



Annual Review Report for Deepwater Fisheries for 2014/15

MPI Technical Paper No: 2016/09

Prepared by the Ministry for Primary Industries

ISBN No: 978-1-77665-197-9 (online)

ISSN No: 2253-3923 (online)

ISBN No: 978-1-77665-198-6 (print)

ISSN No: 2253-3915 (print)

March 2016

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Introduction

Overview of New Zealand's deepwater fisheries

New Zealand's Deepwater and Middle-depth fisheries (deepwater fisheries) are the fisheries that predominantly occur in offshore waters beyond the 12 nautical mile (nm) limit of the territorial sea. Deepwater fishing activity occurs out to the 200nm limit of New Zealand's exclusive economic zone (EEZ). Deepwater fisheries include seven of New Zealand's ten largest export earning wild-capture species, which together accounted for over NZ\$450 million in export earnings in 2014.

The management of New Zealand's deepwater fisheries is a collaborative process between the Ministry for Primary Industries (MPI) (representing the Crown and its statutory obligations to the public) and the deepwater sector of the commercial fishing industry, represented by the Deepwater Group Ltd (DWG). Management Objectives are achieved by drawing on the combined knowledge, experience, capabilities and perspectives of both MPI and DWG.

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

Table 1: Categorisation of deepwater species

	Stocks included the National Deepwater Plan ¹ (Tier 1 plan)	Stocks not currently included in National Deepwater Plan (date of expected inclusion or Tier 1 plan containing species)
Tier 1 Species	Hoki : all Orange roughy: all Southern blue whiting: all Ling: LIN3 - LIN7 Hake: all Jack mackerel: JMA3 and JMA7 only Oreo: all	Scampi: all (tbc) Squid: all (tbc)
Tier 2 Species	Silver warehou: all (HOK) Spiny dogfish: SPD4, SPD5 (HOK) Frostfish: FRO3-FRO9 (HOK) White warehou: all (HOK) Lookdown dory: all (HOK) Black cardinalfish: all (ORH) Ribaldo: RIB3-RIB8 (LIN) Patagonian toothfish: all (LIN) Redbait: all (JMA) Blue (English) mackerel: EMA3, EMA7 (JMA) Rubyfish: all (OEO) Alfonsino: all (OEO)	Barracouta: BAR4, BAR5, BAR7 (SQU) Prawn killer: all (SCI) Sea perch: SPE3-SPE7 (SCI) Pale ghost shark: all (tbc) Dark ghost shark: GSH4-GSH6 (tbc) Deepwater crabs (KIC/GSC/CHC): all (tbc) Gemfish: SKI3, SKI7 (tbc)
Tier 3 Species		Non-QMS species

¹ For some species (e.g. ling), management of some stocks falls under the National Deepwater Plan while the remainder are managed under the National Inshore Finfish Plan.

Overview of the National Deepwater Plan

From 1 July 2011 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 three parts (Figure 1).

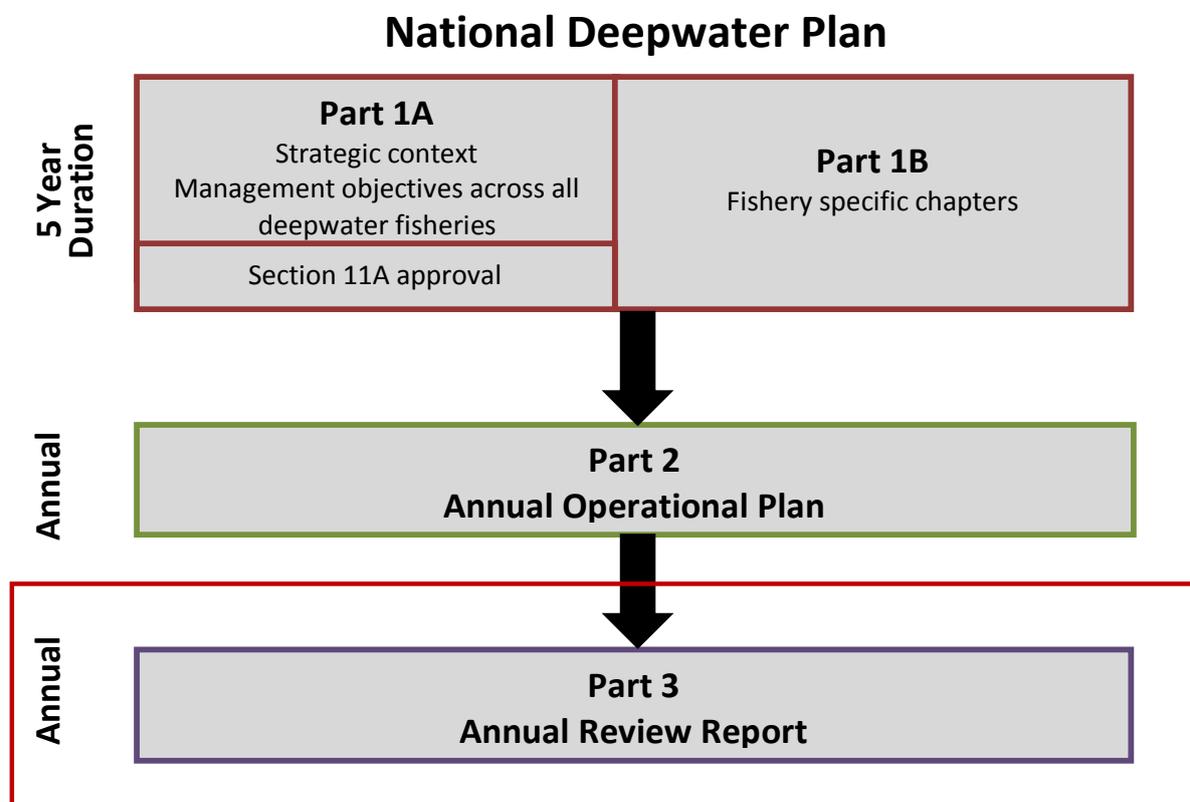


Figure 1: The three components of the National Deepwater Plan.

Part 1 of the National Deepwater Plan establishes the five year 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. Consequently, it must be considered each time the Minister makes decisions or recommendations concerning regulation or control of fishing or any sustainability measures relating to deepwater fisheries.

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

The fishery-specific chapters describe the operational objectives for each target fishery and their key associated bycatch species, as well as how performance against both the management and operational objectives will be assessed at the fishery level. These chapters also describe any agreed harvest strategy in place for the relevant species.

Parts 2 and 3 of the National Deepwater Plan are delivered annually and form the Annual Fisheries Planning Process. This annual cycle incorporates planning and reporting by both financial year (1 July – 30 June) and fishing year (1 October – 30 September).

All Annual Operational Plans and Annual Review Reports are provided to MPI's Director Fisheries Management for approval, but are not approved under section 11A. Statutory interventions required to regulate deepwater fisheries will be identified in the Annual Operational Plan.

Part 2 of the National Deepwater Plan consists of the five Annual Operational Plans (AOPs). Each Annual Operational Plan details the Management Actions and Services scheduled for delivery over the next financial year. All Management Actions and Services aim to contribute to meeting the Management Objectives and Operational Objectives specified in Part 1 of the National Deepwater Plan. Up-to-date management overviews are also provided for all the deepwater fisheries within completed chapters in Part 1B.

Part 3 of the National Deepwater Plan consists of the five Annual Review Reports (ARRs). Each ARR assesses progress during the previous financial year towards meeting the year's management priorities, by reviewing delivery of the relevant AOP. Each Annual Review Report also reports on the annual performance of deepwater fisheries in relation to environmental interactions and impacts and against the management actions specified in the AOP.

The 2014/15 Deepwater Annual Review Report

This Annual Review Report is split into three parts:

Part 3A describes the progress that has been made during the 2014/15 financial year towards delivering the Management Actions set out in the 2014/15 Annual Operational Plan.

Achievement of these annual priorities aims to contribute towards meeting the five year high level Management Objectives and Operational Objectives set out in Part 1 of the National Deepwater Plan.

Part 3B provides detail on delivery of Fisheries Services relevant to deepwater fisheries management that are planned by financial year (1 July – 30 June). These processes include the planning and contracting of fisheries and conservation research projects, planning observer coverage on the deepwater fleet and the cost recovery regime.

Part 3C provides a summary report of the combined environmental impacts of deepwater fishing activity, and on the deepwater fleet's adherence to the suite of non-regulatory management measures in place during the 2014/15 fishing year (1 October 2014 – 30 September 2015).

The periods encompassed by the 2014/15 financial and fishing years are shown in Figure 2 below.



Figure 2. Diagram indicating the periods encompassed by the 2014/15 financial year and the 2014/15 fishing year

This Annual Review Report also contains several appendices:

- Appendix I summarises catch of deepwater stocks during the 2014/15 fishing year. Also included, where available, is observer coverage, the amount of deemed values invoiced, and export earnings during the 2014 calendar year
- Appendix II summarises the results of the October 2014 and April 2015 sustainability rounds
- Appendix III summarises landings of all Tier 3 (non-QMS) species by the core deepwater fleet between the five years between 2010/11 and 2014/15
- Appendix IV summarises cost recovery levies for deepwater stocks for 2014/15
- Appendix V comprises the Interim Trip Report template

Part 3A: Progress on Management Actions

The 2014/15 Annual Operational Plan included 17 Management Actions that aimed to progress delivery of the Management Objectives and Operational Objectives specified in Part 1 of the National Deepwater Plan. Table 2 summarises progress relating to each of these Management Actions.

For reference, the 2014/15 Management Actions are listed in the grey boxes in Table 2, taken verbatim from the 2014/15 AOP, reflecting the situation in July 2014.

The report on progress made between 1 July 2014 and 30 September 2015 is provided in the white boxes in Table 2.

Table 2: Management Actions for deepwater Fisheries Management for 2014/15 financial year

1	Fisheries Sustainability Controls: Review catch limits and management settings as required		
	<p>Sustainability decisions consist primarily of catch limit (TAC & TACC) and deemed value reviews. These are completed in two rounds, one for stocks with a 1 October fishing year and another for stocks with a 1 April fishing year. In addition to stock-specific reviews, the deemed value rates for all deepwater stocks will be assessed against the performance indicators in the deemed value guidelines.</p> <ul style="list-style-type: none"> October 2014: HOK1, ORH 2A South, 2B and 3A (Mid East Coast), ORH 7A (Challenger Plateau) ORH3B NWR (North West Chatham Rise stock) - ACHIEVED April 2015: SBW6B, GSC5 deemed value rates - ACHIEVED <p>Action relates to Management Objectives 1.1, 1.3, 2.1, 2.2, 2.4, 2.5, and 2.6</p> <p>For the 1 October 2014 sustainability round, catch limits were reviewed and changed for six deepwater stocks:</p> <ul style="list-style-type: none"> Hoki (HOK1) Orange roughy (ORH2A, ORH2B, ORH3A, (collectively referred as Mid East Coast), ORH3B and ORH7A) <p>The only deemed value rate review for deepwater stocks during the 2014 October sustainability round was undertaken for ORH7A in conjunction with the catch limit review..</p> <p>For the April 2015 sustainability round, catch limits were reviewed and changed for:</p> <ul style="list-style-type: none"> Southern blue whiting (SBW6I) <p>Deemed value rates were reviewed for all giant spider crab stocks (GSC) during the April 2015 sustainability round</p>		
2	Fisheries Planning: Continue implementation of the National Deepwater Plan		
	<p>Implementation of the National Deepwater Plan for the 2014/15 financial year will include the core activities listed below.</p> <p>Work will progress during 2014-15 to identify strategic priorities across the Fisheries Management Directorate and inform setting of updated management objectives for deepwater fisheries.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Core:</p> <ul style="list-style-type: none"> Annual Operational Plan for 2015/16 Annual Review Report for 2013/14 Completion/development of fishery-specific chapters for SCI and SQU </td> <td style="width: 50%; vertical-align: top;"> <p>Key Actions 14/15:</p> <ul style="list-style-type: none"> Review management objectives within the National Deepwater Plan in context of strategic priorities </td> </tr> </table> <p>Action relates to all Management Objectives</p> <p>During the 2014/15 financial year, the Annual Review Report for 2013/14 was completed and the Annual Operational Plan (AOP) for 2014/15 was drafted but not finalised and released. Actions to implement the NPOA-Seabirds and NPOA-Sharks have been incorporated into the AOP for 2015/16. The scampi and squid fishery plan chapters remain in development. All National Deepwater Plan documents can be found online here.</p>	<p>Core:</p> <ul style="list-style-type: none"> Annual Operational Plan for 2015/16 Annual Review Report for 2013/14 Completion/development of fishery-specific chapters for SCI and SQU 	<p>Key Actions 14/15:</p> <ul style="list-style-type: none"> Review management objectives within the National Deepwater Plan in context of strategic priorities
<p>Core:</p> <ul style="list-style-type: none"> Annual Operational Plan for 2015/16 Annual Review Report for 2013/14 Completion/development of fishery-specific chapters for SCI and SQU 	<p>Key Actions 14/15:</p> <ul style="list-style-type: none"> Review management objectives within the National Deepwater Plan in context of strategic priorities 		

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

This management action is a core function and will be given priority attention throughout the year to ensure that all response timeframes are met

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 the public and respond to all OIA requests and Government correspondence regarding deepwater fisheries issues

Action relates to all Management Objectives

During the 2014/15 financial year, the deepwater fisheries management team completed four Official Information Act requests, six aide memoires, eight briefing papers, three submissions to Cabinet, two Ministerials and four written parliamentary questions. During this period (November 2014) the Official Information Act team was established and has taken over responsibility for drafting responses to OIA requests.

