island.
14	Interactions between vessels using the method of set netting and protected species outside of areas covered above are little known due to low levels of observer coverage historically. However, set nets are known to pose bycatch risk to marine mammals and diving seabirds such as shags, penguins and petrels/shearwaters, with some populations being highly vulnerable (such as the northern spotted shag population). As such, we propose these vessels are placed eighth on the prioritisation schedule.
5	Due to known interactions with protected rays and dolphin species, we propose that purse seine fisheries are placed ninth on the deployment schedule.
14	Danish seine fisheries are considered to pose the lowest risk to protected species when compared to other in-scope fishing methods. As such, we propose that vessels using the method of Danish seining are placed tenth on the deployment schedule. However, little is known regarding interactions between Danish seine fisheries and protected species due to low rates of observer coverage.

Contribution to the costs of on-board cameras

5.0

What are we proposing?

In line with the government's approach to cost recovery in the fisheries sector, we are proposing that:

- The fishing industry should contribute towards the costs of the wider rollout;
- It is appropriate for the industry to contribute towards the costs of the installation and maintenance of on-board cameras, submission, storage and review of footage and additional fisheries officers;
- The industry contribute $10M over the first four years; and
- That industry's contribution over the first four years is recovered from quota owners using a stock specific levy.

As final costs for the wider rollout are yet to be determined and a wider review of fisheries cost recovery is planned for later this year, we are not proposing to make decisions on the long-term cost recovery settings at this time.

We are also seeking feedback on what proportion of costs should be borne by industry and what the impacts of cost recovery will be on businesses.

Estimated figures are provided to enable a genuine discussion on the cost recovery framework for on-board cameras. It is important to stress that **all figures are estimates only and are subject to inevitable change.** Final costs will be informed by the procurement process to acquire an on-board camera solution during which the seeking of cost efficiencies will be a key requirement.

Introduction

This section sets out the key issues and general approach to how cost recovery could be applied to the wider rollout of on-board cameras. Precise cost recovery charges relating to on-board cameras (whether via a levy or other means) will have their own cost recovery regulatory process.

If decisions are made to recover costs associated with the rollout, we anticipate that the first charges could come into effect from 1 October 2022. The detail of these charges would be consulted on in 2022 and be reviewed on an as needed basis.

Cost recovery elsewhere in fisheries

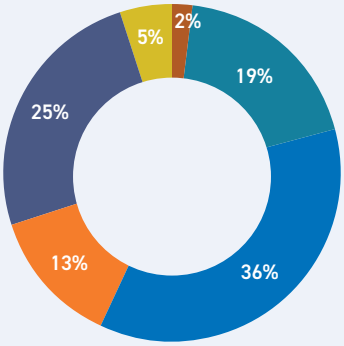
Many of the government funded services and activities for commercial fisheries have the associated costs recovered from the fishing industry.

These services and activities include costs related to compliance activity (e.g. fisheries officers), fisheries research, fisheries observers, and registry services (e.g. Annual Catch Entitlement and quota trading register). Costs associated with policy and fisheries management advice are not recovered.

The average amount recovered annually over the previous three years (including the proposed cost recovery levy for 2021/22) is $35.3M.

This is made up of:

- *Fisheries New Zealand component* – $32.7M; and
- *Department of Conservation* – $2.6M (Fisheries New Zealand recovers on behalf of the Department of Conservation for additional observer coverage and research relating to protected species).



- Compliance
- Observer Services
- Fisheries Research
- DOC Observers
- DOC Research
- Registry Services

Estimated costs of the wider rollout of on-board cameras

To inform initial funding decisions, Fisheries New Zealand undertook financial modelling to estimate the costs of the wider rollout of on-board cameras. As part of the financial modelling, a possible operating model was developed using the lessons learned from the West Coast North Island proof of concept. This operating model split the costs of the rollout into ten cost categories (Table 1).

Government spending is separated into capital costs and operating costs. Only the operating costs of the rollout are being considered for cost recovery.[16]

Of the $68M provided to fund the rollout, operating costs over four years (2021/22 to 2024/25) are estimated to be approximately **$49M**. Table 1 on the following page shows the estimated operating costs of each cost category for the first four years (2021/22 to 2024/25), and from year five (2025/26) onward.

Note that these figures are estimates only and final costs will be set through a Government procurement process to acquire an on-board camera solution and provider, during which the seeking of cost efficiencies will be a key requirement.

16 The capital costs of the wider rollout of the on-board cameras will be funded solely by the Crown. Depreciation and capital charges relating to that capital are included as operating costs.

Table 1: Estimated total operating costs of the wider rollout of on-board cameras.

Note that all these figures are indicative estimates only and final costs will be set through the procurement process during which the seeking of cost efficiencies will be a key consideration.

Cost category		First four-year (2021/22 – 2024/25) indicative operating costs (combined total)		Annual ongoing indicative operating costs (2025/26 onwards)	
		Cost ($M)	% of total	Cost ($M)	% of total
Installation & maintenance of on-board cameras • Installation of cameras and the on-board computer system. • Remediation work to vessels to enable the installation of camera technology (e.g. vessel rewiring). • Ongoing maintenance and replacement of cameras.		$14.5	30%	$6.0*	40%
Submission of footage & data Transferring footage (and associated meta-data) from vessel.		$0.9	2%	$0.4	3%
Storage of footage Storage of footage (and associated meta-data).		$3.3	7%	$1.0	6%
Footage review Review of footage and creation of associated data.		$7.8	16%	$2.4	16%
Compliance Compliance (and any associated legal action).	**Fisheries Officers**	$2.8	6%	$1.2	8%
	Analysts, prosecutions and legal	$2.5	5%	$1.1	7%
Fisheries management, science & data management Fisheries management, science, and data management resources to enable benefits of on-board cameras to be realised.		$3.3	7%	$0.8	5%
Artificial Intelligence research and development Develop and test lower cost and more effective technical solutions e.g. Artificial Intelligence (AI) and machine learning.		$5.0	10%	$1.25	8%
Other Administration activity to support on-board cameras (e.g. OIA requests, Ministerials, IT systems). Call centre as a point of contact for fishers.		$2.8	6%	$1.1	7%
Project implementation Programme management activities and policy advice.		$5.8	12%	$0.0	0%
Total		$48.6	100%	$15.2	100%

* $3.95M of this figure is estimated depreciation and capital charges

Wider cost recovery review

A wider review of fisheries cost recovery is expected to commence in late 2021. This consultation document explores how cost recovery for on-board cameras could be implemented under the current cost recovery framework.

