



Annual Operational Plan for Deepwater Fisheries 2017/18

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1 Overview of Deepwater Fisheries Management and Planning process

New Zealand’s Deepwater and Middle-depth fisheries (deepwater fisheries), predominantly occur in offshore waters beyond the 12 nautical mile (nm) limit of the territorial sea. Deepwater fishing activity occurs out to and beyond the 200 nm limit of New Zealand’s exclusive economic zone (EEZ). Deepwater fisheries provided over \$659 million in export earnings from the 2016 calendar year.¹

The Ministry for Primary Industries (MPI) works with stakeholders and tangata whenua to develop management objectives and proposals for deepwater fisheries. Management outcomes are achieved by a collaborative arrangement between MPI (representing the Crown and its statutory obligations to the public) and the commercial fishing industry, represented by the Deepwater Group Ltd (DWG). This arrangement allows for Management Objectives to be achieved by drawing on the combined knowledge, experience, capabilities, and perspectives of both organisations.

Within the portfolio of deepwater fisheries, fish stocks have been categorised into three tiers according to their commercial importance (Table 1). Tier 1 fisheries are high volume and/or high value fisheries and are usually targeted. They are important earners of export revenue, which is reflected in the high quota value associated with these species. Tier 2 fisheries are typically less sizable or valuable bycatch fisheries, are only target fisheries at certain times of the year or are important bycatch to Tier 1 stocks. Tier 3 species are those caught as bycatch that are not managed through the quota management system (QMS).

Table 1: Categorisation of deepwater fish stocks

	Stocks ²	
Tier 1	Hake: all Hoki : all Jack mackerel: JMA3, JMA7 Ling: LIN3 - LIN7 Orange roughy: all	Oreos: all Scampi: all Southern blue whiting: all Squid: all
Tier 2	Alfonsino: all Barracouta: BAR4, BAR5, BAR7 Black cardinalfish: all Deepwater crabs (CHC/GSC/KIC); all English mackerel: EMA3, EMA7 Frostfish: FRO3-FRO9 Gemfish: SKI3, SKI7 Ghost shark, dark: GSH4-GSH6 Ghost shark, pale: all Lookdown dory: all	Patagonian toothfish: all Prawn killer: all Redbait: all Ribaldo: RIB3-RIB8 Rubyfish: all Sea perch: SPE3-SPE7 Silver warehou: all Spiny dogfish: SPD4, SPD5 White warehou: all
Tier 3	Non-QMS species	

¹ Export value based on information from the Seafood New Zealand [website](http://www.seafoodnewzealand.org.nz). (www.seafoodnewzealand.org.nz). For some species (e.g. jack mackerel and barracouta), the value includes all stocks, including those managed in an Inshore Fisheries Plan. Export value is not available for some deepwater species as species-specific information is not supplied by Statistics New Zealand.

² For some species, management of some stocks falls under the National Deepwater Plan and the remainder are managed under the National Inshore Finfish Plan.

From 1 July 2010, the management of New Zealand’s deepwater fisheries has been implemented through the National Fisheries Plan for Deepwater and Middle-depth Fisheries (National Deepwater Plan), which collectively consists of the three parts shown in Figure 1.

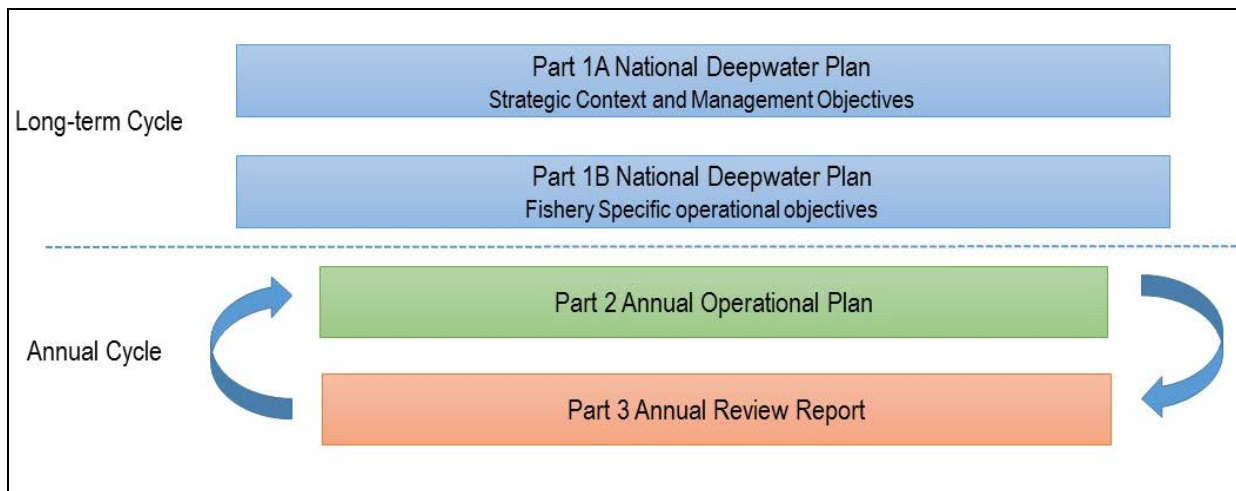


Figure 1: The National Deepwater Plan structure highlighting the long-term cycle of Part 1A and 1B, and the annual cycle of the operational plan and review report. This document relates to Part 2 highlighted in green.

Part 1 of the National Deepwater Plan establishes the enabling framework for the management of New Zealand’s deepwater fisheries. It is further divided into two parts, Part 1A and Part 1B:

Part 1A details the overall strategic direction for New Zealand’s deepwater fisheries. Specifically it describes:

1. The wider strategic context that fisheries plans are part of, including *Fisheries 2030*.
2. The description and status of the management objectives that will apply across all deepwater fisheries.
3. How the National Deepwater Plan will be implemented and how stakeholders will be engaged during the implementation phase.

Part 1A of the National Deepwater Plan was approved by the Minister of Fisheries under Section 11A of the Fisheries Act 1996.³ This means that it must be considered each time the Minister makes decisions or recommendations concerning regulation or control of fishing or any sustainability measures relating to the stocks managed through this Plan.

In line with the five-year term of the National Deepwater Plan published in 2011, Part 1A has been updated to reflect changes and developments since it was first published by the Ministry of Fisheries. The updated National Deepwater Plan (2017) is expected to be published during 2017/18, and the content of this Annual Operational Plan reflects the consultation draft that was released in mid-2017.

Part 1B comprises the fishery-specific chapters of the National Deepwater Plan, which provide greater detail on how deepwater fisheries will be managed at the fishery level, in line

³ The Ministry for Primary Industries became responsible for fisheries as of 30 April 2012

with the management objectives. To date, fishery-specific chapters have been completed for the hoki, orange roughy, oreo, hake, ling, jack mackerel, and southern blue whiting fisheries.⁴

The fishery-specific chapters describe Operational Objectives for each of the Tier 1 target fisheries and the key Tier 2 bycatch species. These chapters also describe any harvest strategies that have been agreed for the relevant species at the time the chapters were written.

Part 2 of the National Deepwater Plan consists of an Annual Operational Plan (AOP) which provides the Management Actions (Part 2A) scheduled for delivery during the financial year, and the Management Services (Part 2B) needed for delivery of those Management Actions.

The AOP is primarily an internal planning and prioritisation document so will not be approved by the Minister for Primary Industries under section 11A. However, advice will be provided to the Minister regarding any statutory interventions required to regulate deepwater fisheries. The contents and structure of this AOP are described in the following section.

Part 3 of the National Deepwater Plan is the Annual Review Report (ARR), which assesses the progress towards meeting the Operational Objectives, Management Objectives and five year priorities described in Part 1 through reviewing delivery of the AOP. The ARR also reports on annual performance of deepwater fisheries against the management approach specified in the AOP.

⁴ All documents referred to on this page and the following page are available at <http://fs.fish.govt.nz/Page.aspx?pk=79&tk=498>

2A Management Actions for 2017/18

This section details the Management Actions that have been scheduled for completion during the 2017/18 financial year. Completion of all of these Actions will contribute to delivery of the Deepwater Management Objectives specified in Part 1A and the fishery-specific Operational Objectives specified in Part 1B of the National Deepwater Plan.

Management Actions led by the Deepwater Fisheries Management Team are provided in Table 2, and are ranked according to priority. Table 3 outlines projects and work areas that the Deepwater Fisheries Management Team will contribute towards but not lead. These projects are led by other teams, either within the Fisheries Management Directorate, or by teams in other MPI Branches. Table 4 outlines the management actions delivered by the Deepwater Team that are initiated by the fishing industry.

Table 2: Management Actions to be delivered by Deepwater Fisheries Management during the 2017/18 financial year

1	Fisheries Sustainability Controls: Review catch limits and management settings as required
<p>Deepwater sustainability decisions consist primarily of reviews of catch limits (TAC and TACC) and deemed value settings across the fish stocks managed within the National Deepwater Fisheries Plan. These are completed in two rounds, one for stocks managed with a fishing year beginning on 1 October and another for stocks with a fishing year beginning on 1 April. Additionally, conversion factors are subject to ongoing monitoring and will be reviewed as required.</p>	
<p>Key Actions for 17/18:</p> <ul style="list-style-type: none"> • Stocks reviewed for 1 October 2017: HAK 7, ORH 3B • Stocks undergoing assessment to be considered for review: <ul style="list-style-type: none"> ○ April 2018: SBW 6B (TBC) ○ October 2018: HOK 1, HAK 1, LIN 5/6, ORH MEC, JMA 7, SCI 3, EMA 7, BAR 4&7, SCI 4, OEO 4 	
<p>Action relates to Management Objectives 1.1, 1.3, 2.1, 2.2, 2.4, 2.5, and 2.6 Action relates to Management Objectives 1, 3, 4, 6, and 10</p>	
2	Fisheries Planning: Implement Updated National Deepwater Plan
<p>The National Deepwater Plan (2010) was reviewed in 2016/17, culminating in a revised National Deepwater Plan being published in 2017. Implementation of the updated National Deepwater Plan for the 2017/18 financial year will include the core activities listed below.</p>	
<p>Core Actions for 17/18:</p> <ul style="list-style-type: none"> • Implement National Deepwater Plan (Part 1A) • Implement Management Objectives within the National Deepwater Plan • Compile the Annual Review Report for 2016/17 • Develop the Annual Operational Plan for 2018/19 • Update/finalise species-specific chapters (Part 1B) for SCI, SQU, HOK, HAK, LIN, ORH, and OEO as resources allow 	
<p>Action relates to all Management Objectives</p>	

3**Ministerial Services:** Ensure timely completion of all Ministerial correspondence and communication requests assigned to the Deepwater Fisheries Management team

The timely completion of all Ministerial correspondence and communication requests is a core government function and will be given priority throughout the year to ensure that all response timeframes are met.