The Deepwater Fisheries Management team was not involved in any special permits issued during the 2014/15 financial year.

4 Protected Species Frameworks – Work collaboratively with the Department of Conservation to develop and draft a Threat Management Plan (TMP) for the New Zealand Sea Lion

The New Zealand sea lion is classified as Nationally Critical due to an ongoing population decline at key breeding sites on the Auckland Islands. It is understood that a range of threats are preventing recovery and the development of a TMP will aim to assess all threats and prioritise management actions that will aim to halt the population decline

Key Actions for 14/15:

- Work with DOC to develop a project plan detailing the timeline over which the TMP will be developed
- Develop and prioritise research needs and produce an interim research plan for the next two field seasons (while the TMP is developed)
- Input as necessary to the development and implementation of the sea lion risk assessment, with a focus on fisheries related mortality

Action relates to Management Objectives 1.6, 2.5, and 2.6

During the 2014/15 financial year, the following actions relating to the New Zealand sea lion TMP (details of which can be accessed [here](#)) were completed:

- A workshop on pup mortality was held during June 2014
- The risk assessment workstream identified threats to sea lions and a demographic model was developed incorporating these threats
- The demographic model was reviewed by an expert panel during a workshop held between 28 April and 1 May 2015
- Field data was collected from the Auckland and Campbell Islands sites during summer 2015. The 2015 Auckland Island pup count was 1,576, which was one higher than the 2014 estimate and the fourth lowest recorded for this area (more details [here](#))
- The Campbell Island pup count was estimated at 696. This was up by 12 on the most recent count (from 2010). Of the 696 born, the mortality rate was 58%.

5 Protected Species Frameworks – NPOA Sharks: Implement components of the National Plan of Action for Sharks (NPOA Sharks) relevant to deepwater fisheries

The NPOA Sharks sets out six goals and accompanying 5-year objectives to support the management of sharks. A quantitative risk assessment of all shark species is scheduled to be completed in December 2015 which will inform future prioritisation of management actions and research. This Management Action is focused on achieving objectives of the NPOA-Sharks, and addressing at-risk species identified in the risk assessment.

Key Actions for 14/15:

- Develop and apply regulatory framework to eliminate shark finning in New Zealand
- Draft and execute Implementation Plan in collaboration with DOC, MFAT and external stakeholders
- Based on outcomes of risk assessment, address risks to shark species identified from deepwater fisheries

Action relates to Management Objectives 1.6, 2.5, and 2.6

During the 2014/15 financial year, the following actions relating to the NPOA-sharks were completed:

- On 1 October 2014 regulations came into force that:
 - Made it illegal for commercial fishers to remove the fins from any shark and discard the body of the shark at sea.
 - Require fishers wishing to land fins from spiny dogfish and all non-QMS species to have the fins naturally attached to the body of the fish
 - Require fishers wishing to land blue shark fins to have the fins artificially attached to the body of the fish
 - Require fishers wishing to land fins from seven QMS species to store and land the fins separately by species and in accordance with a gazetted ratio
- In November 2014 a qualitative (level 1) risk assessment workshop was held. The focus was on fisheries threats to shark populations. The report from the workshop is available [here](#).
- In June 2015 New Zealand became a signatory to the Memorandum of Understanding on the Conservation of Migratory Sharks. Details are available [here](#).

6 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 was approved in 2013 and sets out the long term and five year objectives relating to managing fisheries interactions with seabirds.

The NPOA is underpinned by MPI's Risk Assessment approach to seabirds, which has identified the seabird species most at risk of being adversely affected by commercial fishing in New Zealand. The risk assessment also identified which fisheries compose the highest proportion of that risk.

This Management Action focuses on identifying and addressing the priority risk areas for deepwater fisheries. Actions aim to address, for example, where a deepwater fishery has been identified as contributing the majority of a risk score for a particular seabird, or where there is a high level of uncertainty regarding the level of risk generated from a particular deepwater fishery.

Further management actions related to monitoring adherence to non-regulatory management measures (principally Vessel Management Plans) aimed at reducing the risk of seabird interactions with the deepwater fleet are addressed through Management Action 10.

Key Actions for 14/15:

- Work across the Fisheries Management Directorate, and with key stakeholders to develop and report against appropriate seabird performance measures that inform progress towards meeting the objectives in the NPOA-Seabirds
- Develop and assist with implementation of species and fisheries specific action plans for seabird species with a risk score of >0.1 in the updated seabird risk assessment
- Increase awareness among vessel operators of the seasonal timing and location of specific seabird captures issues among the deepwater fleet. For example; Support DWG in development of a factsheet focussed on risk factors that contribute to and mitigation tools that reduce incidental captures of Salvin's and Buller's albatross
- Increase observer coverage to monitor seabird interactions in the bottom long-line fishery to reduce uncertainty in the risk assessment. Enable the Deepwater Environmental Liaison Officer (ELO) to work with vessel operators in the BLL fishery to increase awareness of available seabird mitigation tools
- Work with DOC to progress project to improve design of bird bafflers and encourage uptake across the

deepwater fleet

- Work with stakeholders to minimise risk of net captures
- Provide the NPOA Stakeholder Advisory Group with additional detail on the VMP process
- Work with the DWG ELO to develop the VMP process and apply it across more sectors within the deepwater fleet – including scampi and BLL

Action linked to Management Objective 2.5

During the 2014/15 financial year, the following actions relating to the NPOA-seabirds were completed:

- Capture rate reduction targets were developed and agreed for selected deepwater fisheries and will be included in the 2016/17 Annual Operational Plan
- An action plan was drafted for Salvin's, Northern and Southern Buller's, and White-capped albatrosses but has not yet been finalised.
- DW mollymawk fact sheet developed (available [here](#))
- The bird baffler design project progressed through the design and construction phases. Deployment on a vessel, and field testing, is scheduled to take place during 2015/16
- A research project was planned and tendered for 2015/16 to examine seabird captures and identify potential factors that contribute to net captures
- A VMP design for the scampi fleet was developed and then completed for each vessel. The DWG ELO visited each vessel in the scampi fleet, delivered training to the crew and finalised the VMP.
- An interim Code of Practice was drafted and sent to the largest autoline and non-autoline bottom longline vessels. A new BLL Operational Procedure will be drafted during 2015/16. VMPs will not be developed for each vessel as most aspects of the operation of BLL vessels of relevance to seabirds are covered by legislation.
- The DWG ELO visited approximately 30% of the BLL fleet to gather information and will aim to visit the remainder of the fleet during 2015/16.

7 Deepwater Research Planning: Refresh the 10 Year Research Programme for Deepwater fisheries and develop and implement an annual process for identifying additional research

Current contracts under the 10 Year Research Programme conclude at the end of the 2014/15 financial year. The research needs for the next five years will be reviewed and the next phase of the ten year programme will be contracted. The 10 Year Research Programme recognises that not all research needs can be planned in advance. For this reason, the 10 Year Research Programme allows for annual planning and prioritisation of additional research.

Key Actions for 14/15:

- Review existing research needs and negotiate new contracts for the period 2015/16 to 2019/20
- Advance work started in 12/13 on formalising an additional research process for identifying, prioritising, and contracting additional research with the Finance Property and Procurement Team

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

During the 2014/15 financial year the following actions relating to research planning were completed:

- The 5-year research plan was updated to reflect the outputs of management strategy evaluations
- A decision was made to contract research on an annual basis in recognition of the wider processes including the first principles cost recovery review.
- Research for 2015/16 was planned and approved.

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

Stakeholder engagement will continue to form an integrated part of progressing specific fisheries management projects and will form part of each project's work programme. These projects may utilise the existing engagement forums that MPI convenes throughout the year to inform on the fisheries planning process and business as usual management developments.

Engagement with all stakeholders will continue, aiming to ensure deepwater fisheries management information is available and accessible for all stakeholders and that sufficient opportunities are provided to

allow for input and participation in the Deepwater Fisheries Planning process and the ongoing management of New Zealand's deepwater fisheries.

Core:

- Ensure sufficient and appropriate engagement with tangata whenua; address issues as necessary through further integration of Iwi Fisheries Plans (IFPs) and Forum Fisheries Plans (FFPs) into the Deepwater Fisheries Planning process
- Engage on environmental issues relating to management of deepwater fisheries through the Environmental Engagement Forums
- Maintain an open and transparent management environment by ensuring that all management information is available and easily accessible on MPI's website for stakeholders and tangata whenua consideration

Action linked to Management Objectives 1.6 and 1.7

No new Iwi Fisheries Plans or Forum Fisheries Plans were finalised in the 2014/15 year. Directed efforts were made to engage with tangata whenua for all deepwater fisheries consultations throughout the year including the distribution of all sustainability round advice papers to iwi and iwi forums. In addition, relevant specific objectives from IFPs and FFPs were incorporated into sustainability round advice to the Minister.

9 Deepwater Monitoring: Planning Deepwater Observer Coverage for 2015-16 financial year

Observer coverage of deepwater fisheries is planned by financial year for each fishery. The link between biological sampling requirements and the coverage planned for a fishery is currently difficult to define. Work is in progress to better define sampling requirements to support implementation of the 10 Year Research Programme and subsequently plan observer coverage directly based on those requirements.

Core:

- Develop observer coverage plan for 2015/16 financial year

Key Actions for 14/15:

- Develop coverage and sampling targets for each of the next five years to align with project scheduled in the updated 10 Year Research Programme
- Update observer briefing documents for all Tier 1 species to ensure that appropriate sampling regime is undertaken
- Work to identify what and how samples for Tier 2 species should be taken by observers

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

The 2015/16 observer coverage plan, as well as biological sampling requirements for deepwater fisheries were both completed and are available in the Deepwater Fisheries Management team's AOP, which is available [here](#). Observer briefing documents have also been updated.

10 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 non-regulatory management measures are employed to monitor the environmental interactions of the 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:

- i. Marine Mammal Operational Procedure
- ii. Vessel Management Plans - Seabirds
- iii. Shark Operational Procedure
- iv. Operational Plan to manage the fisheries related mortality of New Zealand sea lions in the southern squid fishery at the Auckland Islands (SQU6T)

v. Operational Plan to manage fisheries related mortality of New Zealand Sea Lions in the southern blue whiting fishery at Campbell Island

Core:

- Monitor the deepwater fleet through representative coverage by MPI Observers in key deepwater fisheries
- Monitor protected species interactions across all trips via observer debriefs and in-trip trigger point reporting
- Vessel adherence with management measures is audited by on board observers
- Report levels of adherence to these OPs to stakeholders through the ARR
- Continue to support the education and awareness programme run by the DWG Environmental Liaison Officer
- Continue to minimise the use of generic shark reporting codes through observer training and circulation of the updated shark ID guide

Key Actions for 14/15:

- Work of the ELO to improve interaction with coastal vessels/fur seal reporting

Action relates to Management Objectives 2.4, 2.5 and 1.6

Adherence of the deepwater fleet to non-regulatory measures relating to environmental interactions or protected species is undertaken by observers. Details regarding adherence to the various measures are provided in Part 3C of this Report.