Any proposed changes to the wider cost recovery framework from the review will consider the impact on the cost recovery settings for on-board cameras and recommend what actions need to be taken to ensure that these settings are consistent with any changes proposed by the review.

The case for cost recovery

The framework for cost recovery

The Fisheries Act 1996 (the Act) allows the Ministry for Primary Industries (MPI) to recover the costs of services that either maintain fisheries for industry benefit or that protect the aquatic environment and biological diversity.[17]

The Crown has discretion on whether the costs of services required to maintain fisheries for industry benefit or that protect the aquatic environment and biological diversity, are either fully cost recovered, partially cost recovered or fully funded by the Crown.[18] MPI's cost recovery guidelines are used to assess whether an industry contribution is appropriate. The four principles of the cost recovery guidelines are:

1. *Transparency* – costs are transparent;
2. *Justifiability* – costs are reasonable;
3. *Efficiency* – net benefits are maximised; and
4. *Equity* – costs are fair.

The Fisheries (Cost Recovery) Rules 2001 (the Rules) provide for the recovery of costs for conservation and fisheries services. The Rules specify what proportion of the costs are borne by industry for various services (e.g. 100% of the costs of observer coverage are borne by industry). At present, the Rules do not explicitly detail on-board cameras as a service.

Further information on the how the Act, the Rules and MPI's cost recovery guidelines are applied is provided in the Appendix.

Who benefits and who increases the risks?

The overall approach to cost recovery, is that costs should be recovered from those that benefit from the services ('beneficiaries') and/or those whose behaviour contributes to the need for the services ('risk exacerbators').

Recovering costs from beneficiaries encourages them to request services only where the benefits exceed costs. It also encourages beneficiaries to test services to see whether costs are reasonable and suggest more cost-effective ways of providing the services.

Both the Crown and the general public expect people and businesses responsible for negative impacts on the aquatic environment to contribute to the costs associated with managing them.

Beneficiaries of on-board cameras	Risk exacerbators for our fisheries
On-board cameras will result in better quality information to inform fisheries management decisions. This will improve the management of fisheries resources and the aquatic environment which will benefit both the Crown (public) and the fishing industry. On-board cameras will also benefit industry by providing increased transparency. This will help build trust and confidence in the sector and improve the social licence of the fishing industry.	Some commercial fishing activities (e.g. not reporting catch correctly, illegal discarding or not using mitigation measures to reduce the risk to protected species) increase the risk to both the sustainability of fisheries and to the aquatic environment. Increased verification of at-sea fishing activity using on-board cameras will help address these risks.

17 Section 262 of the Fisheries Act 1996
18 Section 261 of the Fisheries Act 1996

Should industry contribute to the costs of the wider rollout?

Given the above and the approach taken for similar services (e.g. fisheries observers), we propose that the fishing industry should contribute to the costs of the wider rollout of on-board cameras.

We note that this is a different approach than that taken for the proof of concept on-board camera programme which was fully funded by the Crown.

To enable cost recovery, we propose to amend the Fisheries (Cost Recovery) Rules 2001 so that on-board cameras are included as a separate service.

MPI's cost recovery guidelines indicate that not all costs associated with the wider rollout of on-board cameras should be recovered. The basis for this conclusion is addressed in the next section.

Question 4

Do you agree that industry should contribute to the costs of the wider rollout of on-board cameras?

What costs could be recovered?

The costs associated with the wider rollout of on-board cameras are split into 10 cost categories. Based on current costings, the total operating costs of all cost categories is estimated to be approximately $49M over the first four years and $15M per year from 2025/26. Note that these figures are indicative only and we will be seeking opportunities for cost efficiencies both through the procurement process and on an ongoing basis.

Based on the principles of MPI's cost recovery guidelines, we consider that the following cost categories **should be funded by the Crown** (Table 2).

Table 2: Cost categories that should be funded by the Crown

Cost category	Rationale for not recovering costs from industry
Compliance – analysts, prosecutions & legal	Consistent with the current approach, costs relating to prosecutions and related legal advice should not be recovered for justice reasons and to avoid creating perverse incentives. As compliance analysts support both general compliance activities and prosecutions we consider it is not appropriate to recover these costs.
Fisheries management, science and data management	We consider it is not appropriate to recover these costs at this time as, generally, costs relating to Fisheries Management, Science and Data Management resources are not currently recovered. However, subject to the outcome of the wider review of fisheries cost recovery, there may be a case for an industry contribution in the future.
Artificial Intelligence research	This is an area of research and development. As such, the benefits and costs are uncertain, so the case for cost recovery is low.
Project implementation	Recovering these costs would not be appropriate because the implementation costs of regulatory processes should be borne by the Crown.
Other	This cost category includes a variety of different services including the processing of OIA requests and a call centre for fishers. As these costs relate to encouraging participation and compliance with the on-board camera programme, we consider it is not appropriate to recover these costs.

The cost of these five cost categories is estimated to be approximately $20M over the first four years and $4M per year from 2025/26.

Based on MPI's cost recovery guidelines, we consider it is appropriate to recover costs associated with the remaining five cost categories (Table 3). All of these cost categories contribute to improving the management of fisheries resources and the aquatic environment and improving the transparency of the industry.

Table 3: Cost categories that could be recovered

Cost category	Rationale for recovering costs from industry
Installation & maintenance of on-board cameras	Each of these four cost categories forms a fundamental component of using on-board cameras to verify fishing activity. These cost categories are collectively comparable to fisheries observers, the costs of which are currently recovered. Recovering the costs also encourages industry to keep costs low, for example, by reducing camera maintenance costs through better care.
Submission of footage	
Storage of footage	
Review of footage	
Compliance – Fisheries Officers	Costs relating to the activity of fisheries officers in the commercial sector are currently recovered.

The cost of these five cost categories is estimated to be approximately $29M over the first four years and $11M per year from 2025/26.

Further information on whether it is appropriate to recover each cost category is provided in the Appendix.

Question 5

Do you agree that it is appropriate to recover costs for the installation and maintenance of on-board cameras, submission, storage and review of footage and additional fisheries officers?

What proportion of costs should be recovered?

At approximately $29M over the initial four years and $11M per year from 2025/26, the estimated cost of categories that are considered recoverable is substantial.

We recognise that fishers using in-scope methods and vessels are smaller fishing operations in many cases and that an increase in costs could have significant impacts. The recently announced fisheries reform programme (including changes to landings and discards requirements) will also have an impact on fishing practices.

This section considers whether it is appropriate for industry to bear the full costs of categories that are considered recoverable, or whether the Crown should also contribute to these costs.