Core Actions for 17/18:

This management action refers to MPI's responsibility to:

- Provide quality advice and information to the Minister for Primary Industries
- Maintain an open relationship with stakeholders and the public and respond to all OIA requests and government correspondence regarding deepwater fisheries issues in a timely manner.

Action relates to Management Objective 9, 10 and 11

4**Protected Species Frameworks - NPOA Seabirds:** Work to achieve the five year practical, biological, research and development, and international objectives within deepwater fisheries

The NPOA Seabirds (2013) sets out the long term and five year objectives relating to managing fisheries interactions with seabirds. The NPOA Seabirds (2013) is underpinned by the New Zealand commercial fisheries Seabird Risk Assessment (SRA) which has identified the seabird species considered to be most at risk of being adversely affected by commercial fishing in New Zealand. The risk assessment also identifies which fisheries pose the most risk to seabird species.⁵

In line with the five year term of the NPOA Seabirds (2013), a review to evaluate progress against the management objectives, the suitability of these objectives, and the effectiveness of the implementation process is planned to commence in 2017. This work will precede the development of a revised NPOA that will be completed in the first half of 2018.

This Management Action outlines the priority seabird work areas for deepwater fisheries in 2017/18 to give effect to the existing NPOA, as well as the work required to review to complete the review and development of a revised NPOA. Further detail on the objectives of the NPOA Seabirds (2013) and how the Deepwater Fisheries Team will support the achievement of those objectives can be found in Part 2B.

Key Actions for 17/18:

- Contribute to the review and drafting of a revised NPOA Seabirds

Core Actions for 17/18:

- Work across the Fisheries Management Directorate, and with key stakeholders, to monitor seabird performance measures including the capture rate reduction targets.
- Report annual performance to inform ongoing progress towards meeting the objectives of the NPOA Seabirds and species specific action plans.
- Continue to implement and refine best practice mitigation measures across the deepwater fleet (with a focus on reviewing the existing VMP audit process for trawl vessels), to minimise interactions with seabirds and support achievement of the practical objectives in the NPOA Seabirds
- Assist with the development and implementation of species and fisheries-specific action plans for seabird species considered to be at 'very high' or 'high' risk from fishing, to work towards achieving the biological risk objective in the NPOA Seabirds
- Investigate and implement any additional practicable and effective measures to minimise the risk of net captures based on the outcomes of the contracted project characterising trawl net captures and potential contributing factors
- Continue to work with DWG to develop educational material and additional mitigation measures specific to 'very high' and 'high' risk seabird species to support achievement of the objectives in the NPOA-Seabirds

⁵ The NPOA Seabirds can be accessed here (www.mpi.govt.nz/document-vault/3962) while the SRA can be accessed here (www.mpi.govt.nz/document-vault/10523)

Action relates to Management Objective 2.5
Action relates to Management Objective 8 and 10

5 Protected Species Frameworks – Work collaboratively with the Department of Conservation on implementation of the New Zealand Sea Lion / Rāpoka Threat Management Plan

The New Zealand sea lion is classified as 'Nationally Critical' due to annual pup counts declining by 50% between 1998 and 2009 at the largest breeding sites on the Auckland Islands. The New Zealand Sea Lion/Rāpoka Threat Management Plan will prioritise management actions to enable the recovery of the sea lion population.⁶

Key Actions for 17/18:

- Work with DOC to finalise and implement the New Zealand Sea Lion / Rāpoka Threat Management Plan
- Engage with key stakeholders at the New Zealand Sea Lion / Rāpoka Forum and Advisory Group
- Continue stakeholder engagement on SQU6T Operational Plan management settings through the Squid 6T Operational Plan Technical Advisory Group
- Finalise SQU6T Operational Plan for 2017/18-2018/19

Core Actions for 17/18:

- Plan and initiate review of Operational Plan for the Campbell Island southern blue whiting fishery
- Monitor adherence to Operational Plans and continue standard weekly reporting to stakeholders for SQU 6T
- Monitor research and management actions as recommended by the Squid 6T Operational Plan Technical Advisory Group

Action relates to Management Objective 2.5
Action relates to Management Objective 8 and 10

6 National Plan Frameworks – Implement components of the National Plan of Action for Sharks (NPOA Sharks) relevant to deepwater fisheries

The NPOA Sharks (2013) sets out goals and accompanying 5 year objectives to support the conservation and management of sharks. A qualitative risk assessment of all shark species was completed in December 2014, which informs prioritisation of management actions and research.⁷ This Management Action is focused on achieving objectives of the NPOA Sharks, and addressing at-risk species identified in the risk assessment.⁸ A review of the NPOA Sharks will begin in early 2018 to produce a revised NPOA Sharks.

Key Actions for 17/18:

- Contribute to the review of the NPOA Sharks (2013)
- Monitor and review the regulatory framework that governs shark processing and landing, and review shark fin ratios
- Contribute, where necessary, to the qualitative risk assessment update in late 2017 to precede the NPOA Sharks review in 2018.

Core Actions for 17/18:

- Support and contribute to the review of management categories for shark species and implement any

⁶ Information on the sea lion TMP is available here <http://www.doc.govt.nz/nature/native-animals/marine-mammals/seals/new-zealand-sea-lion/docs-work/new-zealand-sea-lion-rapoka-threat-management-plan/>

⁷ The shark risk assessment is available at www.mpi.govt.nz/document-vault/9803

⁸ The NPOA Sharks is available at www.fish.govt.nz/en-nz/Environmental/Sharks/default.htm

- recommendations for QMS introduction or protection as required
- Implement the NPOA Sharks Implementation Plan across the fisheries management directorate in conjunction with DOC and MFAT
- Support progression and delivery of the quantitative risk assessment and subsequent prioritisation as required
- Continue to work with stakeholders to avoid captures of protected shark species in deepwater fisheries and maximise survival of captured protected shark species
- Engage as required on the CMS Sharks MOU (Memorandum of Understanding on the Conservation of Migratory Sharks)⁹ and ensure that New Zealand's shark management is consistent with the Sharks MOU and its conservation plan
- Improve the awareness of fishers to the need for accurate shark reporting to reduce the usage of generic shark reporting codes

Action relates to Management Objectives 1.6, 2.4, 2.5 and 2.6
Action relates to Management Objectives 6, 8 and 10

7 Benthic Framework – Benthic Invertebrates: Monitor and measure the nature and extent of benthic interactions with deepwater fishing activity

The current approach to managing the effects of fishing on deepwater benthic communities is through closure of large areas of the EEZ to bottom trawling. The level of interactions between deepwater vessels and benthic invertebrates is monitored by MPI observers. The trawl footprint is also monitored each year and the most recent information available is reported in the ARR.¹⁰

Key Actions for 17/18:

- Support the development of objectives and/or framework for management of benthic impacts of deepwater fisheries
- Provide support to the development of the Benthic Risk Assessment

Core Actions for 17/18:

- Monitor the trawl footprint of all deepwater species and report on any new areas trawled in the ARR
- Report in the ARR the volume and species (where possible) of benthic species captured and consider management if required.

Action relates to Management Objective 2.7
Action relates to Management Objective 7, 8 and 10

8 Engagement: Ensure sufficient and appropriate engagement with tangata whenua and stakeholders

Sufficient and appropriate engagement with tangata whenua and stakeholders is an integral part of fisheries management. Engagement aims to ensure deepwater fisheries management information is available and accessible for all stakeholders and to provide opportunity for input and participation in the deepwater fisheries planning process and the ongoing management of deepwater fisheries for tangata whenua.

Core Actions for 17/18:

- Ensure input and participation of tangata whenua and respond to/incorporate feedback as necessary.
- Advise MPI representatives attending Iwi Fisheries Forums of upcoming consultations.
- Engage with stakeholders through the Fisheries Plan Advisory Group on issues, processes, and

⁹ CMS Sharks website is available at www.cms.int/sharks/en

¹⁰ The most recent trawl footprint report is available at <http://cs.fish.govt.nz/forums/thread/12520.aspx>

- management decisions relating to deepwater fisheries.
- Maintain an open and transparent management environment by ensuring that all management information is available and accessible on MPIs website for stakeholders and tangata whenua consideration.

Action linked to Management Objectives 1.6 and 1.7

Action linked to Management Objectives 9, 10 and 11

9 Deepwater Research Planning: Finalise and agree research commitments for the 2018/19 year and determine future approach to research planning and procurement

In 2016/17, MPI initiated a process to form a Deepwater Research Panel of pre-qualified research providers. This Panel will enable a streamlined approach to the market for the deepwater fisheries research programme, allowing MPI to engage directly with pre-qualified suppliers whilst meeting its obligations under the Government Rules of Sourcing. The Deepwater Research Panel will also provide more certainty to research providers, enabling a return to longer term contracting and reducing administration and risk of delays in the contracting process.

Core Actions for 17/18:

- Monitor research projects to ensure delivery remains on track to provide results that will support fisheries management.
- Finalise and agree the deepwater fisheries research programme, including any proposals for industry-led research, for delivery during the 2018/19 financial year before December 2017.
- Provide the option for Fisheries Management Directorate projects to implement a new approach to research planning and procurement, including a return to longer term contracting for routine trawl surveys.

Action linked to Management Objectives 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.2, 2.4, 2.5, 2.6, and 2.7

Action relates to all Management Objectives

10 Deepwater Monitoring: Deepwater Observer Coverage/sampling requirements for 2017/18 and 2018/19

Observer coverage of deepwater fisheries is planned by financial year and is based on biological sampling requirements and percentage-level targets. Coverage is monitored throughout the year to ensure information is available to support stock assessments and to understand interactions with protected species.

Key Actions for 17/18:

- Identify future observer coverage needs to inform more long term planning
- Develop coverage and sampling targets for each of the next five years to align with the deepwater fisheries research programme

Core Actions for 17/18:

- Liaise with industry to acquire quarterly fishing plans to support observer coverage planning
- Ensure observer briefing documents are up to date and that appropriate sampling is undertaken in accordance with biological targets
- Monitor observer coverage delivery against the plan to ensure coverage targets and biological sampling needs are met
- Develop the observer coverage plan for 2018/19

Action linked to Management Objectives 1.1, 1.3, 1.4, 1.5, and 2.5

Action linked to Management Objectives 1, 2, 3, 6, 7 and 10

11 Registry Services: Implement the Fisheries (Foreign Charter Vessels and Other Matters) Amendment Act 2014, the Foreign Charter Vessels (FOV) registration process and risk based observer coverage

The Deepwater Fisheries Management Team provides input to all advice papers relating to MPI's consent to the registration of foreign owned vessels under section 103 of the Fisheries Act 1996. The Fisheries (Foreign Charter Vessels and Other Matters) Amendment Act 2014 (FCV Act)¹¹ amended the registration process for foreign owned vessels as well as expanding the range of observer functions. MPI coordinates the cross agency work programme for the implementation of requirements of the FCV Act and will continue to assist the MPI Registry Analyst and the MPI Observer Programme with any changes to their respective processes and functions.