11 Deepwater Monitoring – Monitor adherence to all 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 catch limits in the hoki, orange roughy, and oreo fisheries. In addition, hoki management areas (HMAs) have been created to reduce fishing mortality on juvenile hoki in important nursery areas.

Core:

- Continue monitoring fleet adherence to sub-QMA catch limits and HMA requirements
- Report level of adherence to these measures to stakeholders through the ARR
- Where advice is provided on any TAC amendment for stocks which are managed via sub-QMA catch limits, the Minister will request that industry adhere to the updated catch limits

Action linked to Management Objectives 1.1, 1.3 and 2.1

DWG has developed processes for fishers to report catch in relation to sub-area catch limits. MPI monitors adherence to these limits using information provided by DWG together with statutory catch and effort reporting information.

Internal quarterly monitoring reports have been produced detailing performance against the relevant non-regulatory management measures for the 2014/15 fishing year. These are summarised in Part 3C of this Report and in the species management summaries in Appendix I.

12 Deepwater Monitoring – benthic invertebrates: Monitor and measure the nature and extent of benthic interactions from deepwater fishing activity

The approach to managing the effects of fishing on deepwater benthic communities is to avoid impacts through closure of large areas of the EEZ to bottom trawling. The level of interactions between deepwater

vessels and benthic invertebrates is monitored via observer coverage. The trawl footprint is also monitored each year and the most recent information available is reported in the ARR.

Core:

- Monitor the trawl footprint of Tier 1 species
- Report the benthic footprint of deepwater fishing and volume of benthic species captured in the ARR

Key Actions for 14/15:

- Input if necessary and respond to outcomes of science benthic workshop

Action linked to Management Objective 2.7

MPI contracts a research provider to map the annual trawl footprint for all Tier 1 species, and for deepwater fisheries overall. Delivery on this project is currently running behind the reporting schedule. The latest information available includes the trawl footprint up to the end of the 2010/11 fishing year. The research report is available [here](#) and is summarised in Part 3C of this ARR together with interactions with benthic species reported by MPI Observers.

13 Registry Services: Continue implementation of registration process and risk-based observer coverage for foreign charter vessels (FCVs)

The Deepwater FM team provides input to all advice papers relating to MPI's consent to the registration of FCVs operating in deepwater fisheries under section 103 of the Fisheries Act 1996.

Core:

- Aid where needed in the risk profiling, registration, and subsequent observer coverage process

Key Actions for 14/15:

- Work with the Ministry of Business, Innovation and Employment and Maritime NZ to improve information sharing and input to the risk profiling and registration process

Action linked to Management Objective 1.6

The Deepwater FM team coordinated the work programme of the FCV inter-agency operational and guidance group, the purpose of which was to improve cross-agency information sharing. This included establishing an inter-agency data management group to identify the types of information each agency requires and to provide draft templates to collect the information on.

The FCV operational group will continue to meet monthly to discuss and refine inter-agency data sharing to input into the risk profiling of foreign-owned vessels.

14 Fisheries Management Controls – Regulatory amendments

The priority regulatory changes that the Deepwater FM team will progress during 14/15 are amendments consequential to the passing of the Fisheries (Foreign Charter Vessels and Other Matters) Amendment Act 2014. The Amendment Act alters the registration process for FCVs and encompasses expanded powers for observers, which will require amending the Fisheries (Cost Recovery) Rules 2001. A number of operational changes resulting from these new powers will also need to be implemented.

MPI will also progress minor regulatory changes including the removal of the current charge for observer authorised discards from vessels.

Key Actions 14/15:

- Consult on consequential regulatory amendments to the Fisheries (Cost Recovery) Rules 2001
- Assist the MPI Observer Programme where necessary to implement the required operational changes to the observers' training and information collection processes to support inclusion of expanded powers
- Continue to share information and collaborate with the Ministry of Business, Innovation, and Employment and Maritime New Zealand throughout the process

Action linked to Management Objective 1.1, 1.2, 2.1

Consultation on the proposed regulatory change removing the fee for observer authorised discards was undertaken during April/May 2015. The regulatory change will come into effect during the 2015/16 financial year. Proposed amendments to the Fisheries (Cost Recovery) Rules will be progressed during the 2015/16 financial year.

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

A significant component of this management action comprises working with DWG to service the requirements of the Marine Stewardship Council assessment and certification process. MPI supports industry to achieve and maintain certification of key deepwater fisheries, and progress performance of all deepwater fisheries towards meeting the MSC Standard.

The Deepwater FM team will also work across MPI to progress alternative approaches to market initiatives for New Zealand's deepwater seafood.

Core:

- Provide information and support to assist with audits of certified fisheries (LIN, HOK, SBW, HAK)
- Provide information necessary to assist with the assessments of fisheries within the certification process (ORH, OEO, SQU)

Key Actions for 14/15:

- Assist DWG progressing the MSC assessment of three ORH stocks including through the provision of any required documentation and data, and support resolving approaches to demonstrating these fisheries are managed consistent with the MSC Standard
- Provide input as required on consultations on the MSC Standard review
- Provide input and support to DWG as required to address the conditions of certification, including increasing observer coverage, developing mitigation procedures and completing additional analyses in relation to seabird interactions in the ling longline fisheries

Action linked to Management Objectives 1.1 and 1.5

MPI provided support for the MSC assessment of three ORH stocks, including providing documents for the site visit, and answering a number of follow-up queries. Fisheries Improvement Plans were completed, with MPI input, for three oreo stocks, two squid stocks, and draft Plans initiated for jack mackerel and scampi fisheries.

MPI continued to work with DWG on actions to address the conditions on the MSC certification of the ling fisheries and the recommendations in place in other fisheries.

16 Fisheries Sustainability Controls: Develop and implement specific harvest strategies for Tier 1 species, 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.

Actions for 14/15:

- Continue to assess the relevance of the default Harvest Strategy for ORH, SBW, HAK, LIN, and SCI
- Where necessary, develop and implement alternative harvest strategies and management approaches for Tier 1 species – focussing on developing of an appropriate management approach for the squid fishery
- Incorporate outputs of management strategy evaluations into harvest strategies

Action linked to Management Objective 1.1, 1.2, 2.1

A management strategy evaluation was completed for southern blue whiting, however the harvest control rule has not yet been fully adopted.

The development of a methodology for an in-season stock assessment of squid is underway. The approach was presented at a number of working group meetings, but has not yet been finalised.

17 Harvest Strategies: Develop management approach for low information stocks

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 developing CPUE trends or an agreed index of abundance from a trawl survey.

Actions for 14/15:

- Identify most appropriate management approaches, including data collection and ongoing monitoring tools based on recently completed characterisations for Tier 2 Species.
- Work with science team to update working group reports and stock status information
- Work with DWG to minimise unwanted bycatch

Action linked to Management Objective 2.1

Characterisations for ribaldo, prawn killer, black cardinalfish and gemfish were presented at working group meetings during 2014/15. Of these, all except the characterisation for gemfish were able to be incorporated into the working group reports for the 2015 Plenary, including stock status information. The published research reports for the characterisations, where available, are listed in Table 10 (final research reports published during 2014/15). A workshop was held where the most informative aspects of each characterisation were selected. This will inform future characterisations in order to make them more streamlined and easier to use for management.

During 2014/15 DWG worked with vessel operators to reduce catch of giant spider crab. This consisted of skippers communicating with each other so that if one vessel caught a large number of crabs, it would inform other vessels in the fishery to avoid a particular tow line.

Management Actions that the Deepwater Team contributed towards delivery of but that were led by other teams within the FM Directorate and other Directorates within MPI are summarised in Table 3 below.

Table 3: Management Actions that the Deepwater Fisheries Management Team contributed to during the 2014/15 financial year

A Research 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 10 Year Research Programme Statements of Work were finalised in 2011/12 and detail research projects that will be carried out each year over the next 10 years. These projects were developed to help inform management decisions.

Business as Usual:

- Assist Fisheries Science as necessary to implement the 14/15 research projects as listed in the 2014/15 AOP
- Assist Fisheries Science as necessary to ensure that all science research used to support management of deepwater fisheries is assessed against the Research Standard
- Contract any annual "additional research" projects, consistent with process developed through MA 7

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

All science information used to support management was reviewed by Fisheries Assessment Working Groups and determined to have met the Research Standard. Information on all deepwater research contracted during the 2014/15 financial year (including additional projects), and all Final Research Reports relevant to deepwater fisheries published in the 2014/15 year are listed in Part 3 of this Report.

B Input to work within the Policy and Trade and wider Regulation and Assurance branches as required

Assist the Ministry's Policy and Trade, and Regulation and Assurance branches with review of policy developments and any necessary fisheries management information

Lead: project dependent (see below)

Actions for 14/15:

- The Ministry's Policy and Trade branch as well as other directorates with Regulation and Assurance, may from time to time need information, feedback, and review of working documents that relate to New Zealand fisheries
- Projects that FM Deepwater will likely be required to provide input to include:
 - Fisheries 2030 review (Lead: Fisheries & Aquaculture Policy)
 - MPA policy development (Lead: Fisheries & Aquaculture Policy)
 - EEZ Act – requirement to respond to statutory timeframes to inform marine consent decisions for EPA (Lead: Fisheries & Aquaculture Policy)
 - Implementing Craft Risk Management Standard (Lead: Biosecurity and Environment)
 - Developing biofoul management options for vessels under DOC regional coastal plan for Sub-Antarctic Islands (Lead: Biosecurity, Science & Risk Assessment)
 - Monitor health and safety, and employment inter-agency work programme (Lead: Environmental Protection Authority)
 - New Assurances work (Lead: International Policy)
 - SmartMark project (Lead: Strategy, Systems & Science)

Action linked to Management Objectives: various

Actions completed during the 2014/15 financial year relating to the projects listed above are listed below:

- The review of Fisheries 2030 was superseded by the announcement of the Fisheries Management System Review.
- No requests for involvement of the Deepwater FM team were received in relation to MPA policy development
- MPI contributed to the Crown's submission on the Chatham Rock Phosphate marine consent application, the hearing for which was held in October 2014. MPI also responded to two requests for advice from the Environmental Protection Authority (EPA) in relation to marine consent applications for drilling programmes (one in the Maari field and the other at the Maui field).
- The Deepwater FM team worked with the Animals and Aquatic team within the Biosecurity Science, Food Science & Risk Assessment directorate on biofoul management options.
- The Deepwater FM team was part of the Internal Advisory Group that contributed to inter-branch information sharing on the roll-out of the Craft Risk Management Standard (which becomes mandatory in 2018).
- The Deepwater FM team also attended monthly meetings of the inter-agency Health and Safety, and Employment (HSE) group.
- No requests for involvement of the Deepwater FM team were received in relation to the SmartMark project.

C Compliance risk profiling and monitoring work

The Ministry's Compliance Directorate has developed a suite of performance indicators and performance targets for the deepwater sector. When performance targets for the deepwater fishing sector are not met, or when a risk profile identifies areas of compliance concern, appropriate management action will be taken. A Level 1 risk profile was conducted on the hoki fishery in 2011/12, while southern blue whiting was profiled during 2012/13 and 2013/14. Risk profiling for 2014/15 will focus on the JMA and ORH fisheries.

Actions for 14/15:

- Work with wider Ministry and industry to implement any recommendations from previous risk profiling
- Work with Compliance to finalise risk profiles for SBW
- Resume the Deepwater Compliance Committee

Business as Usual:

- Ensure transparent and appropriate action is taken when compliance levels drop below agreed benchmarks or where compliance risks are identified.
- Continue to communicate results through Compliance Committee and to stakeholders through the ARR

Action linked to Management Objective 1.5

The investigation phase of the orange roughy risk profiling commenced towards the end of the 2014/15 financial year.