Fair transition

It will take time for fishers to adjust their fishing operations to meet the new requirements. To ensure the impacts are manageable, we consider a fair transition is appropriate to support the fishing industry over the first four years.

To provide certainty for industry around their share during implementation (a period when costs are likely to differ from estimates), we propose that industry contribute a fixed sum over the first four years.

The proposed option would see the fishing industry contribute at least **$10M towards the first four-year (2021/22 – 2024/25) operating costs** of the wider roll-out of on-board cameras. This represents approximately 35% of the four-year total recoverable operating costs based on current estimates.

The proposed phasing is based on the financial model used to inform initial funding decisions and would see the amount recovered ramping up over the first four years (as shown in the table below). Note that the proposed option would not recover any costs during the 2021/22 fishing year.

2021/22	2022/23	2023/24	2024/25	Total
$0.0M	$2.4M	$3.5M	$4.1M	$10.0M

We are seeking feedback on what the appropriate level of funding should be during the first four years and how it should be phased.

Question 6

Do you agree with the proposed option to recover at least $10M from the fishing industry over the first four years?

Question 7

Do you agree with the proposed option for how these costs are phased across the four years?

Longer term cost recovery

Due to current uncertainties about the total costs of the wider rollout and the future fisheries cost recovery framework (given the wider fisheries cost recovery review), decisions on whether it is appropriate to recover the full costs of categories considered recoverable from 2025/26 are not being proposed at this time. However, in the longer term, it is expected that the Crown's financial contribution will decrease substantially.

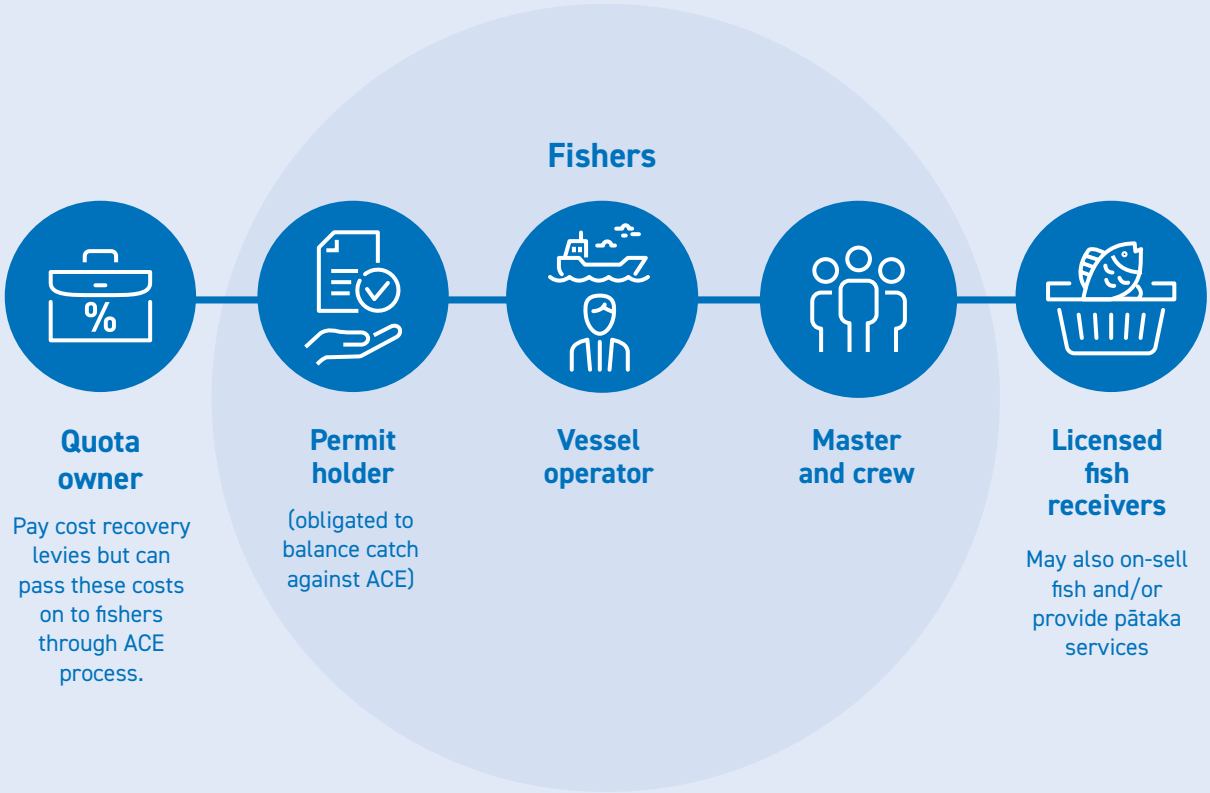
We propose that a further consultation on what proportion of categories considered recoverable is undertaken in advance of 2025/26, once the wider fisheries cost recovery review has been completed and the actual costs of operating the on-board camera programme are known. However, as part of this consultation, we are seeking initial views on what proportion of these costs it might be appropriate to recover.

Who in industry should contribute?

What is the make-up of the fishing industry?

The figure below outlines participants in the fishing industry and how they relate to one another.

Fishing industry – key participants



Quota owners hold the long-term right to harvest a proportion of the Total Allowable Commercial Catch (TACC) for the fish stocks they own quota for.

Permit holders are those companies and individuals who are required under the Act to balance catch against ACE. Permit holders can be quota owners who actively fish their own ACE or 'ACE' fishers who rely on others for the supply of ACE.

What options exist for industry to contribute to the costs?

There are two main methods for recovering costs after they have been incurred by the Crown:

1. Charging quota owners; or
2. Charging permit holders.

Charging quota owners would allocate costs in proportion to the amount of quota held. Permit holders could be charged in proportion to the amount of fish caught or on a per vessel basis.

What is our proposed approach?

We propose that quota owners (including iwi quota owners) be levied for the operating costs of the wider rollout of on-board cameras during the transition period. This approach is considered appropriate because quota owners are the long-term beneficiaries of the harvest of fisheries resources and is consistent with the approach to cost recovering for similar services (e.g. fisheries observers).

Departures from this approach would occur only during special circumstances, such as if a permit holder was found to be repeatedly misreporting catch. In this situation, greater levels of footage review of that permit holder's vessel may be justified. It may also be reasonable for those costs to be charged to the permit holder. We propose that Part 4 (Other fees) of Schedule 2 of the Fisheries (Commercial Fishing) Regulations be amended to enable a fee to be charged in specified circumstances.