Core Actions for 17/18:

- Provide input to the foreign-owned vessel registration and risk profiling process in conjunction with MPI Compliance
- Provide secretariat services to and chair the Inter-Agency Fisheries Group
- Provide input into high seas permit applications

Action linked to Management Objective 1.6
Action linked to Management Objective 9 and 10

12 Deepwater Monitoring – Monitor adherence of the deepwater fleet to the range of measures in place to monitor and manage the effects of fishing activity on protected species and sharks

A range of management measures, including some non-regulatory initiatives by DWG, are employed to monitor environmental interactions in deepwater fisheries and to reduce the risk of ongoing adverse effects on protected species populations. Measures are described in the following Operational Procedures or Plans (OPs):¹²

- i. Marine Mammal Operational Procedure (DWG initiative)
- ii. Vessel Management Plans (trawl) – Seabirds (DWG initiative)
- iii. Ling Operational Procedures (bottom longline) – Seabirds (DWG initiative)
- iv. Shark Operational Procedure (DWG initiative)
- v. Squid 6T/SBW 6I Operational Plan (covered in MA #5)

Key Actions for 17/18:

- Work with DWG to develop an audit process for the Ling Operational Procedures
- Work with DWG to update the MPI audit sheet for Vessel Management Plans
- Work with DWG to update materials and methods used to educate crew on Operational Procedures and Plans
- Provide an update of the list of vessels covered by DWG OPs to DWG

Core Actions for 17/18:

- Monitor adherence of the deepwater fleet to management measures through MPI Observer coverage.
- Monitor protected species interactions across all trips via MPI Observer debriefs and reporting of trigger points.
- Report levels of adherence to Operational Procedures to stakeholders through the ARR.
- Continue to support the training and outreach and awareness programme run by the DWG Environmental Liaison Officer (ELO)

Action relates to Management Objectives 2.4, 2.5 and 1.6
Action relates to Management Objectives 6, 8, 9 and 10

¹¹This Amendment Act can be accessed here <http://www.legislation.govt.nz/act/public/2014/0060/latest/DLM4794406.html>

¹² DWG operational documents can be accessed [here \(www.deepwatergroup.org/deepwater-group-operational-procedures-2015-16\)](http://www.deepwatergroup.org/deepwater-group-operational-procedures-2015-16)

13 Deepwater Monitoring – Monitor adherence to non-regulatory measures in place to manage Tier 1 deepwater fishstocks at a sub-QMA scale.

In conjunction with industry, MPI has implemented a series of non-regulatory sub-area and/or species-specific catch limits in the hoki, orange roughy, and oreo fisheries. In addition, hoki management areas (HMAs) have been created to reduce fishing mortality of juvenile hoki in important nursery areas.

Key Actions for 17/18:

- Develop GIS tools to provide for a more efficient reporting mechanism

Core Actions for 17/18:

- Continue auditing fleet adherence to sub-QMA catch limits and HMA requirements
- Report level of adherence to these measures to stakeholders through the ARR
- Respond as required where non-compliance with sub-QMA catch limits impacts the sustainability of the stock.

Action linked to Management Objectives 1.1, 1.3 and 2.1

Action linked to Management Objectives 2, 3, 9, and 10

14 Fisheries Management Controls – Regulatory amendments

Progressing regulatory amendments requires analysis of options, drafting the documents required for the different components of the regulatory process such as the PIRA (preliminary impact and risk assessment), consultation documents, RIS (regulatory impact statement), final advice, and papers for relevant Cabinet Committees.

Core Actions for 17/18:

- Progress regulatory amendments as required

Action linked to Management Objectives 1.1 and 1.2

Action linked to Management Objectives 9, 10 and 11

15 Fisheries Management/Sustainability Controls: Support existing approaches to market initiatives for New Zealand's deepwater seafood

The primary component of this management action is working with DWG to support the requirements of the Marine Stewardship Council (MSC) assessment and certification process. MPI supports industry to achieve and maintain certification of key deepwater fisheries, and progress performance of all Tier 1 deepwater fisheries towards meeting the MSC Standard.¹³

Key Actions for 17/18:

- Support re-assessment of HOK, HAK, LIN, and SBW in July 2017

Core Actions for 17/18:

- Provide information and support to assist with audits of certified fisheries (ORH)
- Support the development and implementation of Fisheries Improvement Plans for fisheries not yet assessed (OEO, SQU, JMA)

Action linked to Management Objectives 1.1 and 1.5

Action linked to Management Objectives 2 and 10

¹³ Information on the status of New Zealand's deepwater fisheries in the MSC programme can be found on DWG's website www.deepwatergroup.org/certification

16

Fisheries Sustainability Controls: Develop and implement specific harvest strategies for Tier 1 species and management approaches for low information stocks, which enable economically viable deepwater and middle-depth fisheries over the long-term

A harvest strategy defines a management target, soft and hard limits, a rebuild strategy, and a harvest control rule for a stock. Often in developing a harvest strategy, a management strategy evaluation will be undertaken which assesses a range of different management strategies, including those which incorporate economic aspects of the fishery.

Management of Tier 2 species is often limited by the information available to inform decision making. The appropriate management approach for each stock will be informed from the recent series of fisheries characterisations and could include development of stock assessments, management procedures, or an agreed index of abundance.

Core Actions for 17/18:

- Continue to assess the relevance of the default Harvest Strategy for deepwater species¹⁴
- Where necessary, develop and implement alternative harvest strategies and management approaches for deepwater species
- Work with science team to update and publish working group reports and stock status information
- Work with DWG to minimise unwanted bycatch (for example kingfish in the jack mackerel fishery)

Action linked to Management Objective 1.1, 1.2, 2.1

Action linked to Management Objective 4 and 9

Table 3: Management Actions that are led by other teams within the Fisheries Management Directorate and within MPI

A

Input to wider MPI processes

Assist relevant branches within MPI with review of policy developments and any necessary fisheries management information

Lead: Policy and Trade

MPI's review of the fisheries management system, entitled the Future of our Fisheries, is underway. This is expected to make significant improvements to how our fisheries are managed. These projects may require information, feedback, and review of working documents. It includes 3 key work streams:

- The Future of our Fisheries policy initiatives, led by the Policy and Trade branch, and
- Integrated Electronic Monitoring and Reporting Systems (IEMRS), and
- Enabling innovative trawl technologies (EITT), led by the Regulation and Assurance branch.

The Deepwater Fisheries Management Team also works with the Fisheries Policy team on information requests from other government agencies (e.g. EPA) and on relevant international fisheries management organisations (e.g. South Pacific Regional Fisheries Management Organisation)

Key Tasks for 17/18:

- Engage as required on policy initiatives including all work streams of the Future of our Fisheries policy review, IEMRS, and EITT
- Actively participate in the South Pacific Regional Fisheries Management Organisation to ensure consistency with domestic management and add deepwater fisheries management expertise to New Zealand delegation
- Respond to requests for information or other initiatives from the policy branch to support New Zealand's

¹⁴ Harvest Strategy is available here <http://fs.fish.govt.nz/NR/rdonlyres/6EC9A6A7-6FC4-4273-86B7-57A51CB55348/0/harveststrategyfinalpdf.pdf>

fisheries (e.g. EPA or requests from other governments for information on New Zealand fisheries)

Action linked to Management Objectives: various

B

Research Monitoring and Evaluation

Ensure that all information used in management decisions meets the requirements of the Research and Science Information Standard for New Zealand Fisheries (the Research Standard)

Lead: Fisheries Management Science (Stock Assessment and Aquatic Environment)

The Deepwater team will continue to be closely involved in the monitoring and evaluation of all research projects that relate to deepwater fisheries.

Key Tasks for 17/18:

- Assist Fisheries Science to deliver outputs of all 17/18 research projects as listed in Tables 6-8
- Assist Fisheries Science to ensure that all science research used to support management of deepwater fisheries is assessed against the Research Standard¹⁵

Action linked to Management Objectives 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.2, 2.4, 2.5, 2.6, and 2.7

Action linked to Management Objectives 1, 2, 3, 4, 5, 9 and 10

C

Observer Coverage Delivery

The MPI Observer Programme is responsible for delivering on the observer coverage targets set out in the final 2017/18 coverage plan and ensures that the required biological sampling targets are met.

Lead: Fisheries Management (Observer Programme)

Observer coverage plans for all fisheries are prepared annually as are biological sampling targets and other observer tasks. The Deepwater Fisheries Management team will continue to work closely with the Observer Programme to ensure the necessary targets are achieved.

Key Tasks for 17/18:

- Assist the Observer Programme to deliver the 2017/18 Observer coverage plan by continuing to engage with industry to regularly provide quarterly fishing plans to the Observer Programme to facilitate placement of observers and delivery of the required representative levels of coverage
- Ensure the Observer Programme is aware of, and that observers are adequately briefed on, the biological sampling targets for 2017/18 and any new requirements for the Observer Programme
- Provide training to new recruits as part of the intake process to ensure that observers collect data and sample correctly
- Request frequent reporting and updates of coverage levels against targets throughout the 2017/18 year

Action linked to Management Objectives 1.1, 1.3, 1.4, 1.5, and 2.5

Action linked to Management Objectives 1, 2, 3, 4, and 10

D

Cost Recovery Process

Assist the Business and Financial Advice team with the cost recovery processes for 2017/18 and 2018/19

Lead: Corporate Services (Cost Recovery)

MPI undertakes an annual cost recovery process to recover costs associated with fisheries compliance, registry, research, and observer coverage. There are two stages to the process: the first involves undertaking a port price survey while the second consists of calculating the levies for each stock.

Key Tasks for 17/18:

¹⁵ The Research Standard can be accessed [here](http://www.fish.govt.nz/en-nz/Deepwater/Key+Documents.htm). (www.fish.govt.nz/en-nz/Deepwater/Key+Documents.htm)

- Ensure the Deepwater FM team has input into the port price survey process administered by the Finance team
- Ensure the cost recovery levy process recovers costs consistent with Deepwater observer coverage and research plans
- Provide input, if required, into the Cost Recovery First Principles Review.

Action linked to Management Objectives: various

E

Compliance monitoring work
Lead: Compliance Directorate (Operations Branch)

MPI's Compliance Directorate will continue to focus on monitoring deep-water fishing activity and catch reporting in 2017/18 to ensure the fleet demonstrates behaviours and practices consistent with legislative and regulatory requirements.

Key Tasks for 17/18:

- Engage with industry to support the implementation of new catch reporting and positional reporting requirements under IEMRS
- Monitor compliance issues identified in previous HOK and SBW risk profiles
- Finish the risk profile work on ORH
- Provide compliance and enforcement information to support the reassessment process for MSC certification of HAK, HOK, LIN, and SBW
- Engage with industry to verify fish to meal sources and meal quantification processes identified in factory plans for vessels

Core Actions for 17/18:

- Assess compliance risk for deep-water fisheries
- Support industry to resolve technical issues around positional reporting
- Investigate issues where offending is suspected
- Carry out at sea inspections
- Audit catch returns

Action linked to Management Objectives: various

Table 4: Management actions delivered by the Deepwater Fisheries Management Team that are initiated by the fishing industry

Possible Actions for 2017/18

Core Actions:

- Respond to any industry requests for changes to QMA boundaries or definitions
- Respond to applications for vessel specific conversion factors
- Support development of new fisheries within sustainable limits
- Respond to any requests for special permits for deepwater species

Action linked to Management Objectives: various

2B Services to support delivery of Management Actions

This section details the Fisheries Management Services that will be required to deliver on Management Actions described in Part 2A of this AOP. Projects and work areas are also covered in this section that the Fisheries Management Deepwater team will work with and engage with other teams, both within the Fisheries Management Directorate and across MPI.