One of the outcomes of the southern blue whiting risk profile was an agreement between Compliance and the Deepwater Fisheries Management team to amend the definition of "dressed" that applied to southern blue whiting. An amended definition came into force in July 2014, prior to the start of the 2014 southern blue whiting season. The conversion factor for this state was changed at the same time, from 1.70 to 1.65 as a result of information collected during the profiling exercise.

Use of information from interim trip reports continued to be used as a compliance metric and this information, together with other metrics, is reported on in Part 3B of this report.

The Deepwater Compliance Group convened in February 2015, the first such meeting since December 2013.

An Operator's Meeting was held in December 2014, as both a briefing prior to the 2015 SQU season and a debrief after the 2014 SBW season.

D Finalise the definition of 'habitats of particular significance' for deepwater fisheries management

Section 9 of the Fisheries Act 1996 specifies that decisions relating to the utilisation of fisheries resources or ensuring sustainability are required to take into account protecting 'habitat of particular significance for fisheries management'.

Actions for 14/15:

- Finalise the Fisheries Management definition of 'habitats of particular significance'
- Work to identify potential habitats of particular significance for deepwater fisheries

Action linked to Management Objective 2.3

A working definition of 'habitat of particular significance for fisheries management' has been drafted. However, it has not yet been signed off, and work is ongoing to finalise the definition and subsequently identify potential relevant habitats.

Management Actions that the Deepwater Team contributed towards delivery of but that were initiated by industry are summarised in Table 4 below.

Table 4: Summary of progress on industry-initiated Management Actions during the 2014/15 financial year

When required, work with industry to :

Possible Actions for 14/15:

- Respond to any industry requests for changes to stock boundaries
- Observer requests for vessel specific conversion factor trips
- Development of the deepwater crab fishery
- Development of the Patagonian toothfish fishery

No stock boundary changes were requested by industry in 2014/15.

All requests for observers on vessel specific conversion factor trips were met (four trips were undertaken during 2014/15).

The new purpose special permit for deepwater crab fishing around the North Island, issued in August 2013, continued during 2014/15. It includes a research programme and will result in increased information on king crabs and the potential to support a commercial fishery. 11.6 tonnes of KIC2 was landed by the special permit holder during the 2014/15 financial year, 2.2 tonnes of which was landed in excess of ACE for this stock.

There was no progress on development of the Patagonian toothfish fishery during 2014/15.

Summary of progress against Management Actions in 2014/15

All 'business as usual' Management Actions (1-3, 7-14, and 16-17) were progressed appropriately throughout the 2014/15 year. All of these Actions remain open as they represent ongoing requirements of deepwater fisheries management that are delivered each year.

The remaining Management Actions (4-6, 15) relate to broader work programmes that will be delivered over several years, namely:

- New Zealand sea lion Threat Management Plan,
- Implementation of the NPOA Sharks,
- Implementation of the NPOA Seabirds,
- In market initiatives for New Zealand's deepwater fisheries.

The specific management actions listed have, for the most part, been achieved during 2014/15. New actions that relate to each of these projects will be included in subsequent AOPs.

The Management Action relating to the definition of habitat of particular significance for deepwater fisheries management will be taken out of future Annual Operational Plan as it does not need to be retained as a separate management action.

Part 3B: Deepwater Fisheries Research, Compliance, Observer Coverage and Cost Recovery Levies

This section of the Annual Review Report provides detail on MPI fisheries and conservation services that are relevant to deepwater fisheries management and are planned by financial year (1 July – 30 June).

These processes include the planning and contracting of fisheries and conservation research projects, planning observer coverage on the deepwater fleet and the cost recovery regime.

B.1 Observer Coverage

Biological sampling and environmental monitoring is informed by the requirements of the National Deepwater Plan and carried out by the Ministry's Observer Programme. Data collected by the Observer Programme is used by MPI:

- As an input to monitor key fisheries against harvest strategies
- As an input to monitor biomass trends for bycatch species
- To assess fishery performance with regards to environmental interactions
- To enable real-time responses to sustainability and environmental impact issues

Observer coverage is planned by both the Ministry and the Department of Conservation (DOC), based on management objectives of both agencies. DOC requires observer coverage to collect information regarding fisheries interactions with protected species.

2014/15 Coverage Performance

Overall in 2014/15, slightly more observer days were achieved than were planned. The level of coverage in relation to the coverage target for each fishery area is shown in Table 5. A number of reasons may account for instances where coverage targets for individual fisheries were not met, including:

1. Vessel's actual fishing behaviour does not always match the notified intentions,
2. Vessel operators occasionally do not agree to observer coverage in the five days before the vessel sails making the observer programme unable to issue a placement notice in time, and
3. Requested observer presence on certain vessels may affect the availability of observers in other areas.

2014/15 was the third year in which a Cabinet directive has been in place requiring all foreign charter vessels (FCVs) to have at least one observer on every trip. The observer programme has increased capacity to meet this requirement, but coverage has remained somewhat skewed towards fisheries with a large FCV component. Some fisheries that are dominated by domestic vessels have struggled to achieve coverage targets as a result. Coverage by target species is detailed on the fishery summaries in Appendix I.

Planned observer coverage for 2015/16 is based on samples required to support the ongoing management of the deepwater fisheries. This involves specification of samples required, and targeting both observer deployment and sampling protocols appropriately. Tables 6 and 7 provide some information on the numbers of length frequency and otolith samples collected for deepwater species in 2013/14 and 2014/15 fishing years.

Table 5: Comparison of planned and achieved observer coverage for 2014/15 financial year

Fishery	Fisheries covered	Total days planned	Total days achieved	MPI/DOC cost recovery %
Deepwater trawl fisheries:				
ORH 1		55	82	90/10
ORH MEC and East Coast North Island	ORH2A, ORH2B, ORH3A BYX2, CDL2	175	65	90/10
Chatham Rise Deepwater	ORH3B OEO3A, OEO4 BYX3	250	221	90/10
Sub-Antarctic Deepwater	ORH3B OEO1, OEO6	30	56	90/10
ORH 7A	ORH7A	40	12	90/10
Hoki & Middle Depth trawl fisheries:				
WCSI -Inside the line (FMA7)	HOK1	70	57	85/15
Cook Strait	HOK1	120	76	85/15
Domestic middle depth trawl	HOK1 HAK1, HAK4, HAK7 LIN3-7	210	227	85/15
Sub-Antarctic middle depth trawl	SBW6B, SBW6I, SBW6R SQU6T, SQU1T	250	291	80/20
Foreign Charter Vessels (FCVs)*				
All areas	HOK1 (42%) HAK All (2%) BAR All (10%) LIN3-7 (4%) SBW All (13%) SWA All (3%) WWA All (1%) SQU1T, SQU6T (13%) JMA3-7 (13%)	5,760	5,564	85/15
Deepwater bottom longline fisheries:				
Bottom longline	LIN3, LIN4	150	122	85/15
Shellfish:				
Scampi	SCI (all)	150	103	80/20
Total days:		6,683	6,876	
Direct charged coverage:				
Vessel specific conversion factor testing			258	
FCV risk days			498	
Total planned plus direct charged coverage			7,632	

Table 6: Numbers of length frequency samples and otoliths collected by observers during the 2013/14 and 2014/15² fishing years for Tier 1 deepwater species by area

Species	Area	No. of length frequency samples ³		No. of fish measured		Pairs of otoliths collected	
		2013/14	2014/15	2013/14	2014/15	2013/14	2014/15
Hoki	Sub-Antarctic	570	370	30,641	20,841	4,003	2,553
	Chatham Rise	669	355	64,102	30,809	6,094	3,279
	WCSI	899	1,089	88,359	96,228	8,112	7,442
	Cook Strait	92	117	90,051	8,726	769	865
	East coast NI	12	19	433	464	25	90
Orange roughy	ORH 1	A= 2 B= 3 C= - D= 2 Total = 7	A= 11 B= 43 C= 2 D= 3 Total = 59	A= 96 B= 259 C= - D= 39 Total = 394	A= 321 B= 2,531 C= 120 D= 146 Total = 3,118	A= 30 B= 50 C= - D= 14 Total = 94	A= - B= 595 C= 40 D= 50 Total = 685
	ORH 7A + WB	2	17	170	1,236	40	264
	ORH 3B - NW Chatham Rise	3	14	95	636	21	120
	ORH3B – east and south Chatham Rise	21	59	1,415	3,725	347	640
	ORH – MEC	-	12	-	875	-	190
	ORH2A north	-	11	-	806	-	20
	ORH3B – Sub- Antarctic	1	1	83	100	-	10
Southern blue whiting	SBW 6I	440	256	74,245	36,406	7,462	3,771
	SBW 6B	138	25	25,371	3,892	2,233	404
	SBW6R	7	5	666	180	91	31
	SBW6A	-	4	-	67	-	15
Hake	HAK 1	179	101	6,141	4,075	745	455
	HAK 4	23	54	245	999	26	257
	HAK 7	368	569	15,422	22,563	1,921	2,689

² It is possible that at the time the data for this table was extracted (late 2015) not all information for the 2014/15 fishing year was available.

³ This refers to the number of fishing events (stations) where fish were measured. Measurements were taken as part of either a length frequency sample (typically consisting of 100-150 fish) or a middle depth biological data (MDBD) sample (20 fish or less).

Species	Area		No. of length frequency samples ³		No. of fish measured		Pairs of otoliths collected	
			2013/14	2014/15	2013/14	2014/15	2013/14	2014/15
Ling	LIN 3 & 4	Line	143	45	1,475	450	651	225
		Trawl	197	120	3,671	2,545	853	673
	LIN 5 & 6	Line	59	-	940	-	300	-
		Trawl	277	272	7,351	7,890	1,224	1,337
	LIN 7		104	482	1,417	8,059	384	2,683
	LIN Cook Strait		2	22	14	263	5	85
Oreos	black	BOE 3A	33	27	1,553	1,449	173	202
		BOE 4	30	16	1,191	609	172	63
		BOE 1	1	4	20	390	-	4
		BOE 6	-	1	-	20	-	-
	smooth	SSO 3A	24	29	1,677	2,399	167	215
		SSO 4	50	51	4,099	4,269	518	456
		SSO 6	1	-	100	-	10	-
		SSO1	2	1	140	10	10	3
	spiky	SOR 1	-	2	-	40	-	10
		SOR3A	2	-	40	-	-	-
SOR 4		4	3	76	66	10	16	
Jack mackerel	<i>declivis</i>	JMD 3	137	46	3,810	1,516	716	254
		JMD 7	644	610	49,823	44,517	4,177	2,803
	<i>murphyi</i>	JMM 3	162	88	7,859	4,355	762	429
		JMM 7	287	341	2,267	3,051	916	1,111
	<i>novaezelandiae</i>	JMN 3	4	1	6	43	4	5
		JMN 7	427	455	31,252	36,774	2,095	1,692
Squid (all species combined)	SQU 1T	631	632	62,550	60,932	n/a	n/a	
	SQU 6T	387	287	39,973	27,424			
Scampi	SCI 1	39	-	2,858		n/a	n/a	
	SCI 2	1	-	130				
	SCI 3	34	39	4,369	4,617			
	SCI 4A	-	34	-	5,114			
	SCI 7	-	-	-	-			

Table 7: Numbers of length frequency samples and otoliths collected by observers during the 2013/14 and 2014/15⁴ fishing years for Tier 2 deepwater species and selected inshore species⁵ by area