However, quota owners can be expected to pass on cost recovery levy increases to fishers through increased Annual Catch Entitlement (ACE) prices (either partially or in full) or through paying lower prices for fish (if the quota owner is also a Licensed Fish Receiver (LFR)). Therefore, it is likely that the costs of on-board cameras will be shared to some extent.

Decisions on whether to recover costs from quota holders from 2025/26 will be made following consultation on the longer-term cost recovery framework for on-board cameras.

Further information on the rationale for recovering from quota holders rather than permit holders can be found in the Appendix.

?

Question 8

Do you agree that costs should be recovered from quota owners? If not, who else in the industry should costs be recovered from?

How could the costs be levied?

The costs of services specified in the Cost Recovery Rules are recovered from quota holders via annual levy orders set for the start of each October fishing year. The allocation of costs between stocks is specified in the Cost Recovery Rules.

Under the Rules, two broad approaches to allocating costs are used:

- ***Stock-specific services:*** **costs are recovered from identified stocks as these quota owners benefit from harvesting the stock, or where there are risks the service addresses (for example, the costs of fisheries research and fisheries observers); and**
- ***General services:*** **costs are recovered from the quota owners of all stocks as they all use and benefit from the service to some extent (for example, compliance).**

What are we proposing?

We propose that industry's contribution during the transition period is recovered using a stock specific levy.

Recovering costs on a stock-specific basis aligns with the cost recovery principles under the Act. It would also mean that quota owners in fisheries that would not be subject to the requirements for on-board cameras (e.g. pāua) would not be levied for these services.

When a stock specific levy is applied, costs are only recovered from the quota owners of identified stocks. It is not possible to provide a final list of identified stocks at this time, as this will depend on final decisions on the scope of the rollout. The table on the following page provides a provisional list of identified stocks, however other stocks not shown may also be levied. Each of the stocks shown on the following page contribute 2% (or greater) of the value[19] taken from at least one of the ten fishing methods and area combinations (priority groups) as used for the proposed deployment schedule.

Regardless of the final list of identified stocks, not all stocks will bear the same proportion of any increase in costs. To ensure that a greater proportion of costs are recovered from higher value stocks, we propose that costs are allocated between stocks using rule 7(3) of the Fisheries (Cost Recovery) Rules 2001.[20] This is consistent with the approach taken for services provided to avoid, remedy or mitigate the risk to the aquatic environment or biological diversity caused by commercial fishing.

Proposals on which stocks would be levied, and the proportion each stock would bear, will be developed following final decisions on the scope of the rollout and be consulted on as part of the levy setting process. This process will also consider whether it is appropriate to levy permit holders for landings of albacore tuna, which whilst responsible for approximately 5% of the value from surface longline fisheries are mostly taken by out of scope methods (trolling).

19 Calculated by multiplying estimated catch from 2019/20 by the port price.

20 Rule 7(3) of the Fisheries (Cost Recovery) Rules allocates costs between identified stocks based on dividing the value of a particular stock by the total value of all identified stocks.

Species	Stocks	Areas
Albacore tuna*	ALB	Nationwide
Barracouta	BAR 1	Upper North Island and east coasts of both islands
Bigeye tuna	BIG 1	Nationwide
Bluenose	BNS 1 & 2	Upper North Island and east coast North Island
Butterfish	BUT 2, 5 & 7	East coast North Island, Cook Strait, Southland and west coast South Island
Elephant fish	ELE 3	East coast South Island
Blue mackerel	EMA 1	Upper North Island
Flatfish	FLA 1 & 3	Upper North Island and east and south coasts of the South Island
Gurnard	GUR 1, 2, 3, 7 & 8	Nationwide
Hoki	HOK 1	Nationwide
Hapuka/Bass	HPB 1, 2, 3 & 4	Upper North Island, east coasts of both islands and Chatham Rise
John dory	JDO 1 & 2	North Island
Jack mackerel	JMA 1	North and east coasts of the North Island
Kahawai	KAH 1 & 2	North and east coasts of the North Island
Kingfish	KIN 8	West coast North Island
Ling	LIN 1, 2, 3, 4, 5, 6 & 7	Nationwide
Moki	MOK 1 & 3	North Island and east and west coasts of the South Island
Orange roughy	ORH 1	Upper North Island
School shark	SCH 1, 3, 5, 7 & 8	Upper North Island, west coast North Island and South Island
Skipjack tuna*	SKJ	Nationwide
Snapper	SNA 1, 2, 7 & 8	North Island, Golden and Tasman Bays and west coast South Island
Rig	SPO 2, 3, 7 & 8	East and west coasts of the North Island and South Island
Stargazer	STA 5 & 7	South and west coasts of the South Island
Southern bluefin tuna	STN 1	Nationwide
Swordfish	SWO 1	Nationwide
Tarakihi	TAR 1, 2, 3, 7 & 8	Nationwide
Pacific bluefin tuna	TOR 1	Nationwide
Trevally	TRE 1 & 7	Upper North Island and west coasts of both islands
Blue warehou	WAR 7	West coast South Island

* *Species not managed through the quota management system.*[21]

Decisions on whether to recover costs using a stock specific approach from 2025/26 will be made following consultation on the longer-term cost recovery framework for on-board cameras.

Question 9

How do you think costs should be levied? Do you agree with the proposal to use a stock specific levy?

21 As such, any cost recovery for these species would follow the current practice of an annual levy for permit holders based on the weight of fish landed.

The impacts of cost recovery

We recognise that cost recovery may have economic impacts on iwi, quota owners, vessel owners, permit holders and ACE fishers.

While quota owners would be levied under the approach outlined above, the costs would likely be shared to some extent among the entire value-chain.

We welcome your feedback on what these impacts mean for you both directly, and indirectly. Your feedback will be used to inform final advice and recommendations.

Impacts on quota owners

Given the proposed scope of the wider rollout of on-board cameras, most of the costs would be levied from inshore and Highly Migratory Species (e.g. tuna) stocks. However, as in-scope vessels also target deepwater species such as hoki and ling at times not all of the costs would be recovered from inshore stocks.

With this in mind, the costs of the wider rollout won't be equally spread amongst all quota holders. The costs borne by quota holders of stocks regularly targeted by in-scope vessels (e.g. SNA 1) will be significantly higher than those stocks targeted rarely. Provisional estimates indicate that more than 50% of quota shares for stocks that would likely be levied for on-board cameras are held by ten quota owners, which includes large seafood companies.