New Zealand’s deepwater fisheries will be managed in collaboration with tangata whenua and stakeholders. Some services are proposed for delivery in collaboration with industry, or MPI will provide support to enable industry to deliver some services. Detail of the Fisheries Services and service support in Part 2B is split according to the key parts of MPI, or the relevant external organisations, that the Deepwater Fisheries Management team will work with to deliver the specified services: Regulation and Assurance, wider MPI, and external organisations.

2.1 FISHERIES MANAGEMENT DIRECTORATE

MPI’s Fisheries Management Directorate resides within the Regulation and Assurance Branch and is responsible for the operational management of New Zealand’s fisheries under the Fisheries Act 1996. Fisheries are managed within legislative requirements to provide for utilisation while ensuring sustainability. All Fisheries business groups work together on strategic matters and key projects that cross over the different portfolios.

The Offshore team consists of two teams, the Deepwater Fisheries Management Team and the Highly Migratory Species Team. The Highly Migratory Species Team is responsible for the management of all highly migratory stocks and the management of the environmental effects of fishing for these species.

The Deepwater Fisheries Management Team works closely with the Inshore Fisheries Team who are responsible for managing inshore fish stocks which include shellfish, inshore finfish, freshwater and marine plant resources, and the effects of inshore fisheries on the aquatic environment.

Table 5: Business groups and teams within MPI’s Regulation and Assurance Branch through which fisheries management services will be delivered.

R&A Directorates	Team
Fisheries Management	Offshore Fisheries – Deepwater Fisheries and Highly Migratory Fisheries
	Inshore Fisheries – Inshore Fisheries and Recreational Fisheries
	Customary Fisheries and Spatial Allocations
	Fisheries Science - Stock Assessment and Aquatic Environment
	Fisheries Monitoring - Data Management and Observer Services
Branch Planning, Systems, and Support	
Spatial, Forestry, and Land Management Directorate	
Other Directorates	

As detailed above, the Deepwater team will lead on all identified Management Actions listed in Table 2 and contribute to delivery of all actions specified in Table 3. The five key cross directorate projects during 2017/18 are listed below, followed by further detail on specific fisheries services that relate to key projects:

- Annual reviews of sustainability controls and management settings (April and October)
- Implementation and review of the NPOA Seabirds (see below)
- Implementation of the NPOA Sharks
- Engagement with tangata whenua
- Development of objectives and/or a framework for the management of benthic impacts of fishing

2.1.1 MPI Customary Fisheries and Spatial Allocations Teams

The core services that the Customary Fisheries and Spatial Allocations Teams provide for the Deepwater Fisheries Team is advice and support to fulfil Section 12 obligations, particularly during the development and implementation of Iwi Fisheries Plans and Forum Fisheries Plans, to ensure that Maori interests in fisheries management are provided for. The Deepwater Team will consult with tangata whenua that have an interest in the stock or the effects of fishing on the aquatic environment, and provide for the input and participation of tangata whenua having a non-commercial interest in the stock concerned, or having a particular regard to kaitiakitanga.

The Customary Fisheries Team provides:

- Input and participation into the development of proposals for change
- Review of consultation and decision documents produced by the Deepwater Fisheries Management team as part of each sustainability round
- Enabling sufficient and appropriate engagement with tangata whenua by providing the opportunity for Iwi and Forum Fisheries to discuss Deepwater consultations.

The Spatial Allocations Team provides:

- Analysis/advice on applications made regarding the use and management of marine space and
- Assessment of applications for special permits.

2.1.2 Science Teams (Stock Assessment & Aquatic Environment)

The Science teams within the Fisheries Management Directorate provide expert advice and are responsible for evaluating and delivering science research that meets the Science and Research Information Standard for Fisheries (Research Standard).¹⁶

The key actions and core services that the Deepwater team will work on with the Science teams during 2017/18 will be:

- Delivery of deepwater research services. Research projects scheduled for delivery during the 2017/18 financial year are provided in Tables 6 – 8 below
- Maintenance and updating of the Medium Term Deepwater Research Plan

¹⁶ The Research Standard can be found at: <https://www.mpi.govt.nz/document-vault/3692>

- Development and implementation of new research planning and procurement processes including a return to longer term contracting.
- Planning and prioritisation of the 2018/19 deepwater fisheries research programme including industry-led surveys, to be agreed before 31 December 2017.
- Implementation of protected species frameworks, including the NPOA Seabirds, NPOA Sharks and the New Zealand sea lion/Rāpoka Threat Management Plan
- Review and revision of the NPOA Seabirds
- Research evaluation via the Science Working Group processes
- Provision of science advice and review to ensure all science information used in management advice meets or exceeds the requirements of the Science Research and Information Standard

2.1.2.1 Research Services Scheduled for 2017/18

The research planned for 2017/18 (Table 6) is compiled from the Medium Term Deepwater Research Plan, and incorporates some changes resulting from discussions.

Tables 7 and 8 outline the Aquatic Environment and Biodiversity research programmes that are managed by the Aquatic Environment Science Team. Research on the aquatic environment is both crown funded and cost recovered from the fishing industry through levies. Biodiversity research is solely crown funded and addresses more strategic, national-level marine environmental issues. The Aquatic Environment and Biodiversity research was proposed and consulted on within those forums.

Table 6: Proposed Deepwater Fisheries Research Plan for 2017/18

Project code	Title
BAR2017-02	Update of abundance indices for BAR 4 and 7
DAE2017-01	Bycatch monitoring and quantification in deepwater fisheries (Hoki, Hake, Ling trawl)
DAE2017-02	Taxonomic identification of benthic samples
DAE2017-03	Investigating the impacts of deepwater fishing on the aquatic environment (seabirds)
DAE2017-04	Quantification of key bycatch groups across fisheries
DEE2017-01	Stock assessment of blue mackerel (EMA 7)
HAK2017-01	Stock assessment of hake in HAK 1
HOK2017-01	Estimation of spawning hoki biomass in Cook Strait using acoustic surveys
HOK2017-02	Land-based catch sampling of hoki
HOK2017-03	Hoki stock assessment
HOK2017-04	Management Strategy Evaluation and Harvest Control Rule development for hoki
JMA2017-01	Stock assessment of jack mackerel in JMA 7
LIN2017-01	Stock assessment of ling in LIN 5 and 6
MID2017-01	Routine age determination of middle depth and deepwater species from commercial fisheries and resource surveys
MID2017-02	Multi-species trawl survey on the Chatham Rise to estimate abundance of middle depth and deepwater fish species
OEO2017-02	Development of monitoring approach for smooth and black oreos in OEO 3A
ORH2017-01	Estimation of orange roughy abundance using acoustic methods (ORH 2A, 2B and 3A)
ORH2017-02	Stock assessment of orange roughy (ORH MEC)
SBW2017-01	Estimation of southern blue whiting using acoustic methods (Bounty Platform)
SBW2017-02	Southern blue whiting Bounties stock assessment
SCI2017-01	Estimation of the abundance of scampi in SCI 1 and SCI 2 using photographic surveys
SCI2017-02	Stock assessment of scampi in SCI 3
SCI2017-03	Evaluation of potential management strategies for scampi
SCI2017-04	Characterisation and CPUE of scampi in SCI 4A
SQU2017-01	Stock assessment of squid

Table 7: Proposed and Ongoing Aquatic Environment research projects that are relevant to deepwater fisheries

Project code	Title
PRO2017-01A	Research into the demographic parameters for at-risk seabirds as identified by the RA (black petrels)
PRO2017-01B	Research into the demographic parameters for at-risk seabirds as identified by the RA (Southern Buller's/Snares)
PRO2017-04	Risk Assessments to support the development of revised NPOA seabirds
PRO2017-05A	Population specific modelling of adult survival of black petrels
PRO2017-05B	Population specific modelling of adult survival of Chatham Island albatross
PRO2017-06	Characterisation of yellow-eyed penguin/fishery interactions
PRO2017-07	Development and testing of trawl mitigation tools

Project code	Title
PRO2017-08A	Research into the demographic parameters for at-risk marine mammals as identified by the marine mammal risk assessment (common dolphins)
PRO2017-08C	Research into the demographic parameters for at-risk marine mammals as identified by the marine mammal risk assessment (sea lions)
PRO2017-10	Analysis of New Zealand sea lion tracking data to estimate overlap with fisheries
PRO2017-15	Use of innovative tag technology to examine foraging patterns of seabirds and association with fishing vessels
PRO2017-18	Characterisation and quantification of non-commercial fishing threats on seabirds
PRO2017-19	Factors affecting capture rate of black petrels and flesh-footed shearwaters
BEN2017-01	Monitoring of deepwater trawl footprint
PRO2016-03	Estimation of captures of protected species in New Zealand fisheries
PRO2016-06	Spatially explicit risk assessment query and simulation tool
PRO2013-01	Estimation of Seabird and Marine Mammal Captures
SEA2014-23	An assessment of thermal aerial survey techniques on fur seals
PRO2014-01	Improving information on the distribution of key protected species
PRO2012-02	Assessment of the risk to marine mammal populations from NZ Fisheries
SEA2014-12	NZSL Stable Isotope Analysis (an analysis of stable isotopes found in sea lion teeth)
PRO2016-01A	Demographic parameters of black petrels
PRO2016-02	Factors affecting capture rate of black petrels and flesh-footed shearwaters
PRO2015-01	Improving estimates of cryptic mortality for use in seabird risk assessments
PRO2014-06	Update of level-2 seabird risk assessment
SEA2014-24	Revision of Risk Assessment Methodology
SEA2014-25	Revision of black petrel distribution
PRO2013-13	Southern Hemisphere seabird risk assessment (for ACAP species)
PRO2012-10	Quantitative modelling of Antipodean Albatross
PRO2006-01	Data collection of demographic, distributional and trophic information on selected seabird species.
DAE2016-01	Total catch composition in deepwater fisheries (squid & scampi)
ENV2014-02	NPOA-sharks: age and growth of selected at-risk species
INS2014-01	Indicator based analysis of the status of New Zealand shark populations
BEN2014-01	Risk assessment for benthic habitats, biodiversity, and production
BEN2014-02	Monitoring Recovery of Benthic Fauna on the Graveyard Complex
ENV2014-09	Spatial decision support tools for multi-use and cumulative effects

Table 8: Ongoing biodiversity research that relates to the deepwater fisheries

Project code	Title
ZBD2017-02	Linking primary and secondary productivity
ZBD2017-04	Implications of ocean acidification on the capacity of carbonates in sediments to buffer eutrophication effects
ZBD2016-07	Multiple stressors on coastal ecosystems-in situ
ZBD2016-11	Quantifying benthic biodiversity across natural gradients

ZBD2014-03	Sub-lethal effects of environment change on fish populations
ZBD2014-05	Modelling the effects of ocean acidification
ZBD2014-09	Climate change risks and opportunities
ZBD2014-10	BPA Biodiversity
ZBD2013-02	Vulnerable Marine Ecosystems Project - Genetic Connectivity
ZBD2008-01	Research on biogenic habit-forming biota & their functional role in maintaining biodiversity in the marine environment

2.1.3 Fisheries Monitoring

The Deepwater Fisheries Management Team work closely with the Fisheries Monitoring Team which is split into Fisheries Data Management and Observer Services.