Species	Area	No. of length frequency samples ⁶		No. of fish measured		Pairs of otoliths collected		
		2013/14	2014/15	2013/14	2014/15	2013/14	2014/15	
Barracouta	BAR1	247	133	16,342	7,985	1,397	884	
	BAR4	51	104	3,542	8,453	301	573	
	BAR5	334	279	13,621	10,817	1,644	1,329	
	BAR7	280	435	8,499	18,430	1,463	2,072	
Alfonsino	<i>decadactylus</i>	BYD1	-	3	-	45	-	8
		BYD3	-	2	-	3	-	-
		BYD7	1	-	20	-	10	-
	<i>splendens</i>	BYS1	-	18	-	680	-	37
		BYS2	-	18	-	833	-	111
		BYS3	1	17	40	963	10	210
		BYS7	91	37	1,830	409	444	110
unspecified	BYX7	-	1	-	15	-	10	
Cardinalfish	CDL1	-	2	-	20	-	-	
	CDL2	-	5	-	360	-	35	
	CDL3	1	2	1	45	1	10	
	CDL4	-	1	-	10	-	5	
	CDL9	-	5	-	42	-	16	
Blue mackerel	EMA3	10	288	23	535	67	109	
	EMA7	204	5,833	245	6,788	1,199	1,320	
Frostfish	FRO3-4	4	73	13	366	20	56	
	FRO5	1	20	2	40	5	9	
	FRO7-9	179	3,642	300	8,420	838	1,363	
Ghost shark, dark	GSH4	32	38	800	746	n/a	n/a n/a	
	GSH5	9	3	171	75			
	GSH6	16	8	553	86			
Ghost shark, pale	GSP1	47	34	1,027	640	n/a		
	GSP5	54	11	934	205			
	GSP7	16	10	209	160			

⁴ As per previous page

⁵ This refers to species managed under an inshore fisheries plan that are primarily taken by the deepwater fleet

⁶ As per previous page

Species	Area	No. of length frequency samples ⁶		No. of fish measured		Pairs of otoliths collected		
		2013/14	2014/15	2013/14	2014/15	2013/14	2014/15	
Giant spider crab	GSC3	8	11	369	401	n/a	n/a	
	GSC5	99	100	3,624	4,364			
	GSC6A	179	95	4,185	3,401			
	GSC6B	-	1	-	50			
Jack mackerel	Unspecified	JMA3/JMA7	11	19	292	2,073	45	31
Kingfish		KIN7/8	180	213	1,002	1,598	466	420
Lookdown dory		LDO1	8	5	110	100	-	25
		LDO3	45	14	879	225	5	10
Redbait		RBT3	60	52	3,647	1,607	369	271
		RBT7	41	45	744	778	179	206
Rubyfish		All areas	8	10	170	238	10	23
Ribaldo		RIB3/4	19	23	251	441	85	112
		RIB5/6	15	-	203	-	60	-
		RIB7	32	55	733	1,060	138	295
Gemfish		SKI3	3	3	12	60	12	15
		SKI7	18	18	299	278	89	78
Sea perch		SPE3	11	12	203	207	29	55
		SPE4	13	13	301	250	47	65
		SPE5	2	1	40	20	10	5
		SPE7	10	20	181	379	43	94
Silver warehou		SWA1	117	100	2,095	1,709	508	437
		SWA3	189	169	8,876	6,806	945	931
		SWA4	287	268	11,088	10,714	1,396	1,394
Spiny dogfish		SPD4	3	206	1	20	n/a	n/a
		SPD5	56	1,589	25	729		
Common warehou		WAR3	70	109	3,392	5,918	352	593
		WAR7	4	7	55	202	20	42
White warehou		WWA3/4	32	3	1,034	60	151	9
		WWA5B	98	30	5,526	692	501	81
		WWA7	7	4	75	76	28	20

B.2 Deepwater Fisheries Research

Research needs for deepwater fisheries are driven from the Objectives within the National Deepwater Plan and delivered primarily through the 10 Year Research Programme for Deepwater Fisheries (10YP). This research programme focuses on obtaining comprehensive, consistent and robust information in a cost-effective manner. To accomplish this, the 10YP specifies the routine research and data collection necessary to meet Management Objectives. The 10YP recognises that not all research required can be planned in advance and also allows for annual planning/prioritisation and delivery of one-off research projects.

Research projects contracted for the 2014/15 financial year, which are detailed in Table 8, included stock assessments, and trawl and acoustic surveys. All research projects contracted through the 10YP are reviewed by the Ministry's Science Working Groups and assessed against the Ministry's Research and Science Information Standard for New Zealand Fisheries. This review process aims to ensure the quality of the research is sufficient to underpin deepwater fisheries management. Delivery of quality research is driven through Management Objective 1.4 within the Deepwater Plan which aims to ensure the availability of appropriate, accurate and robust information to underpin the management of New Zealand's deepwater fisheries.

Table 8: Research contracted for the 2014/15 financial year⁷ in the 10 Year Research Programme

Project code	Title
Trawl surveys	
MDT2010/02	Estimation of hoki and middle depth fish abundance on the Southern Plateau using trawl surveys
Acoustic surveys	
SBW2010/02	Biomass estimation of southern blue whiting using acoustic surveys (Bounty Platform)
OEO2010/04	Estimation of the abundance of black oreo in OEO 3A using acoustic surveys
ORH2010/01	Estimation of the abundance of orange roughly using acoustic methods (ORH3B spawning plumes)
Ageing projects	
MID2010/01	Routine age determination of hoki and middle depth species from commercial fisheries and trawl surveys
Stock Assessment	
DEE2010/02	Stock assessment of deepwater and middle depth fish stocks (HOK1, HAK1, LIN3/4, LIN5/6, SSO1, SCI3, SBW6R, SBW6B)
Stock characterisations	
DEE2010/07	Characterisations of deepwater and middle depth fisheries (BYX, EMA, WWA)
Scampi camera surveys	
SCI2010/02	Estimating the abundance of scampi in SCI1 and SCI 2 using photographic/trawl surveys
Aquatic environment	
DAE2010/01	Taxonomic identification of benthic samples
DAE2010/02	Bycatch monitoring and quantification of deepwater stocks (JMA)
DAE2010/04*	Monitoring the trawl footprint for deepwater fisheries
PRO2010/01	Estimating the nature and extent of incidental captures of seabirds, marine mammals and turtles in New Zealand commercial fisheries

⁷ Progress on projects is not available, reports should be made publically available at the conclusion of each project.

Table 9: Additional Research that was contracted or ongoing during the 2014/15 financial year

Project code	Title
DEE2014-01	Catchability in the Sub-Antarctic trawl surveys
DEE2014-02	Catch sampling of hoki in the Cook Strait fishery
DEE2014-03	Stock assessment of arrow squid (SQUIT and 6T)
DEE2014-08	Survey design for Challenger (ORH7A) trawl and acoustic survey

Research reports

Final research reports from previously contracted work that were published in the 2014/15 year that relate to deepwater fisheries are shown in Table 10 below. Links to these documents are provided where possible, but all published reports can be found on the MPI NZ Fisheries InfoSite (<http://fs.fish.govt.nz/Page.aspx?pk=91>) and the MPI website (www.mpi.govt.nz/news-and-resources/publications/)

Table 10: Final research reports published during the 2014/15 financial year of relevance to deepwater fisheries

Doc #	Title
Annual Documents	
2014 Nov. Plenary	Ministry for Primary Industries (2014): Fisheries Assessment Plenary, November 2014 – 30 th Anniversary Stock Assessments and Stock Status. 618p. Compiled by the Fisheries Management Science Group, Ministry for Primary Industries, Wellington, New Zealand. Two volumes: http://www.mpi.govt.nz/document-vault/4783 and http://www.mpi.govt.nz/document-vault/4786
2015 May Plenary	Ministry for Primary Industries (2015). Fisheries Assessment Plenary, May 2015: stock assessments and stock status. Compiled by the Fisheries Management Science Group, Ministry for Primary Industries, Wellington, New Zealand. 1477p. Three volumes: http://www.mpi.govt.nz/document-vault/8307 , http://www.mpi.govt.nz/document-vault/8310 and http://www.mpi.govt.nz/document-vault/8304 .
2014 AEBAR	Ministry for Primary Industries (2014). Aquatic Environment and Biodiversity Annual Review 2014. Compiled by the Fisheries Management Science Team, Ministry for Primary Industries, Wellington, New Zealand. 558 p. http://www.mpi.govt.nz/document-vault/5008
Aquatic Environment and Biodiversity Reports (AEBRs)	
130	Morrison, M.A.; Jones, E.; Consalvey, M.; Berkenbusch, K. (2014). Linking marine fisheries species to biogenic habitats in New Zealand: a review and synthesis of knowledge. New Zealand Aquatic Environment and Biodiversity Report No. 130. 156 p. http://www.mpi.govt.nz/document-vault/4373
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138	Anderson, O.F. (2014). Fish and invertebrate bycatch and discards in New Zealand ling longline fisheries from 1992–93 until 2011–12. New Zealand Aquatic Environment and Biodiversity Report No. 138. http://www.mpi.govt.nz/document-vault/4720
139	Anderson, O.F. (2014). Fish and invertebrate bycatch in New Zealand deepwater fisheries from 1990–91 until 2011–12. New Zealand Aquatic Environment and Biodiversity Report No. 139. http://www.mpi.govt.nz/document-vault/4721
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2014/23	Hampton, I.; Nelson, J.C. (2014). Acoustic estimates of the biomass in aggregations of southern blue whiting (<i>Micromesistius australis</i>) on Pukaki Rise (SBW6R) and Campbell Island Plateau (SBW6I) from a

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2014/24	Doonan, I.J.; Horn, P.L.; Ó Maolagáin, C. (2014). Orange roughy age estimates: Chatham Rise (ORH 3B) spawning plumes in 2012, and mid-east coast North Island (ORH 2A) fishery from 1989–91 and 2010. New Zealand Fisheries Assessment Report 2014/24. 19 p. http://www.mpi.govt.nz/document-vault/4369
2014/25	Bentley, N.; Kendrick, T.H.; MacGibbon, D.J. (2014). Fishery characterisation and catch-per-unit-effort analyses for frostfish (<i>Lepidopus caudatus</i>), 1989–90 to 2009–10. New Zealand Fisheries Assessment Report 2014/25. 131 p. http://www.mpi.govt.nz/document-vault/4387
2014/27	Bentley, N.; Kendrick, T.H.; MacGibbon, D.J. (2014). Fishery characterisation and catch-per-unit-effort analyses for sea perch (<i>Helicolenus</i> spp.) in New Zealand, 1989–90 to 2009–10. New Zealand Fisheries Assessment Report 2014/27. 41 p. http://www.mpi.govt.nz/document-vault/4372
2014/32	Cordue, P.L. (2014). A 2013 stock assessment of Mid-East Coast orange roughy. New Zealand Fisheries Assessment Report 2014/32. 54 p. http://www.mpi.govt.nz/document-vault/4380
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2014/39	Horn, P.L.; Sutton, C.P. (2014). Catch-at-age for hake (<i>Merluccius australis</i>) and ling (<i>Genypterus blacodes</i>) in the 2012–13 fishing year and from trawl surveys in 2013–14, with a summary of all available data sets from the New Zealand EEZ. New Zealand Fisheries Assessment Report 2014/39. 64 p. http://www.mpi.govt.nz/document-vault/4392
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2014/50	Cordue, P.L. (2014). The 2014 orange roughy stock assessments. New Zealand Fisheries Assessment Report 2014/50. http://www.mpi.govt.nz/document-vault/4399
2014/57	Horn, P.L.; Hulston, D.; Ó Maolagáin, C. (2014). Commercial catch sampling for species proportion, sex, length, and age of jack mackerels in JMA 3 in the 2012–13 fishing year. New Zealand Fisheries Assessment Report 2014/57. 16 p. http://fs.fish.govt.nz/Page.aspx?pk=113&dk=23695
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2014/59	Doonan, I.J.; Horn, P.L.; Ó Maolagáin, C. (2014). Age composition of orange roughy from ORH 3B (Chatham Rise: northwest, 1994, and northeast, 2013), and from ORH 7A (Challenger Plateau in 1987, 2006 and 2009). New Zealand Fisheries Assessment Report 2014/59. http://www.mpi.govt.nz/document-vault/4416
2014/62	Ballara, S.L. (2014). Fishery characterisation and standardised CPUE analyses for lookdown dory, <i>Cyttus traversi</i> (Hutton, 1872) (Zeidae), 1989–90 to 2011–12. New Zealand Fisheries Assessment Report 2014/62. http://www.mpi.govt.nz/document-vault/4636
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2015/01	O'Driscoll, R.L.; Oeffner, J.; Dunford, A.J. (2015). Acoustic biomass estimates of southern blue whiting on the Bounty Platform in 2013. <i>New Zealand Fisheries Assessment Report 2015/1</i> . 28p. http://www.mpi.govt.nz/document-vault/5152
2015/02	O'Driscoll, R.L. (2015). Acoustic biomass estimates of southern blue whiting on the Bounty Platform in 2014. <i>New Zealand Fisheries Assessment Report 2015/2</i> . 28 p. http://www.mpi.govt.nz/document-vault/5155