Impacts on permit holders, vessel operators, and master and crew

The fishing industry is complex with unique arrangements for each business. In some cases the permit holder is also the vessel operator and master of vessel whereas in other cases these roles are performed by three separate parties. The unique nature of each individual fishing business makes it difficult to estimate the impact on each of these parties in general terms.

We also note that the impact on these parties will be affected by the impact of cost recovery on other prices such as ACE and fish landed, and these impacts are difficult to estimate.

Impacts on Licensed Fish Receivers

Licensed Fish Receivers (LFRs) are registered with MPI, with most large quota owners also acting as LFRs. The impacts on LFRs will differ based on their business structure and whether they own their own quota or not. If they own quota, LFRs may seek to pass on some of the increase in cost recovery through higher ACE prices or lower prices for fish landed (to the fishers they contract to catch their ACE). Fishing companies who fish their own quota and land to themselves may seek to absorb costs by reducing spending in other areas of their business or seek to charge higher prices for product sold.

In-scope businesses

In-scope fishing businesses contribute approximately $400-$500M in revenue to the national economy per year.[22]

Estimated net profit margins of small to medium fishing businesses range from 15-40% prior to fishers providing themselves with a salary. Note that a greater number of factors impact on the profit and losses of fishers when compared to other primary sector activities.

Factors that impact the profit and loss of small to medium fishers include:

- The variety of ownership/ operating arrangements;
- The mix of fish targeted;
- Variable maintenance;
- Fuel costs between years; and
- Uncertainty in catch.

These factors can result in highly variable profits, both between companies and between years.

The table adjacent provides a snapshot of the cost structure for small to medium fishers, noting that it may not be representative of all the vessels within the proposed scope of the wider rollout of on-board cameras.

Data supplied by Inland Revenue at the sector level (IR10 data)

Income after ACE	$142,000
Purchases and other operating expenses – driven by fuel, insurance, interest	$56,000
Depreciation	$8,900
Repairs and maintenance	$8,600
Salary and wages (excluding owner remuneration)	$15,100
Total expenses	$88,600
Net Profit before owner salary	**$53,800**

The impact of on-board cameras and other fisheries initiatives on fishing operations (particularly those of ACE fishers) is an ongoing area of focus and work is underway to improve the information available to better understand the impact of these management measures on fishers.

Question 10

How do you think the cost recovery proposals will impact your business?

Question 11

Do you have any other comments on the proposals outlined in this consultation document?

22 BERL report: The economic contribution of commercial fishing to the New Zealand economy (January 2017)

Approach to the implementation of on-board cameras

This section provides key information regarding the implementation of the wider roll out of on-board cameras that is not being consulted on but may be of interest.

Procurement

Due to the technical capabilities required, the installation and maintenance of on-board camera systems will be outsourced to an external service provider with the accompanying backend footage upload and storage systems either being outsourced or conducted by MPI. Processes to select the most suitable service provider(s) have recently commenced and are expected to conclude in early 2022.[23]

To ensure evaluation consistency across the procurement responses received, potential service providers are invited to respond based on the current proposed scope and deployment schedule, as set out in this consultation document. Potential service providers are made aware as part of the procurement that the resulting scope and deployment schedule is subject to both consultation and final decisions and may change following this process. This ensures that all submissions are considered, and any changes as a result of the consultation can be reflected in the procurement process outcome.

Ownership and access

On-board camera systems (i.e. the hardware installed on the vessel) will be owned by Fisheries New Zealand or the selected service provider(s).

Fisheries New Zealand will own and manage the footage captured by the on-board camera system.[24] To help fulfil their statutory functions the Department of Conservation will also be a downstream user of information collected by on-board cameras related to protected species- the specific details of this are being worked through.

Footage review

A risk-based approach will be taken to reviewing footage, with different levels of review in different fisheries. It is anticipated that review levels will change over time depending on management objectives and will be subject to an annual prioritisation process.

As part of the business case for the wider rollout and to inform funding decisions, review levels were modelled based on reviewing 100% of footage obtained from areas where vessels may interact with Māui dolphins, 20% of footage obtained from areas where vessels may interact with Hector's dolphin and 10% of all other footage obtained.

However, specific footage review levels will be refined post procurement, and consultation on review levels for specific monitoring objectives will occur as part of the implementation of on-board cameras.

Footage review will be conducted by Fisheries New Zealand.

Privacy

A Privacy Impact Assessment (PIA) was developed for the West Coast North Island proof of concept.[25] An advisory group including representatives from the broader fishing industry and other stakeholders were consulted with, and provided feedback on, the PIA prior to finalisation. We intend to repeat this process as part of the wider rollout of on-board cameras. Detailed information on how the privacy of fishers will be protected will be made available in the PIA.

23 GETS | Ministry for Primary Industries - ROI - On-Board Cameras, Data Management and Associated Services

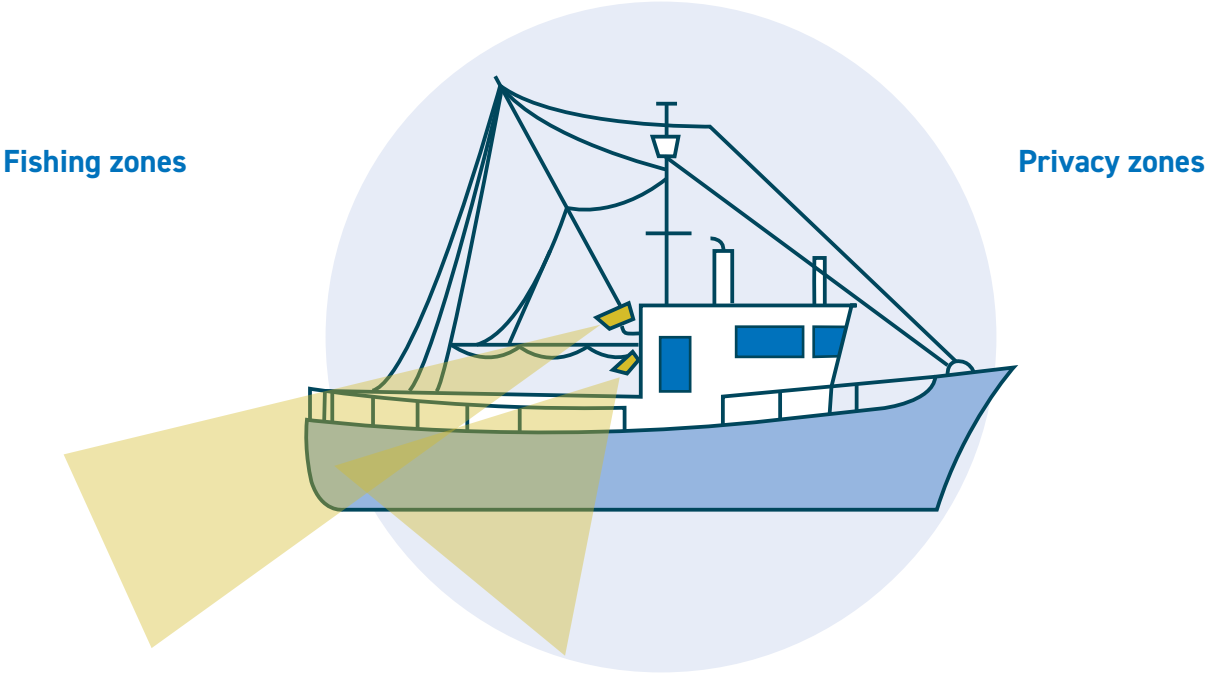
24 The legal entity owning the footage will be the Ministry for Primary Industries.