Fisheries Data Management provides data management services, including responding to requests for data from MPI's various databases (including Catch Effort and the Centralised Observer Database). The Data Management team also provides advice on reporting questions and reviews special permits as required.

MPI Observers are deployed on commercial fishing vessels to carry out biological sampling, monitor environmental interactions, and observe and record compliance with a range of regulatory and non-regulatory management measures. The key projects and core services that the Deepwater Fisheries Management Team will work on with the Observer Programme during 2017/18 include:

- Training/briefing (where required) and debriefing observers allocated to deepwater trips
- Planning the 2018/19 annual observer coverage requirements for the deepwater fisheries – the 2017/18 Deepwater Observer Coverage Plan is set out below
- Monitoring progress towards sampling targets during the year

2.1.3.1 Deepwater Observer Coverage Plan for 2017/18

Purpose and background

Biological sampling and environmental monitoring is carried out by the MPI observer programme. Data collected by the observer programme is used:

- As an input to monitor key fisheries against harvest strategies
- As an input to monitor biomass trends for bycatch species
- To determine the potential effect of fishing on protected species
- To enable more timely responses to sustainability and environmental impact issues

Due to recommendations from the 'Inquiry into the Use and Operation of Foreign Charter Vessels' (FCVs) regarding vessel safety, employment conditions and compliance, MPI has committed to full observer coverage on all FCVs (now referred to as foreign-owned vessels (FOVs)) as of 1 October 2012.¹⁷ This has consequently affected the distribution of observer

¹⁷ Of the 27 FCVs/FOVs that operated at the time of the Inquiry 16 have left New Zealand waters and 11 remain in New Zealand. Of the 11 vessels remaining, 10 are foreign-owned but have reflagged, and the other is now New Zealand-owned

coverage since the 2012/13 financial year. Despite this change, MPI along with DOC, is working to ensure that fisheries management needs are met despite the requirement for full observer coverage on FOVs.

Planning observer coverage

Observer coverage is planned by sea days, which is one day that an observer is on board a fishing vessel. This approach allows for the observer programme to plan the number of observers required to deliver coverage for the year ahead, as well as forming part of the mechanism to recover the cost of delivery of the programme. Coverage is planned for a ‘fishery complex’, which is a grouping of Tier 1 and selected Tier 2 stocks that share similar operational characteristics and operate in similar areas.

Two coverage targets are calculated for each fishery complex. These are:

- The number of days required to obtain sufficient biological information. This includes length frequency and otolith samples that are used to support stock assessments to monitor stock status of target and bycatch species. Biological sampling requirements for each of the Tier 1 and selected Tier 2 stocks is listed in Appendix 1. An estimate of the number of samples collected per day by observers is used to inform the calculation of the total number of days required to collect samples.
- The number of days required to achieve a predetermined coverage percentage of expected effort. This is for the purpose of monitoring protected species interactions or compliance monitoring. Historical fisher reported effort data, previous observer coverage levels, and estimated fleet size for the coming year, are all used in the calculation.

Each target is then multiplied by the proportion of total effort that is made up by the domestic fleet. This is to ensure there is representative sampling and observations undertaken on the domestic fleet in addition to that from FOV’s. Coverage required on FOV’s is estimated based on historical effort patterns and the forecast number of FOV’s that will be operating in the upcoming year.

To achieve both sampling and monitoring objectives, the higher of the two targets is used as the proposed planned days for domestic vessels. A summary of the target applied to each fishery complex is summarised in Table 10. This proposal, along with the estimated coverage required on FOV’s, is then assessed against the observer programme’s capacity to deliver and is prioritised against coverage proposals from other fisheries (HMS, inshore and other categories). Table 9 reflects the final outcome of this process for deepwater fisheries for the 2017/18 year, as well as stock covered by each fishery complex and the MPI/DOC cost recovery split.

Table 9: Deepwater fisheries observer coverage plan for 2017/18

Fishery complex & stocks covered	Estimated FOV days	Domestic days (discretionary)	Total days planned	MPI/ DOC %
Deepwater trawl fisheries				
North Island Deepwater ORH1, ORH2A, ORH2B, ORH 3A, BYX2, CDL2	0	90	90	90/10
Chatham Rise Deepwater ORH3B, OEO3A, OEO4 BYX3	0	220	220	90/10
Sub-Antarctic Deepwater ORH3B, OEO1, OEO6	0	60	60	90/10

Fishery complex & stocks covered	Estimated FOV days	Domestic days (discretionary)	Total days planned	MPI/ DOC %
West Coast Deepwater ORH7A	0	40	40	90/10
Hoki & Middle depth trawl fisheries				
West Coast North Island JMA7, EMA7, BAR7	600	35	635	85/15
West Coast SI (FMA7) HOK1, HAK7, LIN7, SWA1	900	200	1,100	85/15
WCSI HOK (Inside the line) HOK1	0	80	80	85/15
Cook Strait HOK HOK1	0	100	100	85/15
Chatham Rise Middle depths (FMA3 /FMA4) HOK1, HAK1, HAK4 LIN3, LIN4, SWA3, SWA4, JMA3, BAR1, BAR4	360	400	760	85/15
Sub-Antarctic Middle depths (excl. SQU/SBW) (FMA5/FMA6) HOK1, SWA4, WWA5B, BAR5, JMA3	600	250	850	85/15
Southern blue whiting SBW All	350	130	480	80/20
Squid SQU1T, SQU6T	900	120	1,020	80/20
Squid jig fishery				
Squid jig SQU1J	0	0	0	100/0
Bottom longline fishery				
Bottom longline LIN3, LIN4, LIN5, LIN6, LIN7	0	400	400	85/15
Shellfish fishery				
Scampi SCI (all)	0	400	400	80/20
Total	3,710	2,585	6,785¹⁸	

Table 10: Summary of information used to inform planned coverage

Fishery complex & stocks covered	Total days planned	Rationale and comment
Deepwater trawl fisheries		
North Island Deepwater	90	Based on an estimate of 2 LF samples per day. 30 samples required from each of the 6 stocks/sub-areas.
Chatham Rise Deepwater	220	Based on 30% coverage for MSC stocks and sampling requirements to support assessments.
Sub-Antarctic Deepwater	60	90 samples required from the three stocks/sub-area.
West Coast Deepwater	40	50 LF samples required from the two sub-area.
Hoki & Middle depth trawl fisheries		
West Coast North Island	635	400 LF samples required. The majority of effort is undertaken by

¹⁸ Does not include 60 days for vessel specific conversion factor testing or 450 days for high/medium risk vessels

Fishery complex & stocks covered	Total days planned	Rationale and comment
		FOV's. 600 days have been estimated to cover FOV effort, and 35 days planned for coverage on domestic vessels to ensure representative sampling.
West Coast SI (FMA7)	1,100	800 LF samples required for HOK, HAK and LIN combined. An estimated 900 days are required to cover FOV effort. 200 days are planned for domestic vessels to provide for representative sampling of domestic vessel catch, which makes up approximately 50% of the total.
WCSI HOK (Inside the line)	80	All effort is undertaken by domestic vessels. Observer sampling is supported by on-shore sampling, however 80 days are planned to ensure sampling across all vessels as well as for protected species observations, notably fur seals.
Cook Strait HOK	100	All effort is undertaken by domestic vessels. Observer sampling is supported by on-shore sampling, however 100 days are planned to ensure sampling across all vessels as well as for protected species observations, notably fur seals, at a level of approximately 25% of effort.
Chatham Rise Middle depths (FMA3 /FMA4)	760	1000 LF samples required for HOK, HAK, LIN & SWA combined. Just over half of catch is taken by domestic vessels, so FOV coverage is planned at 360 days and 400 days for domestic vessels.
Sub-Antarctic Middle depths (ex SQU/SBW)	850	700 LF samples required for HOK, HAK, & LIN. 250 of these days are planned to cover domestic vessels which make up for approximately 80% of effort.
Southern blue whiting	480	100% observer coverage is required for sea lion observations. 350 days estimated for FOV and 130 for domestic vessels.
Squid	1,020	Coverage planned on achieving at least 50% coverage across the whole fleet. While FOV coverage will likely achieve this, 120 days is planned for domestic vessels to ensure this target is met.
Squid jig fishery		
Squid jig	0	No squid jig effort expected for 2017/18
Bottom longline fishery		
Bottom longline	400	Coverage is based on observing 20 – 25% of effort for protected species monitoring and sampling to support assessments.
Shellfish fishery		
Scampi	400	Coverage is based on observing 20% of effort for protected species monitoring and sampling to support assessments.
Total	6,785¹⁹	

2.1.4 Integrated Electronic Monitoring and Reporting System (IEMRS)

A project team is in place to implement IEMRS. This team liaises with other MPI Directorates (e.g, Fisheries Management, Compliance, Cost Recovery) to enable delivery of MPI's requirements using the new reporting and monitoring system. Work is underway within this team to design a future operating model, and organisational design, that encompass IEMRS technologies, systems, and information. As IEMRS becomes business as usual, the project team's role will transition to a new Ministry-wide IEMRS business as usual state.

¹⁹ Does not include 60 days for vessel specific conversion factor testing or 450 days for high/medium risk vessels

2.2 BRANCH PLANNING, SYSTEMS & SUPPORT DIRECTORATE

The Branch Administration and Registry Services Unit provides administrative and budgetary support for the entire Regulation & Assurance Branch. The Unit also liaises with the Ministerial Team and the Office of the Director General.

2.3 SPATIAL, FORESTRY AND LAND MANAGEMENT DIRECTORATE

The Spatial Analysis Solutions unit operates within the Spatial, Forestry and Land Management Directorate. The unit's function is to provide spatial visualisation, integration, automation, modelling and analysis across MPI. The Deepwater FM team requires GIS analysis services from the unit on an *ad hoc* basis.

2.4 OTHER MPI REGULATION & ASSURANCE DIRECTORATES

Other R&A Directorates that the Deepwater Fisheries Management team may engage with during 2017/18 include the Biosecurity Science (for example advice on sea lion disease research), Food Science and Risk Assessment Directorate. This team has a specialised role in providing the science and risk assessment advice that is essential to robust development of food safety and biosecurity import, domestic and export standards.