2015/03	Horn, P.L. (2015). Spatial and temporal changes in ling (<i>Genypterus blacodes</i>) population structure on the Chatham Rise and off West Coast South Island. <i>New Zealand Fisheries Assessment Report 2015/3</i> . 23 p. http://www.mpi.govt.nz/document-vault/5158
2015/04	O'Driscoll, R.L.; Ladroit, Y.; Dunford, A.J.; MacGibbon, D.J. (2015). Acoustic survey of spawning hoki in Cook Strait and Pegasus Canyon during winter 2013. <i>New Zealand Fisheries Assessment Report 2015/4</i> . 51 p. http://www.mpi.govt.nz/document-vault/5338
2015/05	MacGibbon, D.J. (2015). Fishery characterisation for prawn killer, <i>Ibacus alticrenatus</i> (Spence Bate, 1888) (Scyllaridae), 1989–90 to 2012–13. <i>New Zealand Fisheries Assessment Report 2015/5</i> . 108 p. http://www.mpi.govt.nz/document-vault/5419
2015/06	Roux, M.-J. (2015). Review of the longline fishery for ling (<i>Genypterus blacodes</i>) in LIN 2, and an update of the CPUE index. <i>New Zealand Fisheries Assessment Report 2015/06</i> . 25 p. http://www.mpi.govt.nz/document-vault/5761
2015/07	Fu, D.; Doonan, I.J. (2015). Assessment of OEO 4 smooth oreo for 2012–13. <i>New Zealand Fisheries Assessment Report 2015/07</i> . 41 p. http://www.mpi.govt.nz/document-vault/6028
2015/08	McKenzie, A. (2015). Assessment of hoki (<i>Macruronus novaezelandiae</i>) in 2013. <i>New Zealand Fisheries Assessment Report 2015/08</i> . 73 p. http://www.mpi.govt.nz/document-vault/6031
2015/09	McKenzie, A. (2015). Assessment of hoki (<i>Macruronus novaezelandiae</i>) in 2014. <i>New Zealand Fisheries Assessment Report 2015/09</i> . 68 p. http://www.mpi.govt.nz/document-vault/6040
2015/10	Tuck, I.D.; Parkinson, D.; Armiger, H.; Smith, M.; Miller, A.; Rush, N.; Spong, K. (2015). Estimating the abundance of scampi in SCI 6A (Auckland Islands) in 2013. <i>New Zealand Fisheries Assessment Report 2015/10</i> . 48 p. http://www.mpi.govt.nz/document-vault/6295
2015/11	Ballara, S.L.; Horn, P.L. (2015). A descriptive analysis of all ling (<i>Genypterus blacodes</i>) fisheries, and CPUE for ling longline fisheries for LIN 3&4 and LIN 5&6, from 1990 to 2013. <i>New Zealand Fisheries Assessment Report 2015/11</i> . 55 p. http://www.mpi.govt.nz/document-vault/6259
2015/12	Ballara, S.L. (2015). Descriptive analysis of the fishery for hake (<i>Merluccius australis</i>) in HAK 1, 4 and 7 from 1989–90 to 2012–13, and a catch-per-unit-effort (CPUE) analysis for Sub-Antarctic hake. <i>New Zealand Fisheries Assessment Report 2015/12</i> . 60 p. http://www.mpi.govt.nz/document-vault/6262
2015/16	Francis, M.P. (2015). Size, maturity and age composition of porbeagle sharks observed in New Zealand tuna longline fisheries. <i>New Zealand Fisheries Assessment Report 2015/16</i> . 30 p. http://www.mpi.govt.nz/document-vault/6889
2015/19	Stevens, D.W.; O'Driscoll, R.L.; Ladroit, Y.; Ballara, S.L.; MacGibbon, D.J.; Horn, P.L. (2015). Trawl survey of hoki and middle depth species on the Chatham Rise, January 2014 (TAN1401). <i>New Zealand Fisheries Assessment Report 2015/19</i> . 119 p. http://www.mpi.govt.nz/document-vault/7011
2015/20	O'Driscoll, R.L.; Bagley, N.W.; Ballara, S.L.; Ladroit, Y. (2015). Trawl and acoustic survey of hoki and middle depth fish abundance on the west coast South Island, July–August 2013 (TAN1308). <i>New Zealand Fisheries Assessment Report 2015/20</i> . 104 p. http://www.mpi.govt.nz/document-vault/7003
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2015/29	Horn, P.L. (2015). Stock assessment of hake (<i>Merluccius australis</i>) in the Sub-Antarctic (part of HAK1) for the 2014-15 fishing year. <i>New Zealand Fisheries Assessment Report 2015/29</i> . 55p. http://www.mpi.govt.nz/document-vault/7293
2015/31	MacGibbon, D.J. (2015). Fishery characterisation and standardised CPUE analyses for ribaldo, <i>Mora moro</i> , (Risso, 1810) (Moridae), 1989-90 to 2012-13. <i>New Zealand Fisheries Assessment Report 2015/31</i> . 314p. http://fs.fish.govt.nz/Page.aspx?pk=113&dk=23956
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2015/01	Walker, N.; Smith, N.; Sharp, B.; Cryer, M. (2015). A qualitative review of New Zealand's 2013 level two risk assessment for seabirds. <i>New Zealand Fisheries Science Review 2015/1</i> , 53p. http://fs.fish.govt.nz/Doc/23943/FSR_2015_01_2013_Seabird_Review.pdf.ashx

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POP2013-05	Clark, M.; Tracey, D.; Anderson, O.; Parker, S. (2014). Pilot ecological risk assessment for protected corals. Report prepared for the Department of Conservation. 32p. http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/pilot-ecological-risk-assessment-for-protected-corals-final-report.pdf
POP2012-06	Baker, B.; Jensz, K.; Sagar, P. (2014). Salvin's albatross aerial population estimate 2013. Report prepared for the Department of Conservation. 10p. http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/pop2012-06-salvins-aerial-population-estimate.pdf
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POP2011-02	Waugh, S.; Jamieson, S.; Stahl, J.-C.; Filippi, D.; Taylor, G.; Booth, A. (2014). Flesh-footed shearwater – population study and foraging areas. Report prepared for the Department of Conservation. 68p. http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/meetings/pop-2011-02-flesh-footed-shearwater-final-report.pdf
INT2013-04	Pierre, J.P.; Thompson, F.N.; Mansfield, R. (2015). Optimisation of protocols employed by New Zealand government fisheries observers for protected species data collection. Report prepared for the Department of Conservation. 79p. http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/optimisation-of-protocols-employed-by-new-zealand-government-fisheries-observers-for-protected-species-data-collection-2015.pdf
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POP2014-01	Childerhouse, S.; Michael, S.; Adams, L.; Burns, T.; Cockburn, S.; Hamer, D.; Maloney, A.; Pugsley, C. (2015). Final Report: New Zealand sea lion research at the Auckland Islands 2014/15. 50p. http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/new-zealand-sea-lion-research-at-the-auckland-islands-2014-15-final-report.pdf
POP2012-02	Roberts, J.; Fu, D.; Doonan, I.; Francis, C. (2014). New Zealand sea lion: demographic assessment of the causes of decline at the Auckland Islands. Part 1 demographic assessment, Part 2 correlative assessment. http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/NZ-sea-lion-demographic-assessment-causes-decline-auckland-islands-part-1.pdf http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/NZ-sea-lion-demographic-assessment-causes-decline-auckland-islands-part-2.pdf
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POP2013-03	Walker, K.; Elliot, G. (2015). Gibson's wandering albatross population study 2014-15. Report prepared for the Department of Conservation. 16p. http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/gibsons-wandering-albatross-population-study-2014-15-final-study.pdf

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MIT2014-01	Protected species bycatch newsletter – Annual Progress Report http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/protected-species-bycatch-newsletter-annual-progress-report-june-2015.pdf
MIT2012-05	Protected species bycatch newsletter. http://www.doc.govt.nz/Documents/conservation/marine-and-coastal/marine-conservation-services/reports/mit2012-05-final-report-protected-species-bycatch-newsletter.pdf

B.3 Compliance

Successfully delivering on Management Objectives for deepwater fisheries is dependent upon high levels of compliance with the various sustainability and environmental regulations defined in legislation. The Ministry's Compliance Directorate is responsible for providing the intervention services to achieve cost-effective compliance with all regulations.⁸

Adherence to all non-regulatory measures is reported in the relevant section of the next part of this report.

In mid-2015 the systems used by the Compliance Directorate to record and report details of vessel inspections changed. The new system currently has limited ability to extract relevant information regarding details of inspections or breaches. This means it is not possible to replicate the summaries presented in earlier Annual Review Reports.

Towards the end of the 2013 calendar year, MPI introduced 'interim observer trip reports'. These reports are sent to vessel operators within a few days of the completion of an observed trip. Fifteen questions are answered by the observer to provide more immediate feedback to vessel operators on a variety of factors. Questions are answered with a rating of A, B, C or N/A. It is considered that ratings of A and B are acceptable performance. The interim trip report template is shown in Appendix V. Overall, 160 interim trip reports relating to observed trips on deepwater vessels were completed in the 2014/15 year. The majority of factors were rated A (81%) or B (7%), however over the year, six C ratings were given by observers (less than 1%).

⁸ Function is now under the Compliance Directorate in the Operations Branch of MPI.

Table 11: Summary of 2014/15 interim trip reports where a 'C' rating was given

Factor	Number of 'C' ratings
Accurate identification of QMS species	2
Monitoring block weights	2
Process for discarding QMS species	1
Factory hygiene	1

B.4 Cost Recovery Levies

Research, compliance activities, observers, and registry services are funded, at least partially, by levies recovered from the fishing industry.

The cost recovery regime, which is legislated under Part 14 of the Fisheries Act 1996, enables the Crown to recover its costs in respect of the provision of fisheries and conservation services, as far as practicable, from those people who have requested services, who benefit from the provision of those services or cause the adverse effects that the services are designed to avoid, remedy or mitigate.

MPI uses the Fisheries (Cost Recovery) Rules 2001 to calculate the levies to be applied to each fish stock, based on the total amount to be cost recovered from the commercial fishing industry and the under or over-recovery of levies in the previous year.

The proposed levies are consulted on with industry as per statutory requirements.

Table 12 shows the total levied for the 2014/15 financial year from stocks managed under the National Deepwater Plan as well as the total levied across all New Zealand fisheries.