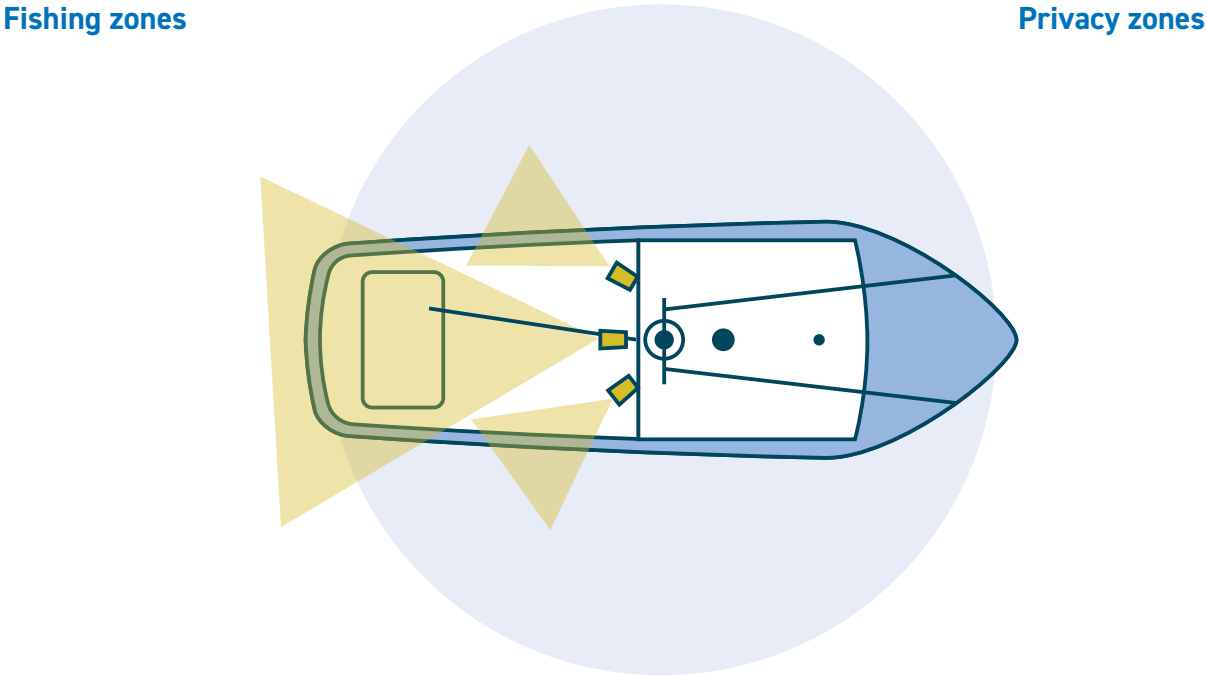
25 39269-On-board-cameras-project-privacy-impact-assessment-19-December-2019 (mpi.govt.nz)

On-board camera placement

Cameras will only be positioned to view those areas of a vessel associated with fishing related activity. The number of cameras on each vessel, and where they are placed, will differ between vessels depending on vessel size and configuration. Technical details regarding on-board camera placement will be specified through a Circular[26] which will be the subject to future consultation. We will work with vessel owners and skippers in each camera installation to ensure they have full transparency and the footage captured is as targeted as possible.

The diagrams below provide an idea of where cameras will be positioned and what the field of view will be.





26 The Circular applicable to the proof of concept on-board camera rollout is available at Fisheries (Electronic Monitoring On Vessels) Circular 2019 (mpi.govt.nz)

How to give your feedback and next steps

This consultation document seeks your views on the details of the wider rollout of on-board cameras, specifically:

- Which fishing vessels will be required to operate on-board cameras;
- How the wider rollout with be prioritised; and
- Industry contribution towards the costs of the wider rollout.

You are invited to make a submission on these proposals. Consultation closes at 5 pm on 6 December 2021.

Written submissions can be emailed to onboardcameras@mpi.govt.nz or posted to

Digital Monitoring
Ministry for Primary Industries
Charles Fergusson Building
34-38 Bowen St
Pipitea
Wellington
6011
New Zealand

An online survey can be accessed at mpi.govt.nz/camera-consultation

In your submission please include your name (or organisation name) and your email (or postal address).

Fisheries New Zealand will be hosting information sessions to discuss the proposals in this consultation. Details on when these sessions will take place will be available on our website: On-board cameras for commercial fishing vessels | Fishing and aquaculture | NZ Government (mpi.govt.nz).

Once this consultation closes and further decisions are made by the Minister, we plan to start the wider rollout of cameras in late 2022.

Appendix: Cost recovery technical material

Legislative and regulatory framework for cost recovery

Cost recovery in fisheries is guided by the cost recovery principles set out in Section 262 of the Fisheries Act 1996 (the Act)[27], the Fisheries (Cost Recovery) Rules 2001[28] and the cost recovery principles set out in MPI's cost recovery guidelines.[29]

Fisheries Act 1996

Section 261 of the Act enables cost recovery, but it does not require cost recovery. If the Crown decides it wishes to recover costs, Section 262 of the Act sets out the cost recovery principles that should be applied. These are:

a) if a conservation service or fisheries service is provided at the request of an identifiable person, that person must pay a fee for the service:

b) costs of conservation services or fisheries services provided in the general public interest, rather than in the interest of an identifiable person or class of person, may not be recovered:

c) costs of conservation services or fisheries services provided to manage or administer the harvesting or farming of fisheries resources must, so far as practicable, be attributed to the persons who benefit from harvesting or farming the resources:

ca) costs of fisheries services relating to any observer performing or exercising a function, duty, or power in accordance with the observer programme must, so far as practicable, be attributed to the persons who benefit from those services:

d) costs of conservation services or fisheries services provided to avoid, remedy, or mitigate a risk to, or an adverse effect on, the aquatic environment or the biological diversity of the aquatic environment must, so far as practicable, be attributed to the persons who caused the risk or adverse effect:

e) the Crown may not recover under this Part the costs of services provided by an approved service delivery organisation under Part 15A.