2.5 DIRECTORATE LINKAGES WITH WIDER MPI

Table 11: Branches and directorates outside R&A from which some fisheries management services will be required.

Branch	Directorate
Corporate Services	Finance, Property and Procurement
	Business Technology & Information Services
	Cost Recovery
Operations	Compliance
Policy and Trade	International Policy
	Sector Policy
Office of the Director General	Ministerials & Business Support Group
	Communications & Channels
	Legal Services

Corporate Services Branch

The cost recovery team is currently reviewing how MPI recovers costs from individuals and industries in order to provide essential services (First Principles Review). The Finance, Property and Procurement Directorate is responsible for asset management, centralised purchasing, facilities and contracting. The key projects that the Deepwater Fisheries Management team will work with this Directorate to progress will be the annual and long-term fisheries research procurement and conservation services levy cost recovery process and budget administrative support.

The Business Technology & Information Services Directorate is responsible for the information systems of MPI, ensuring effective collection of information, and the development of technology solutions. This includes MPI software development, the Records and Geo-spatial Data Management function and any changes needed to fisheries reporting. The Information Services team is also responsible for day-to-day IT support for the

Deepwater Team and MPI as a whole. Given the fundamental services that this Directorate provides to the Deepwater Team, all Management Actions are dependent on the functionality of one or more teams within the Business Technology & Information Services Directorate.

2.5.1 Operations Branch – Compliance Directorate

In deepwater fisheries the main areas of concern for the Compliance Directorate include area misreporting, falsifying catch returns, misidentification of species taken, and unreported discards or ‘slippage’ in processing systems designed to record catch by vessels.

Fisheries Compliance uses a risk-based approach to effect behaviour change in New Zealand’s deep-water fishing fleet that supports the integrity of New Zealand’s fisheries management system. The approach is based on four core principles – Voluntary, Assisted, Directed, Enforced – that guide proportionate responses, and encourage collaboration in a way that ensures regulated parties ‘know where they stand’, and get the level of support and attention necessary to maximise compliance outcomes.

The service delivery model can be generally characterised as: providing information to educate and raise awareness of fishing requirements and non-compliance issues within the industry, engaging with stakeholder groups to ensure performance measures are achieved and compliance interventions are understood, gathering intelligence on risk and planning operational activity, and inspecting, investigating and prosecuting breaches of the law.

2.6 POLICY AND TRADE BRANCH

The Policy and Trade Branch is responsible for providing advice on a wide range of legislation administered by the MPI. It provides forward-looking analysis on policy development and strategic issues. Although multiple directorates within the Policy Branch may be called upon for feedback or review, there are two main Directorates that will interact with the Deepwater Team at more frequent intervals. These Directorates are the International Policy Directorate and the Sector Policy Directorate.

2.6.1 International Policy Directorate

The Deepwater Fisheries Management Team works with International Policy on engagement in relevant Regional Fisheries Management Organisations including the South Pacific Regional Fisheries Management Organisation. The Deepwater Fisheries Management Team also provides advice and review on international issues that may impact on New Zealand’s domestic fisheries management.

2.6.2 Sector Policy Directorate

The Sector Policy Directorate is responsible for high level policy, working with stakeholders and other Government agencies to develop and implement policy, including the various legislative and regulatory frameworks that support the development of New Zealand’s primary industries. It is responsible for monitoring, reviewing and amending policy that relates to the primary sector and will be leading on implementation of outcomes from the Future of our Fisheries. The Economic Information and Analysis team within the Sector Policy Directorate also has the capacity to respond to requests for information on, for example, export statistics.

2.7 OFFICE OF THE DIRECTOR GENERAL BRANCH

The Office of the Director General's responsibilities include Legal Services, monitoring the performance of the MPI, external communications such as press releases, and all Ministerial communications. The three directorates within this Branch that will support the Deepwater Team in achieving the 2016/17 objectives are:

- Ministerials and Business Support Group
- Communications and Channels Directorate
- Legal Services Directorate

2.7.1 Ministerials and Business Support Group

The Ministerial and Business Support Group is the point of contact between the MPI and the Minister's Office. This Group is responsible for ensuring the Ministerial process is managed effectively. They help with Ministerial correspondence including Briefings, Aide-Memoires, and the Official Information Act process.

2.7.2 Communications and Channels Directorate

The Communications and Channels Directorate is responsible for providing strategic communications advice, to ensure that MPI teams communicate with internal and external stakeholders in an effective and efficient manner. This Directorate is also responsible for overseeing and developing the MPI's communications channels (e.g. websites) and assisting the Deepwater Fisheries Management Team when responding to media queries and making announcements.

2.7.3 Legal Services Directorate

MPI's Legal Services Directorate provides expert knowledge and legal opinion on the interpretation of relevant fisheries legislation to support policy development and management interventions. The key projects that the Deepwater Fisheries Management team will work with this Directorate to progress will be:

- Review of all advice papers drafted as part of consultation and decision documents for sustainability rounds
- Review of any contractual arrangements that MPI proposes to enter, for example to secure research services
- Legal input and review for any legislative or regulatory changes that are progressed by the Deepwater FM team during the 2017/18 year.
- Reviewing High Seas Fishing Permits, general statutory interpretation and other decision papers

2.8 EXTERNAL ORGANISATIONS

2.8.1 Deepwater Group Ltd.

The Deepwater Group Ltd (DWG), is a non-profit company that represents owners of deepwater fishing quota. The DWG works collaboratively with MPI to help ensure New Zealand gains the optimum economic yield from New Zealand's deepwater fisheries resources while ensuring fish stocks are managed sustainably and environmental effects are managed appropriately.²⁰

²⁰ DWG's website can be accessed [here](http://www.deepwatergroup.org): www.deepwatergroup.org

A primary function of the DWG is to represent the interests of quota owners and provide a communication channel between MPI and the deepwater fishing industry to facilitate full engagement on the management of deepwater fisheries.

In 2006 the then Ministry of Fisheries, signed a Memorandum of Understanding (MOU) with the Deepwater Group Ltd. This MOU was subsequently updated in 2008 and 2010.²¹ The MOU establishes a structured collaborative framework that enables MPI and DWG to work together. Because of this collaborative arrangement, the Deepwater AOP also specifies how the industry will contribute to the delivery of Management Actions and, in turn, the Management Objectives within the National Deepwater Fisheries Plan.

The key projects that the Deepwater Fisheries Management team will work with industry to progress during 2017/18 will be:

- Prioritising fish stocks for annual sustainability reviews and coordinating industry input
- Administering sub-QMA catch limit management in conjunction with FishServe and required reporting to MPI
- Supporting the deepwater industry to achieve and maintain third party certification, reassessment of HOK, HAK, LIN, SBW and audits for ORH
- Enabling with delivery of the observer coverage plan for 2017/18
- Planning research and observer services for delivery in 2018/19 and beyond
- Management and monitoring of interactions with protected species and sharks
- Planning and operation of the DWG/MPI Compliance Group

2.8.2 Department of Conservation (DOC)

The key projects that the Deepwater FM team will work with DOC to progress during 2017/18 will be:

- Implementation of protected species frameworks, including the NPOA Seabirds, NPOA Sharks and the New Zealand sea lion / Rāpōka Threat Management Plan
- Planning research and observer services for delivery in 2018/19

DOC carries out research each year focussed on protected species interactions with fisheries in New Zealand waters. Some of the research DOC plans to carry out in 2017/18 will be relevant to the deepwater management actions, and should be taken into account for future management decisions and research planning activities.

For more detail on the projects in Table 12, please see the Marine Conservation Services Annual Plan for 2017/18.²²

Table 12: 2017/18 DOC research projects that relate to Deepwater fisheries

Project code	Title
Interaction Projects	
INT2015-03	Identification and storage of cold water coral bycatch specimens
INT2016-02	Identification of seabirds captured in New Zealand fisheries

²¹ The 2010 MOU can be accessed [here](http://www.fish.govt.nz/NR/rdonlvres/2E71D225-5866-4C47-8C72-96FBC7F4B66E/0/MOU2010_signed.pdf). www.fish.govt.nz/NR/rdonlvres/2E71D225-5866-4C47-8C72-96FBC7F4B66E/0/MOU2010_signed.pdf

²² The Marine Conservation Services Annual Plans can be accessed here: <http://www.doc.govt.nz/our-work/conservation-services-programme/>

INT2017-01	Observing commercial fisheries
INT2017-03	Identification of marine mammals, turtles and protected fish captured in New Zealand fisheries
Population Projects	
POP2015-02	Flesh-footed shearwater: Various locations population project
POP2017-01	Chatham Island seabird research
POP2017-02	Indirect effects of fishing on New Zealand sea lions
POP2017-03	Salvin's albatross: Bounty Islands population project
POP2017-04	Auckland Islands seabird research
POP2017-05	New Zealand sea lion: Auckland Islands pup count
POP2017-07	The age and growth of New Zealand protected corals at high risk
Mitigation projects	
MIT2016-01	Protected species bycatch media
MIT2017-02	Characterisation and development of offal management for small vessels
MIT2017-03	Characterisation and mitigation of protected species interactions in the inshore trawl fishery

3 Implementation of National Plan Frameworks for Protected Species

3.1 NATIONAL PLAN OF ACTION FOR SEABIRDS

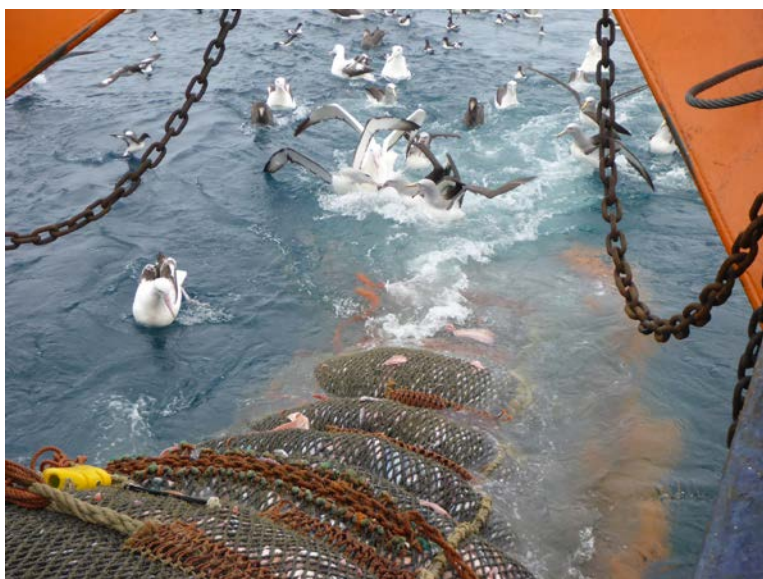
The [NPOA Seabirds](#)²³ sets out objectives for five years to guide management of incidental seabird catch in New Zealand fisheries. The objectives are achieved through integration into MPI's annual and five year plans for fisheries, and this AOP sets the prioritised actions and services needed to meet these objectives for deepwater fisheries. The 5-year review of the NPOA will begin in 2017.