Table 12: Cost recovery levies for deepwater stocks and all New Zealand fisheries for the 2014/15 financial year

		Total levied (\$) for stocks managed in National Deepwater Plan	Total levied (\$) for all New Zealand fisheries
Compliance		5,009,398	10,330,275
Registry		1,829,969	3,773,743
Observers	MPI	2,719,140	4,054,619
	DOC	552,814	1,151,743
Research	MPI	6,592,849	10,934,010
	DOC	392,923	1,797,462
Unders & Overs	MPI	-856,282	-1,460,139
	DOC	-119,893	-316,145
Total		16,120,920	29,113,825

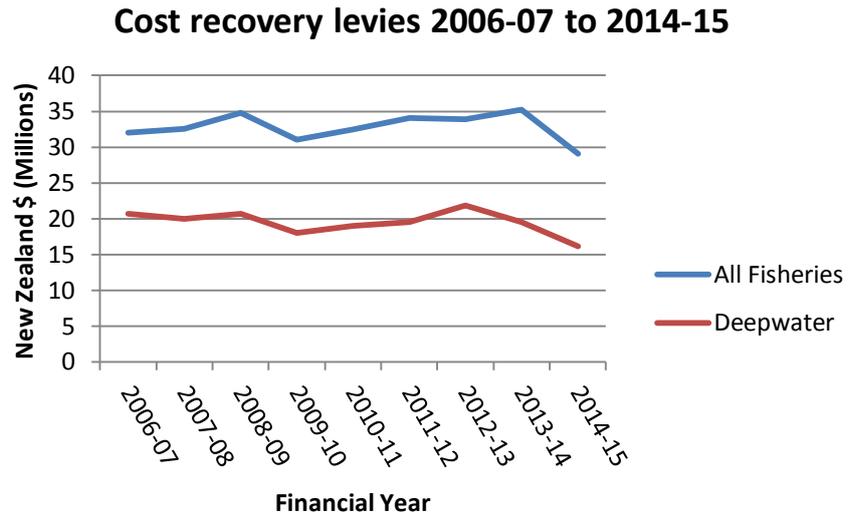


Figure 3: Total amount recovered by cost recovery levies between 2006/07 and 2014/15. Separate totals are shown for deepwater species and all species combined.

Part 3C: General environmental reporting and adherence to non-regulatory management measures

This part of the ARR summarises the overall impacts of deepwater fishing on the marine environment, and reports adherence to non-regulatory environmental mitigation measures for the 2014/15 fishing year. Species-specific environmental interactions are reported in Appendix I.

C.1 Environmental reporting

New Zealand's deepwater fisheries are known to interact with the marine environment including protected species, the benthic habitat, and other bycatch species. In order to achieve Management Objective 2.5, DWG and the Ministry work together to monitor adherence to non-regulatory management measures and environmental interactions.

Non-regulatory measures include vessel-specific management plans for mitigating incidental seabird captures (VMPs), Marine Mammal Operational Procedures (MMOP), and notification requirements for certain numbers of seabird or mammal captures (trigger points).

Vessel operators are required by law to report all captures of protected species to the Ministry on Non-fish/Protected Species Catch Returns. For reasons of increased reliability however, analyses of protected species interactions and adherence to non-regulatory measures is based on information collected on fishing trips carrying a Ministry observer.

Observers from each observed fishing trip are debriefed by MPI to determine the vessel's adherence to all non-regulatory measures. Feedback on performance for every trip is provided to DWG. In any instance where issues were reported by observers, further follow up action is taken by DWG (discussed below). Regardless of whether follow up action is required or not, DWG provides feedback to operators after every observed trip.

The table below summarises the number of observed trips on trawl vessels >28m (and scampi trawlers <28m) completed during the 2012/13 to 2014/15 fishing years and the results of the audit of vessel adherence.

Table 13: Summary of MPI Observer audits of adherence to non-regulatory measures

Fishing year	Observed trawl trips	Reviews sent to and reviewed by DWG	Trips with no issues raised	Trips requiring follow up
2012/13	191	152	120	32
2013/14	183	162	128	34
2014/15	162	160	132	28

C.2 Seabirds

Total seabird captures in deepwater fisheries are estimated using statistical models that are informed by data on observed captures, fishing effort location data and seabird species distribution data. Estimated captures provide an estimate of the total number of captures that would be observed if all effort was observed. They do not take into account any seabird mortalities that may take place due to interactions with fishing gear but are not observed (cryptic mortalities). Cryptic mortalities are considered in the level 2 seabird risk assessment which informs the management of seabird risk in New Zealand.

Information regarding observed captures of seabirds is available throughout each fishing year, whereas modelled total capture estimates take some time to process. Information presented here represents the best available information at time of publication.

Table 14 reports all observed seabird captures by species from tows targeting Tier 1 deepwater species for the 2013/14 and 2014/15 fishing years.⁹

Table 14: Observed seabird captures for the 2013/14 and 2014/15 fishing years from the core deepwater fleet and any vessels targeting Tier 1 species ('Other' includes decomposed or unknown life status)

Seabird species	2013/14				2014/15			
	Alive	Dead	Other	Total	Alive	Dead	Other	Total
Albatrosses (Unidentified)	2	12	1	15	6	1	1	8
Black (Parkinson's) petrel	3			3	1	2		3
Black-bellied storm petrel				0	1			1
Black-browed albatross (Unidentified)	1			1	1			1
Buller's albatross	8	23	1	32	5	19		24
Buller's and Pacific albatross	1	6		7	3			3
Cape petrels	3			3	3	1		4
Chatham Island albatross	1	2		3		1		1
Common diving petrel	2	1		3	8	1		9
Fairy prion	3	1		4	5			5
Flesh-footed shearwater	11	2		13	1			1
Giant petrels (Unidentified)	2			2	6			6
Great albatrosses	1	1		1		1		1
Grey petrel	4	5		9	12	4		16
Grey-headed albatrosses	1			1				0
Light-mantled sooty albatross				0	2	1		3
Mid-sized Petrels & Shearwaters	1		1	2	6			6
Northern giant petrel	2			2				0
Petrel (Unidentified)	39	7		46	45	6		51
Petrels, Prions and Shearwaters	4	1		5	1			1
Prions (Unidentified)	11	1		12	5			5
Procellaria petrels	9	6		15	7	6		13
Pterodroma petrels				0		1		1
Royal albatrosses				0		1		1
Salvin's albatross	12	33		45	22	23		45
Shearwaters	3	3		6	4	2		6
Short-tailed shearwater				0		1		1
Shy albatross		2		2	1	1		2
Smaller albatrosses	3	2	2	7	3	3	1	7
Sooty shearwater	50	75		125	77	60		137
Southern royal albatross	1			1				0
Storm petrels		2		2	6	2		8
Wandering albatross (Unidentified)	2			2	1			1
Westland petrel	4	6		10	1	4		5
White-capped albatross	25	50	1	76	40	32	2	74
White-chinned petrel	41	73	1	115	110	136		246
White-faced storm petrel	1			1	2			2
White-headed petrel		1		1				0
Total	251	315	7	573	387	310	4	701

Table 15 summarises the proportion of dead/alive observed seabird captures on the deepwater trawl fleet for the 2008/09 to 2014/15 fishing years.

⁹ This table uses raw data from MPI Observers; species identifications have not yet been verified and are subject to change after specimens are necropsied or observer photos are formally identified.

Table 15. Proportion of observed seabird captures released alive on the deepwater trawl fleet between the 2008/09 and 2014/15 fishing years.

Fishing year	Percentage released alive
2008/09	33%
2009/10	46%
2010/11	40%
2011/12	32%
2012/13	43%
2013/14	45%
2014/15	55%

Table 16 shows industry reported seabird captures between the 2011/12 and 2014/15 fishing years. Tables 17 and 18 show the observed and model estimated total captures from all trawl fisheries, and by deepwater vessels targeting species in the National Deepwater Plan for the 2013/14 fishing year (includes some effort from vessels <28m).¹⁰

Table 19 shows the observed captures and capture rate for ling longline fisheries for the 2008/09 to 2014/15 fishing years. This is the only Tier 1 deepwater species fished using bottom longline.

Seabird interactions by fishery are reported in Appendix I.

Table 16: In-zone industry-reported seabird interactions between the 2010/11 and 2014/15 fishing years from the core deepwater fleet and any vessels targeting Tier 1 deepwater species (includes bottom longlining)¹¹

Fishing year	Large seabirds			Small seabirds			Total
	Alive	Dead	Total	Alive	Dead	Total	
2010/11	87	160	247	114	443	557	804
2011/12	62	175	237	58	241	299	536
2012/13	84	252	336	223	352	575	911
2013/14	78	246	324	196	288	484	808
2014/15	115	230	345	321	399	720	1,065

Table 17: Observed seabird captures and modelled estimates of total captures* in all New Zealand trawl fisheries by vessels >28m¹² from 2008/09 to 2013/14

	Tows	Observed				Estimated		
		Tows observed	% of tows observed	Observed captures	Capture rate	Estimated total captures	95% confidence interval	Estimated capture rate
2008/09	29,978	7,407	24.7	373	5.04	1,332	1,187 – 1,493	4.44
2009/10	29,506	7,677	26.0	235	3.06	890	787 – 1,001	3.02
2010/11	27,393	6,213	22.7	326	5.25	1,220	1,088 – 1,360	4.45
2011/12	25,593	8,265	32.3	228	2.76	708	631 – 793	2.77
2012/13	23,972	11,817	49.3	705	5.97	1,084	1,024 – 1,149	4.52
2013/14	25,660	11,220	43.7	461	4.11	808	753 - 867	3.15

* Does not include estimates of cryptic mortality

¹⁰ All data in this ARR has been compiled with the knowledge of a discrepancy in data for protected species in the Centralised Observer Database (COD). As part of MPI's ongoing review and testing of data accuracy, MPI has identified that about 2% of observed protected species captures between 2002 and 2015 were not recorded in COD. Steps are being taken to rectify this but it will take some time to update the database and any dependent estimates of protected species captures and risk. Accordingly, please interpret all estimates of protected species captures or risk in this document as likely to have a (probably small) negative bias. Updated estimates will be developed and reported as soon as possible.

¹¹ From Non-fish and Protected Species Bycatch forms.

¹² From <https://data.dragonfly.co.nz>

Table 18: 2013/14 Observed seabird captures and modelled estimates of total captures for New Zealand deepwater and middle-depth fisheries (includes effort by vessels <28m)

	Tows	Observed			Estimated	
		Tows observed	% of tows observed	Observed captures	Estimated total captures	95% confidence interval
Hoki	12,946	3,973	30.7	163	410	365 – 463
Hake	797	584	73.3	7	10	7 -15
Ling (trawl)	1,130	118	10.4	12	57	39 – 81
Squid (trawl)	2,051	1,787	87.1	203	236	223 – 252
Southern blue whiting	808	807	99.9	19	19	19 – 20
Jack mackerel	2,449	2,189	89.4	8	10	8 – 13
Scampi	4,421	254	5.7	26	194	159 – 236
Deepwater (ORH/OEO/CDL)	3,606	435	12.1	2	23	13 - 36
Tier 2 mid-depth*	6,408	1,398	21.8	54	318	244 – 414
Total	34,616	11,545	33.4	494	1,277	

* Includes all target fishing for Tier 2 species

Table 19: Observed and estimated seabird captures from ling bottom longline fisheries (includes all ling stocks and vessels <28m)

	Hooks	Observed				Estimated	
		Hooks observed	% of hooks observed	Observed captures	Capture rate	Estimated total Captures	95% confidence interval
2008/09	17,587,714	3,706,550	21.1	9	0.002	497	324 – 807
2009/10	18,395,093	1,717,425	9.3	10	0.006	541	363 – 849
2010/11	18,303,212	1,453,540	7.9	27	0.019	696	463 – 1,146
2011/12	17,015,393	1,701,100	10.0	8	0.005	472	322 – 696
2012/13	12,973,070	226,550	1.7	0	0.000	490	333 - 729
2013/14	21,655,008	1,979,516	9.1	36	0.018	798	539 - 1,233
2014/15	19,367,334	553,340	2.9	13	0.002		

More detailed information for captures and estimated captures of individual bird species may be found on the protected species website <https://data.dragonfly.co.nz>.

Vessel Management Plans (VMPs)

The following section summarises information provided through observer audits of vessel performance in relation to measures within VMPs. Measures within VMPs that vessels are audited against include the use of bird mitigation devices, the removal of fish ‘stickers’ from the net before shooting, avoiding shooting gear near congregations of marine mammals, and employing offal management techniques. Offal management is intended to reduce the amount of ‘food’ in the water for seabirds and marine mammals while fishing gear may pose a risk to those animals.