On-board cameras assist in ensuring the sustainability of commercial fisheries, meaning that principle (c) applies such that costs should be attributed to the fishing industry.

On-board cameras also assist in protecting the aquatic environment from adverse effects. In this case, principle (d) applies which again attributes costs to the fishing industry.

Protection of the aquatic environment could also be argued to be a public good, triggering principle (b) which says that the associated costs should not be recovered (and should be Crown-funded). However, it is arguable on the basis of principle (d) that, in cases where the risk to these public goods is from industry practice, costs should be recovered from industry. This strongly implies that principle (b) is for situations where conservation services are required to protect the aquatic environment from non-industry risks, e.g. an invasive species.

Regardless, the Act only enables cost recovery. The Government can contribute funding for any reason it deems appropriate. If the Government decides to cost recover, the principles in section 262 determine who should and should not pay. For example, the Crown does not have to recover services that protect the aquatic environment from adverse industry practices, but if the Crown does decide to cost recover it must be from industry and not some other group.

This Appendix uses MPI's cost recovery principles (see below) to guide consideration of whether the Government should make a contribution to costs, and if so, for what.

27 Fisheries Act 1996 No 88 (as at 01 April 2021), Public Act 262 Cost recovery principles – New Zealand Legislation

28 https://www.legislation.govt.nz/regulation/public/2001/0229/latest/DLM68474.html?src=qs

29 https://www.mpi.govt.nz/dmsdocument/30855-Ministry-for-Primary-Industries-Cost-Recovery-Policy-Guidance

Fisheries (Cost Recovery) Rules 2001

The Rules provide for the recovery of costs for conservation and fisheries services. The Rules currently provide for the recovery of 100% of the following costs from industry:

- monitoring and offence detection of commercial fishing activities;
- services provided to avoid, remedy, or mitigate that portion of the risk to, or adverse effect on, the aquatic environment or biological diversity of the aquatic environment caused by commercial fishing;
- observer coverage;
- monitoring harvest levels; and
- Quota and commercial fishing administration and registry services, including access and introducing new species into QMS.

If a different approach to the amount of cost recovery is adopted with respect to on-board cameras, the Rules will need to be amended.

Cost Recovery Principles

MPI's four Cost Recovery Principles are:

- ***Transparency*** – costs are transparent;
- ***Justifiability*** – costs are reasonable;
- ***Efficiency*** – net benefits are maximised; and
- ***Equity*** – costs are fair.

Transparency

Transparency means providing adequate information to people such that they can understand charges and have an opportunity to input into their calculation and setting.

Justifiability

Justifiability means charging only reasonable costs. Reasonable costs are those necessary to deliver the service at the quantity and quality required.

Efficiency

Efficiency means charging in a way that maximises benefits and minimises costs.

This includes charging:

- 'Beneficiaries'. Charging parties that benefit from the services encourages parties to demand only services that deliver desired benefits and helps ensure that services aren't provided to such a great degree that costs exceed benefits; and
- 'Risk exacerbators': Charging industry encourages industry to reduce the risks that give rise to the need for the services. Over time, a lower risk will result in less need for regulatory oversight and lower costs.

A further consideration is administration costs. Sometimes a simplified approach is warranted because it would be prohibitively costly or difficult to charge the above parties.

Equity

Equity is about fairness. Unlike efficiency, which is a technical issue which can be argued and established using economic frameworks and facts, fairness is a value judgement.

The Efficiency principle might suggest that one or other party should pay, but fairness considerations mean that the Government might agree to allocate costs in a different way.

Assessment of cost categories

This information supplements information provided on pages 46 and 47 and provides the technical assessment (rationale) of which cost categories should be Crown funded and which could be recovered from the fishing industry.

There are two main reasons for on-board cameras: to help ensure the sustainability of commercial fisheries and to protect the aquatic environment. The discussion below outlines how benefits can be maximised and costs minimised by charging parties that benefit from on-board cameras, parties that contribute to risk (and therefore the need for on-board cameras) or parties than can help identify or generate cost efficiencies.

Beneficiaries

On-board cameras will result in better quality information to inform fisheries management decisions. This will improve the management of fisheries resources and the aquatic environment which will benefit both the Crown (public) and the fishing industry. Charging beneficiaries encourages them to think about what an appropriate level of service should be.

Industry is also a beneficiary of on-board cameras in the sense that it also protects industry's social licence and reputation.

Risk Exacerbators (the party that increases the risks)

Industry is the party that increases the risks to both the sustainability of commercial fisheries and to the aquatic environment.

Cost efficiencies

Government has primary control over the specifications and cost of on-board cameras. However, industry will have some insight into whether categories could be delivered more cost effectively.

Overall

Overall, there is a strong case on the grounds of encouraging risk reduction and benefit maximisation for industry to pay. There are also potentially reasons for the Government to contribute.

The tables on the following pages discusses this in more detail along with what actions MPI could take to achieve the Transparency and Justifiability principles. Being transparent is crucial to enabling industry participation in the ongoing on-board camera programme.

Cost category	Discussion of Efficiency	Discussion of 'Transparency' and 'Justifiability'	Current approach for other services
Camera installation and maintenance	This is a fundamental component of on-board cameras and provides a benefit to industry. On-board cameras will also help address risks caused by commercial fishing activity. Additionally, recovering the installation and maintenance costs would incentivise industry to care for the on-board camera system and provide feedback to optimise on-board set up to reduce costs.	Some of the technical specifications might be difficult for industry test, but industry should have some ability to test the best way of installing and maintaining cameras.	Each of these four cost categories forms a fundamental component of using on-board cameras to verify fishing activity. As such, these cost categories are collectively comparable to fisheries observers, the costs of which are currently recovered.
Submission of footage	This is a fundamental component of on-board cameras and provides a benefit to industry. On-board cameras will also help address risks caused by commercial fishing activity. Additionally, recovering the submission of footage costs would incentivise industry to consider whether MPI's costs are comparable to other data or courier costs they face in the course of operating and provide feedback to MPI.	Transparency of costs by MPI will be important in providing industry with the opportunity to compare data and courier costs with comparable private sector services.	
Storage of footage	This is a fundamental component of on-board cameras and provides a benefit to industry. On-board cameras will also help address risks caused by commercial fishing activity. Storage of footage is a technical issue and, unlike other cost categories, industry's capacity to help reduce costs in likely to be limited.	Storage of footage is a technical IT issue where industry may have limited ability to test costs. As such, MPI will need to carefully consider how to give confidence to industry that costs are justified (e.g. external expert review that the level of service and cost is reasonable).	
Footage review	This is a fundamental component of on-board cameras and provides a benefit to industry. On-board cameras will also help address risks caused by commercial fishing activity. Additionally, industry have the ability to reduce the need for this service by improving on the water behaviour and reducing the risk posed to fisheries resources and the aquatic environment.	Industry will have the opportunity to provide input into how review levels are set.	