The NPOA Seabirds objectives address four key areas:

- i) a **practical objective** focused on continuous improvement to reduce and where practicable, eliminate the incidental mortality of seabirds
- ii) a **biological risk objective** focused on ensuring seabird populations remain at or attain a favourable conservation status
- iii) a **research and development objective** focused on researching mitigation and observation methods, and researching seabird biology, demography and ecology and
- iv) an **international objective** focused on the implementation of best practice mitigation in other fishing fleets that overlap with New Zealand breeding seabirds

The NPOA seabirds employs a quantitative risk assessment framework that is used to generate quantitative risk scores for seabird species. It identifies the seabird species most at most risk from commercial fishing, as well as the fisheries that contribute the greatest risk to these seabirds. These are then prioritised for management action to reduce the overall risk that commercial fishing poses to seabirds over time.

The risk assessment calculates a risk score, which is defined as the ratio of annual potential fatalities (APFs; an estimate of the number of birds killed in fisheries each year) to the population sustainability threshold (PST; which is the maximum number of seabirds, not including natural mortality, that may be removed from the population while still allowing that population to achieve a defined population recovery



or stabilisation outcome, including explicit considerations of uncertainty). The default setting for the PST is a population outcome whereby the population will be at or above half the carrying capacity, with 95% certainty.

²³The National Plan of Action – 2013, to reduce the incidental catch of seabirds in New Zealand Fisheries

A seabird species is considered to be at ‘very high risk’ from fishing, if the ratio of the estimated mean APF to the mean PST is higher than 1. A species is considered to be at ‘high risk’ from fishing if the ratio of APFs to the PST is above 0.3. The most recent assessment²⁴, based on data to the end of the 2014-15 fishing year, identified the Black Petrel to be at ‘very high’ risk from fishing. A further seven species were classified as ‘high risk’. The risk assessment is an ongoing process of iterative improvement, and is updated as the methodology improves and when new data becomes available, meaning risk scores can change over time.

The risk assessment allows for species level risk to be disaggregated and assigned to different fisheries based on their proportional contribution to total impact. Deepwater fisheries that contribute more than 10% to the risk of ‘very high’ and ‘high risk’ seabird species, as well as the estimated APF contribution from all deepwater fisheries, is detailed in Table 13.

Fully quantitative population models have been developed for Southern Buller’s and White-capped albatross. The outcomes of these models will be reviewed and considered as part of any management updates as appropriate.

Table 13: Estimated contributions to the Annual Potential Fatalities for “high risk” seabirds from Deepwater fisheries that contribute 10% or more to overall species risk

Seabird Species	APF across all fisheries	APF contribution from all Deepwater fisheries	Deepwater fisheries
Salvin’s albatross	2780	1533 (55%)	small BLL ling hoki trawl scampi trawl middle depth trawl
Westland petrel	180	57 (32%)	hoki trawl
Southern Buller’s albatross	528	381 (72%)	hoki trawl squid trawl middle depth trawl
Chatham Islands albatross	155	134 (86%)	small ling BLL deepwater trawl
NZ white-capped albatross	3830	1357 (35%)	hoki trawl

3.1.1 Current Management Approach for Deepwater Fisheries

In Deepwater fisheries, seabird interactions are avoided or mitigated by:

- mandatory use of seabird scaring devices and implementation of seabird mitigation measures²⁵

²⁴ Ministry for Primary Industries (2016) Aquatic Environment and Biodiversity Annual Review 2016. Compiled by the Fisheries Management Science Team, Ministry for Primary Industries. 790p.

²⁵ Regulations require trawlers over 28m overall length to deploy a seabird scaring device and bottom longliners to deploy streamer (tori) lines, restrict offal and fish discharge and either set at night or use an approved line weighting regime. See [here](#) for links to these regulations.

- implementation of best practice seabird mitigation measures through vessel-specific Vessel Management Plans (VMPs)²⁶ for trawl vessels and Operational Procedures for bottom longliners
- an annual crew training and vessel outreach programme
- ongoing exploration of new or improved mitigation methods, and
- MPI observers monitoring vessel adherence to VMPs

VMPs outline a set of operational procedures that are specific to each vessel. These include controlling the discharge of offal during shooting and hauling, the correct deployment of bird scaring devices, and the removal of ‘stickers’ between each tow. Contingency plans and reporting requirements for capture events and equipment failures (that may increase bird capture risk) are also included.

Throughout 2017/18, actions in deepwater fisheries to support the NPOA Seabirds will be focused on continuing to improve and manage the VMP process, including the expansion of operating procedures regarding best practice and seabird training sessions for crew on bottom longline vessels. Table 14 sets out the objectives and specific services planned for deepwater fisheries management. Many of the services will contribute to the achievement of more than one objective. These measures will contribute to a reduction over time in the capture rate of seabirds from fishing activity, and contribute to achieving the practical and biological objectives of the NPOA Seabirds.



A tori line designed to prevent seabird collisions with trawl warps

²⁶ Information on VMPs is available on the DWG website [here](#)

Table 14: NPOA Seabirds Services planned for Deepwater Fisheries Management during 2017/18

Five- Year Objectives	Planned Deepwater Services for 2017/18
<p>Practical objectives</p> <p>a) All New Zealand commercial fishing vessels are shown to be implementing current best practice mitigation measures relevant to their area and fishery</p> <p>b) Recreational and customary non-commercial fishers understand the risks their fishing activities pose to seabirds, relevant organisations support and promote the use of best practice mitigation measures and it is the cultural norm in New Zealand to use such measures, and</p> <p>c) Capture rates are reducing in all New Zealand fisheries in accordance with reduction targets in the relevant planning documents for those fisheries (3 year rolling average)</p>	<ul style="list-style-type: none"> • Work with the Deepwater Environmental Liaison Officer to continually improve the Vessel Management Plan (VMP) process and apply it across the wider deepwater fleet • Support the Deepwater Environmental Liaison Officer to provide an annual crew training and outreach programme to the deepwater fleet • Continue to monitor adherence to VMPs, as well as review VMPs and education programmes to ensure all measures are as effective as possible. The goal is: <ol style="list-style-type: none"> I. 100% of observed trips have audited VMP II. 95% of observers debriefed by MPI Deepwater team III. Follow up all non-adherence • Work across the FM Directorate and with key stakeholders to monitor the targets already developed and report on appropriate seabird performance measures including capture rate reduction targets
<p>Biological risk objective</p> <p>a) The level of mortality of seabirds in New Zealand commercial fisheries is reduced so that species currently categorised as 'very high' or 'high risk' from fishing, move to a lower category of risk</p>	<ul style="list-style-type: none"> • Continue to support the delivery of increased observer coverage for scampi and bottom longline fisheries to further monitor seabird interactions to reduce uncertainty in the risk assessment. • Implement actions from the Black petrel and Flesh-footed shearwater Action Plan in the scampi fishery including: <ol style="list-style-type: none"> I. Ongoing auditing and monitoring of adherence to VMPs II. Monitoring of effectiveness of current mitigation measures detailed in VMPs • Assist with the development and implementation of species and fisheries-specific action plans for seabird species considered to be at 'very high' or 'high risk' from fishing as follows: <ol style="list-style-type: none"> I. Salvin's, Northern and Southern Buller's, and White-capped albatross plan II. Chatham Island, Campbell black-browed albatross and Westland petrel plan • Improve awareness among vessel operators of times and areas where the risk of seabird interactions is increased.
<p>Research and development objectives</p> <p>a) Where existing mitigation measures are impractical or of limited effectiveness in reducing the mortality of seabirds, new or improved mitigation measures have been sought and where identified are under development for all priority fisheries or fishing methods</p> <p>b) New observation and monitoring methods, especially in relation to poorly observed fisheries, are researched, developed and implemented; and</p> <p>c) Programmes of research to improve understanding of, and ability to mitigate, seabird incidental mortality for at risk species are underway and key projects for very high risk species have been completed</p>	<ul style="list-style-type: none"> • Investigate and implement any additional practicable and effective measures to minimise the risk of net captures based on outcomes of contracted project characterising net captures and potential contributing factors • Continue to engage in DOC and MPI research planning and review processes • Continue to engage in the Seabird Advisory Group

3.1.2 Capture rate reduction targets

Capture rate reduction targets provide a gauge against which the Practical Objective of the NPOA-Seabirds can be measured. A working group of the Seabird Advisory Group (SAG) was tasked with developing a set of principles that could be used when determining capture rate reduction targets. The group recommended that fisheries be defined using the same groupings as those of the risk assessment model, and that capture rate reduction targets should be quantitative wherever possible. These targets would then be compared to a baseline capture rate, defined as the average estimated capture rate across the three year block leading up to the implementation of the NPOA Seabirds derived from trips with at least 10% observer coverage and high confidence (a coefficient of variation²⁷ of less than 0.30). It was also agreed that these targets should be robust, therefore a test was devised based on the level of actual observed captures, the estimated captures, and the corresponding capture rate.

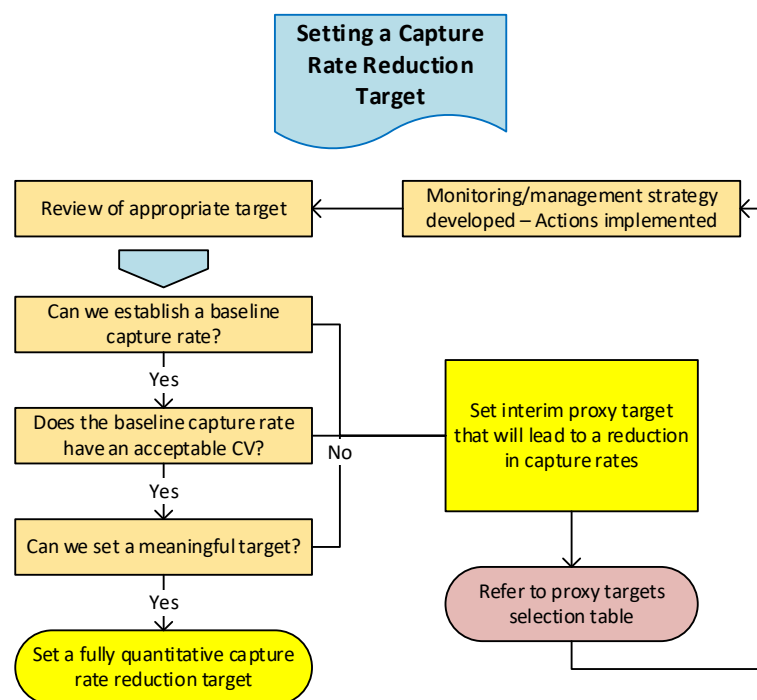


Figure 3: Steps to setting a capture rate reduction target

The calculation steps to determine the baseline capture rate, the capture rate reduction targets, and proxy targets for deepwater fisheries are outlined in Table 15. The cells shaded red indicate the step at which the above criteria have not been met and fisheries highlighted in yellow indicate that it was possible to capture quantitative capture rates. The service provider responsible for the enumeration of seabird captures calculated how a ‘statistically significant’ decrease in capture rate would compare to the baseline capture rate. The targets were set for the end of the 5 year period of the NPOA Seabirds and are measured based on a 3 year rolling average. For fisheries where the above criteria are not met, proxy targets have been developed.

²⁷ Coefficient of variation (CV) is a metric of the variation of the data around the mean. It allows for comparison of the variation within and across data sets.

Table 15: Deepwater Capture Rate Reduction Targets – as calculated and set in 2015/16

Baseline capture rate								
Fishery	Baseline observer coverage	Annual CV of captures	Observed captures	Estimated captures	Capture rate/100 tows/sets	Meaningful target?	'Target' rate/100 tows (reduction)	Suggested target/proxy
SBW trawl	>10%	0.0004-0.27	4-20	6-20	1.1	No		Continue to monitor and report, target is no significant increase (based on 3-yr rolling averages)
SQU trawl	>10%	0.039-0.134	>100	>300	14.0	Yes	12.0 (14%)	Statistically significant decrease in rate (based on 3-yr rolling average)
JMA trawl	>10%	0.037-0.421	7-33	10-34	1.0	No		Continue to monitor and report, target is no significant increase (based on 3-yr rolling averages)
SCI trawl	<10%					No		Observer coverage has been >10% twice in the most recent 4 years. A calculation of the overall observer coverage indicates that 8.4% of tows have been observed in the last five years, this is not considered sufficient to provide a robust baseline. Proxy target is to have VMPs in place on all vessels, ELO visit all scampi vessels, and a target of 15% observer coverage be set.
Deepwater trawl ²⁸	>10%	0.392-0.407	2	16-24	0.6	No		Continue to monitor and report, target is no significant increase (based on 3-yr rolling averages)
Middle depths trawl (>28 m) ²⁹	>10%	0.065-0.187	>100	>200	2.7	Yes	2.3 (15%)	Statistically significant decrease in rate (based on 3-yr rolling averages)
Large vessel BLL	>10% 09/10-11/12	0.32-0.451	4-27	>100	1.0	No		Continue to monitor and report, target is no significant increase (based on 3-yr rolling averages)
Small vessel LIN BLL	<10%					No		Work with industry to implement vessel-specific seabird management plans including the use of best practice mitigation across this fleet. Liaison officers will also provide seabird training sessions to crew. And a target of 15% of effort observed will be set.

²⁸ Deepwater trawl includes orange roughy, alfonsino and oreo species.

²⁹ Middle depth trawl includes trawl effort for all species other than those with specific categories. This includes hoki, hake and ling and a number of tier 2 species.

3.2 NATIONAL PLAN OF ACTION FOR SHARKS

The NPOA Sharks sets out six goals and accompanying five year objectives to support the management of sharks and rays in New Zealand. A qualitative risk assessment of all shark and ray species informs prioritisation of management actions and research until the completion of a quantitative risk assessment.

Actions across the Fisheries Management Directorate are focused on:

- reviewing appropriate management categories and protection status,
- based on the outcomes of the risk assessment, contracting research to continue filling information gaps about higher risk species,
- engaging in the CMS Sharks MOU where required,
- continued monitoring of the implementation of the shark finning ban, and
- working with fishers to ensure best practice handling and that mitigation measures are employed where appropriate.

In addition to these actions, the deepwater team are focusing on actions for sharks that are bycaught in some deepwater fisheries:

- improving the identification and reporting of sharks by reducing the usage of generic shark codes;
- monitoring basking shark trigger reporting;
- improving our understanding of deepwater sharks and responding to new information as it becomes available.

The deepwater team will also be contributing to the review of the NPOA Sharks that will begin in early 2018.

3.3 NEW ZEALAND SEA LION / RĀPOKA THREAT MANAGEMENT PLAN

The Minister of Conservation and the Minister for Primary Industries asked officials to develop the New Zealand sea lion / rāpoka Threat Management Plan (NZSL TMP) because the number of sea lion pups born annually at the Auckland Islands declined by 50% in the 11 years between 1998 and 2009. The Auckland Islands is the largest breeding site for sea lions with 68% of all sea lion pups being born there, so the decline from 3,000 pups to around 1,500 pups was a major cause of concern.

The vision of the NZSL TMP is to *'promote the recovery and ensure the long-term viability of New Zealand sea lions, with the ultimate goal of achieving Not Threatened status³⁰'*.

The population objectives of the TMP are:

1. The decline of the New Zealand sea lion population is halted within 5 years and
2. The population is stable or increasing within 20 years to achieve the ultimate vision of Not Threatened status.

³⁰ The DOC threat classification considers a number of criteria: number of mature individuals, predicted population trend, number of populations, number of mature individuals in the largest population, and area of occupancy of total population. In order to achieve Not Threatened status, the overall population trend would need to be stable to 10%, the number of mature individuals over 20,000, and more than the two current populations (Auckland Islands and Campbell Island).

A major part of developing the TMP was the production of a risk assessment of threats to sea lions³¹. The risk assessment focussed on the two regions with the most data available – the Auckland Islands sub-population, and the Otago coast breeding population. The risk assessment revealed that sea lions are exposed to different natural and human threats and that no single factor was solely responsible for the decline. For this reason, the TMP takes a holistic approach to mitigate key threats and promote recovery across the range of the sea lion population.

The TMP is a 5 year programme that includes four workstreams: Engagement, Mitigation Measures, Targeted Research, and Evaluation. This includes both population level initiatives and site-specific actions for mitigating threats at the main breeding sites: the Mainland/Te Waipounamu, Stewart Island/Rakiura, the Auckland Islands (Motu Maha or Maungahuka), and Campbell Island/ Motu Ihupuku. Work streams associated with the NZSL TMP will be reviewed annually to assess progress against the 5 year goals. The TMP as a whole will be reviewed every 5 years and assessed against achievement of the 5 year goals and progress towards the 20 year goals.

In addition, MPI has formed the Squid 6T Operational Plan Technical Advisory Group to meaningfully engage with stakeholders on the review of the Squid 6T Operational Plan and to get advice and recommendations on information gaps/research needs to better inform management settings. This includes consideration of work to improve understanding of the efficacy of Sea Lion Exclusion Devices (SLEDs).

Additional information on the TMP and the associated work plan may be found on the DOC website <http://www.doc.govt.nz/nature/native-animals/marine-mammals/seals/new-zealand-sea-lion/docs-work/new-zealand-sea-lion-rapoka-threat-management-plan/>.

³¹ Roberts et al. 2016. [Quantitative Risk Assessment of Threats to New Zealand Sea lions](#). NIWA, Wellington, New Zealand.

Appendix 1

Biological sampling targets for deepwater fisheries for 2017/18

Species	FMA/stock	LF target	Otolith target	Area	Months	Obs plan 'Fishery complex'	
Hoki	Sub-Antarctic	400	1600	Sub-Antarctic	Year-round (except July-Aug)	Sub-Ant Mid-depths	
	Chatham Rise	400	1600	Chatham Rise	Year-round (except Jul-Aug)	Chatham Rise Mid-depths	
	WCSI	400	1000	WCSI	May-September	WCSI and inside line	
	Cook Strait	200	1000	Cook Strait	Year-round	Cook Strait HOK	
Orange roughy	ORH 1	30/area		ORH 1	Year-round	North Island deepwater	
	ORH 2A North	30	Survey only	ORH 2A North	Year-round	ORH MEC & ECNI North Island deepwater	
	ORH MEC	30	Survey only	ORH MEC	Year-round	ORH MEC & ECNI North Island deepwater	
	ORH NW Rise	50	300	Northwest Rise	Year-round	Chatham Rise DW	
	ORH E&S Rise	50	300	East & South Rise	Year-round	Chatham Rise DW	
	ORH 7A + WB	50	300	ORH 7A	Year-round	West Coast deepwater	
	ORH sub-Antarctic	30		Sub-Ant ORH	Year-round	Sub-Ant DW	
Southern blue whiting	SBW 6I	100	900	Campbell Island	August-September	Southern blue whiting	
	SBW 6B	50	600	Bounties	August-September	Sub-Ant Mid-depths Southern blue whiting	
	SBW 6R/6A	50	Survey only	Pukaki/Aucklands	September	Sub-Ant Mid-depths Southern blue whiting	
Hake	HAK 1	100	1,000	Sub-Ant	October-February	Sub-Ant Mid depths	
	HAK 4	100	1,000	Mernoo Bank/CR	September-February	Chatham Rise Mid-depths	
	HAK 7	100	1,000	WCSI	June – September	WCSI and inside line	
Ling	Cook Strait	50	600	Cook Strait	June-September	Cook Strait HOK	
	LIN 3 & 4	Line	100	1,100	Chatham Rise	June-October	Bottom longline
		Trawl	100	900	Chatham Rise	October-May	Chatham Rise Mid-depths
	LIN 5 & 6	Line	10	1,100	Puysegur	October-December (spawning)	Bottom longline
		Trawl	100	1,100	Sub-Ant	September-April	Sub-Ant Mid-depths
	LIN 7	200	1,100	WCSI	June-October	WCSI Mid-depths	

Species		FMA/stock	LF target	Otolith target	Area	Months	Obs plan 'Fishery complex'	
Oreos	Black	BOE 3A	30	400	ECSI	October-March	Chatham Rise DW	
		BOE 4	30	-	Chatham Rise	October-March	Chatham Rise DW	
	Smooth	SSO 3A	30	-	ECSI	October-March	Chatham Rise DW	
		SSO 4	30	300	Chatham Rise	October-March	Chatham Rise DW	
		SSO 6	Bounty	30	-	Bounties	Year-round	Sub-Ant DW
			Pukaki	30		Pukaki	Year-round	
Jack mackerel	<i>T. declivis</i>	JMD 3	50	900	ECSI	January-April	Chatham Rise Mid-depths	
		JMD 7	200	900	WCNI	October-July	WCNI	
	<i>T. murphyi</i>	JMM 3	100	700	ECSI/Southland	January-April	Chatham Rise / Sub-Ant Mid-depths	
		JMM 7	100	700	WCNI	October-July	WCNI	
	<i>T. novaezelandiae</i>	JMN 3	30	0		January-April		
		JMN 7	200	900	WCNI	October-July	WCNI	
Squid	SQU 1T	400	N/A	Sub-Ant	January-June	Squid		
	SQU 6T	400		Sub-Ant	January-June	Squid		
Scampi	SCI 1	50	N/A	Auckland/Bay of Plenty	All year	Scampi		
	SCI 2	50		Hawkes Bay/Wairarapa	September-April	Scampi		
	SCI 3/4A	50		Chatham Rise	All year	Scampi		
	SCI 6A	50		Auckland Island	February-November	Scampi		