Cost category		Discussion of Efficiency	Discussion of 'Transparency' and 'Justifiability'	Current approach for other services
Compliance	Fisheries Officers	Industry has the ability to reduce the need for this service by demonstrating high levels of compliance.	While industry has an interest in the level of compliance effort and its cost, this cost category involves tasks undertaken out of immediate view of industry. MPI will need to give thought to what information it can provide to industry in terms of data and performance metrics to demonstrate that service levels and costs are reasonable.	Costs relating to the activity of fisheries officers in the commercial sector are currently recovered.
	Analysts, prosecutions and legal	Prosecutions and related legal advice should not be cost recovered for justice reasons and not wanting to create perverse incentives. Compliance analysts support both general compliance activities (e.g. by fisheries officers) and prosecutions. To ensure transparency we consider it is not appropriate to recover these costs.		Compliance analysts and prosecution and legal costs are not recovered.
Fisheries management, science and data management		Industry is both a risk exacerbator and beneficiary of services provided in terms of fisheries management and science. However, we consider it is not appropriate to recover these costs at this time as, generally, costs relating to Fisheries NZ's Fisheries Management, Science and Data Management resources (FTEs) are not currently recovered.		Generally not cost recovered although this depends on the specific role of MPI staff.
Artificial Intelligence research		This is an area of research and development. Until the benefits are established and services can be implemented, the case for cost recovery is low.		Not cost recovered.
Other (e.g. NCC call centre, OIAs)		Whether other costs should be recovered should be determined on a case-by-case basis. However, these costs relate to encouraging participation and compliance with the on-board camera programme. To avoid discouraging this and unfairly charging industry, we are not proposing to recover these costs.		Not cost recovered.
Project implementation		Recovering these costs would not satisfy the principle of 'equity' because the implementation costs of regulatory processes should be borne by the Crown.		Not cost recovered.

Who in industry should contribute?

This information supplements information provided on page 50 and provides the technical assessment (rationale) of who should in industry should contribute.

What options exist for industry to make a contribution to costs?

There are two potential methods for recovering costs after they have been incurred by the Crown:

1. Charging quota owners; and
2. Charging permit holders.

How well does each option help maximise benefits and minimise costs?

The discussion below considers how well each option charges beneficiaries and encourages cost reductions through risk reductions or the identification of cost efficiencies.

Beneficiaries

Both quota owners and permit holders benefit from the harvest of fisheries resources. The benefits to any quota owner is proportional to the amount of quota they hold and the benefits to permit holders is proportional to the amount that they fish.

Quota owners hold the right to harvest fisheries resources. However, those permit holders who do not own quota only hold the right to harvest fisheries resources for a single year.

Therefore, charging quota owners for the wider rollout of on-board cameras is better from a beneficiary-pays perspective as they are the long-term beneficiaries of the harvest of fisheries resources.

Risk reduction

The risk fishing poses to the sustainability of fisheries resources and the aquatic environment varies according to a number of factors.

Permit holders can reduce the risk posed to fisheries resources and the aquatic environment by, for example, utilising protected species mitigation measures and correctly reporting catch. Over the long run this could reduce the need for footage review and compliance activity. However, through the provision of ACE, quota owners are able to exert a high degree of control over at-sea fishing activity.

Charging permit holders would be the most efficient way of incentivising risk reduction however this incentive would also be achieved by charging quota owners. However, in terms of specific risk behaviours, there may be justification to allocate costs in a more targeted way. For instance, if an individual operator is found to repeatedly misreport catch (either of protected species or fish species) it may be appropriate to allocate costs of increased footage review of that vessel to the permit holder.

Cost efficiencies

Some of the costs associated with on-board cameras will vary by vessel.

The costs of installation and maintenance of on-board cameras will vary depending on the set up of individual vessels (and how many cameras are required) and how well the operator looks after the cameras. Therefore, charging permit holders would provide the strongest incentive to identify cost efficiencies.

Other costs, such as the submission and storage of footage will vary mostly with the extent of fishing – the more they fish, the more data needs to be submitted and stored. For these cost categories, charging either quota holders or permit holders (on the basis of fish caught) would have similar incentives to charging vessels.

Are there any other relevant issues?

Many small operators may struggle to bear the upfront costs of, in particular, the installation of on-board cameras. As such there is a risk that charging small operators could put them in immediate financial risk.

Quota ownership is often consolidated into several large companies or trusts.[30] As such quota owners are likely better placed to bear the upfront costs and then pass them on to permit holders through increases in ACE price, or decreases in the landed price paid (many quota owners are also Licenced Fish Receivers). Charging quota owners would also be administratively easier.

Similar services (e.g. observers) are currently cost recovered from quota owners.

What is our proposed approach?

There is a strong case for recovering costs from quota owners on a beneficiary-pays basis.

The question is more finely balanced in terms of encouraging risk reduction and cost efficiencies.

Overall, there is a case to charge quota owners or to part-charge quota owners and part-charge permit holders. We do not consider there is a case to charge permit holders only.

While part-charging permit holders would create stronger incentives for cost efficiencies than charging quota owners, on balance, we consider that, it is most appropriate to charge quota owners for the costs of the wider rollout of on-board cameras.

Quota owners are the long-term beneficiaries of the harvest of fisheries resources and are also better placed to bear any upfront costs and pass them on to permit holders. Additionally, charging quota owners will generate some incentive to reduce risk and to find cost efficiencies.

Departures from this approach would be made in extraordinary circumstances, such as if permit holders were found to repeatedly misreport catch.

30 As of September 2021, 66% of quota shares (all stocks combined) are held by 36 companies or trusts (excluding the Crown).

Fisheries New Zealand

Tini a Tangaroa

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