VMP-related issues that required follow-up by DWG were identified on 25 trips and were classed as being in one of four general categories (Table 20):

- I. **Administrative** – Relating to misunderstandings about requirements i.e. the need for observers to be shown live seabirds prior to release
- II. **Seabird trigger reporting** – relating to the reporting of trigger points
- III. **Seabird scaring devices** – relating to the need to employ an additional seabird mitigation device when experiencing seabird captures, or when mitigation devices need to be replaced or repaired.
- IV. **Offal management issues** – see below

Table 20: Breakdown of reviews with VMP-related issues during 2012/13 to 2014/15 fishing years

Type of issue	2012/13	2013/14	2014/15
Administrative	2	2	2
Seabird trigger not reported	2	2	2
Seabird scaring devices	8	6	8
Offal management issues	19	21	13
Total	31	31	25

Offal management issues

The management of offal is a contributing factor to both seabird and marine mammal captures and therefore issues with offal management on board vessels could be considered to be relevant to both VMPs and the MMOP. During the 2014/15 fishing year there were 13 trips that required follow up in relation to offal management issues. Issues are divided into four broad categories: general offal management, net cleaning or leaving the net in the water longer than desirable, floor wash, and primary offal management breakdown procedures. Table 21 provides information on the number of trips that required follow up for each category.

Table 21: Breakdown of offal management-related reviews for VMP/MMOP issues during 2012/13 to 2014/15 fishing years

Type of issue	2012/13	2013/14	2014/15
General offal management	15	14	7
Net cleaning / time in water	2	1	3
Floor wash	1	3	2
Breakdown procedures	1	3	1

Seabird bycatch trigger point notifications

All trawl vessels over 28 metres are required to notify DWG any time they capture more than a given number of seabirds within a defined time period. These are known as trigger point notifications. There were 11 trigger point activations for seabird captures in the 2014/15 fishing year. Trigger point specifics and activations are summarised in Table 22 below. Most seabird trigger point activations are as a result of net captures.

Table 22: Number of trigger point activations for seabirds in 2012/13 to 2014/15 fishing years from trawl vessels >28 m (overall length) or targeting scampi

Species	Trigger points		2012/13	2013/14	2014/15
	Captures in any 24 hr period	Captures in any 7 day period			
Seabirds - large	3 or more	10 or more of any species	7	3	0
Seabirds - small	5 or more		18	5	11

3.3 Marine Mammals

Total marine mammal interactions and captures in deepwater fisheries are estimated using statistical models that are informed by data on observed interactions, fishing effort location data from each deepwater fishery and marine mammal distribution data. The estimates of total captures do not include any estimates of cryptic mortality, although this will be included in the risk assessment modelling.

Information regarding observed captures of marine mammals is available shortly after the completion of each fishing year, whereas modelled total capture estimates take some time to process. Table 23 reports all observed and industry-reported marine mammal captures in deepwater fisheries for the 2013/14 and 2014/15 fishing years.

Table 24 shows the model estimated total captures from trawl fisheries for the 2008/09 to 2013/14 fishing years and Table 25 shows capture estimates from fishing activity targeting species in the National Deepwater Plan. Marine mammal interactions by fishery are reported in Appendix I.

Table 23: Observed and industry reported captures of marine mammals by the core deepwater fleet or vessels targeting Tier 1 deepwater fisheries in the 2014/15 fishing year.¹³ Records involving decomposing carcasses have not been included.

Species	Observed captures				Industry reported captures			
	Alive		Dead		Alive		Dead	
	2013/14	2014/15	2013/14	2014/15	2013/14	2014/15	2013/14	2014/15
Common dolphin			29	20			30	23
Dusky dolphin				2				2
New Zealand fur seal	3	13	152	109	11	30	247	234
New Zealand sea lion			4	8			4	7
Seals and sealions ¹⁴								2
Dolphins and toothed whales ¹⁵							2	

¹³ These are not cumulative, an observed capture will also have been reported by the vessel (i.e. the NZ sea lion observed captures are the same events as the industry reported NZ sea lion capture).

¹⁴ This is a generic description; captures reported under this code are not reported at the species level.

¹⁵ As per 14 above

Table 24: Model estimated total captures of marine mammals for the 2008/09 to 2013/14 fishing years from trawl vessels >28m (this represents the most up to date information available)

	Fishing effort			Observed captures		Estimated captures		
	All tows	Observed tows	% tows observed	Number	Rate	Mean captures	95% c.i.	% tows included
New Zealand Fur Seal								
2008/09	29,978	7,407	25	56	0.76	329	175-682	100
2009/10	29,506	7,677	26	61	0.79	298	163-632	100
2010/11	27,393	6,213	23	57	0.92	236	134-454	100
2011/12	25,593	8,265	32	67	0.81	267	143-551	100
2012/13	23,972	11,817	49	89	0.75	241	134-509	100
2013/14	25,660	11,220	44	153	1.36	248	187-368	100
Common dolphin								
2008/09	29,978	7,407	25	11	0.15	26	12-49	12.7
2009/10	29,506	7,677	26	4	0.05	26	6-65	11.0
2010/11	27,393	6,213	23	8	0.13	65	25-123	8.7
2011/12	25,593	8,265	32	5	0.06	7	5-14	10.4
2012/13	23,972	11,817	49	16	0.14	16	16-20	11.7
2013/14	25,660	11,220	44	29	0.26	29	28-35	11.6
New Zealand Sea Lion								
2008/09	29,978	7,407	25	3	0.04	12	6-21	30.6
2009/10	29,506	7,677	26	15	0.20	16	8-30	30.4
2010/11	27,393	6,213	23	6	0.10	8	2-16	30.9
2011/12	25,593	8,265	32	1	0.01	7	2-13	29.5
2012/13	23,972	11,817	49	25	0.21	6	4-9	25.8
2013/14	25,660	11,220	44	4	0.04	4	2-7	23.4

Table 25: 2013/14 Observed NZ fur seal captures and modelled estimates of total captures for New Zealand deepwater and middle-depth fisheries (this represents the most up to date information available)

	Tows	Observed			Estimated	
		Tows observed	% of tows observed	Observed captures	Estimated total captures	95% c.i.
Hoki	12,946	3,973	30.7%	30	156	79-312
Hake	802	584	73%	6	9	6-21
Ling (trawl)	1,130	118	10%	0	12	1-42
Squid (trawl)	2,051	1,787	87%	10	11	10-15
Southern blue whiting	811	810	100%	95	96	94-112
Jack mackerel	2,445	2,185	89%	10	11	10-14
Scampi	4,421	254	6%	1	6	1-20
Deepwater (ORH/OEO/CDL)	3,607	435	12%	0	0	0-4
Tier 2 mid-depth*	6,415	1,402	22%	4	61	22-138
Total	34,629	11,551	33%	156	362	

* Includes all effort targeting Tier 2 middle depths species.

Marine Mammal Operational Procedures

The Marine Mammal Operational Procedure (MMOP) aims to reduce the risk of incidental captures of marine mammals during deepwater fishing activity. Measures included in the MMOP include removing stickers from the net before shooting it, moving away from large congregations of marine mammals before shooting if possible, and always be on the lookout for marine mammals around fishing gear. Specific measures are included to minimise the risk of dolphin captures including information on the

time of day and areas where the risk of dolphin captures is highest. It also includes trigger points which should be reported to DWG within 24 hours.

Three observed trips during 2014/15 were identified as having issues with adherence to measures within the MMOP that required follow up from DWG (see Table 13). One related to multiple fur seal captures and there was ongoing communication between DWG and the vessel regarding the captures. The second involved a vessel regularly returning to an area where it had experienced several common dolphin captures. The third issue related to a vessel shooting the net between the hours of 2.30am and 4.30am in the jack mackerel fishery despite the MMOP advising vessel operators not to do this.

Marine mammal trigger point notifications

All trawl vessels over 28 metres are required to notify DWG any time they capture more than a given number of marine mammals within a defined time period. There were 30 trigger point activations for marine mammal captures in the 2014/15 fishing year. These are summarised in Table 26 below.

Table 26: Marine mammal trigger point activations for the 2012/13 to 2014/15 fishing years

Species	Trigger Points		Trigger activations 2012/13	Trigger activations 2013/14	Trigger activations 2014/15
	Captures in any 24 hr period	Captures in any 7 day period			
Fur seals	2	5	12	9	8
Dolphins	1	n/a	10	7	14
Sea lions	1	n/a	15	5	8

All fur seal triggers in 2014/15 relate to the capture of two or more fur seals in a 24 hour period. One vessel experienced several additional triggers after the initial one, however the additional triggers are not included in the total.

3.4 Elasmobranchs

Management Objectives 2.4 and 2.5 in the National Deepwater Plan address the need to manage and monitor shark interactions with deepwater fishing activity. The management of sharks in New Zealand is guided by the National Plan of Action for the Conservation and Management of Sharks (NPOA-Sharks), which was revised in 2013. The new NPOA-Sharks sets out goals and five-year objectives to guide the conservation and management of sharks for the next five years in New Zealand. The NPOA Sharks objectives that are most immediately relevant to deepwater fisheries are the objective to eliminate shark finning in New Zealand and to reduce the use of generic reporting codes.

On 1 October 2014 it became illegal for commercial fishers to remove the fins from any shark and discard the body of that shark. Fishers are still able to land shark fins, however conditions apply depending on the species concerned (summarised in the Table below). It also became possible for fishers to return dead mako, porbeagle and blue sharks to the sea (fishers were already able to return these species, as well as rig and school shark, to the sea if they were alive).

Table 27. Summary of conditions that apply if fishers wish to land shark fins

Approach	Description	Applicable species
Ratio	Fins must be stored and landed separately by species. The weight of fins landed must not exceed a specified percentage of the greenweight of the shark. Weight of fins must be reported on landing returns. The ratio applies to landings on a trip-by-trip basis.	Elephant fish
		Dark ghost shark
		Mako shark
		Pale ghost shark
		Porbeagle shark
		Rig
		School shark
Fins artificially attached	After being processed to the dressed state, fins must be re-attached to the shark by some artificial means. Landings to be reported with landed state of SFA (shark fins attached).	Blue shark
Fins naturally attached	After being processed to the headed and gutted state, the fins must remain attached to the body by some portion of uncut skin. Landings to be reported with landed state of SFA (shark fins attached).	Spiny dogfish
		All non-QMS species

In 2013, a trigger point was added to the Deepwater Fisheries Operational Procedures that requires vessels to report any basking shark captures to Deepwater Group Ltd within 24 hours. Six triggers were reported for basking shark captures during the 2014/15 fishing year, the same number reported during 2013/14.

Elasmobranchs are classified as: rays and skates, sharks and dogfish, and chimaeras. Within these three classifications, some species are protected, some are included in the QMS, and some are reported using generic codes which does not allow for species determination.

Reporting for sharks in connection with deepwater fisheries includes information on the total interactions with shark species during deepwater fishing activity, interactions with protected shark species, the level of the use of generic reporting codes, and information about the utilisation and processing of sharks in deepwater fisheries. All information regarding 'landings' is based on a 'core deepwater fleet' which includes most trawl vessels over 28 metres, scampi fishing vessels, and bottom longline vessels over 28 metres. Information is also obtained from observer records, from fishing effort targeting Tier 1 species.

Table 28: Observed and industry reported captures (by number) of protected shark species from the core deepwater fishing fleet in the 2014/15 fishing year ¹⁶

	Observed Captures	Industry-reported
Basking shark	6	11 ¹⁷
Spine-tailed devil ray	-	-
Smalltooth sandtiger shark	-	-
Manta ray	-	-
White pointer shark	-	-
Whale shark	-	-

Table 29: Reported in-zone landings (tonnes) of the three categories of elasmobranchs from the core deepwater fishing fleet in 2014/15

	Chimaeras	Rays & Skates	Sharks & Dogfish	Total
Generic reporting code	1	14	257	272
QMS species	1,204	520	4,474	6,197
Other	113	19	985	1,117
Total	1,311	552	5,715	7,587

Generic reporting codes make it impossible to accurately quantify the captures of specific shark species. The NPOA-Sharks identified the use of generic reporting codes for shark catches as an area in need of attention from the Ministry in future. Table 30 reports the percentages of shark landings and observed catches reported using generic species codes.

Table 30: Use of generic reporting codes from both observer data and reported landings 2004/05 to 2014/15 as a percent of total reported elasmobranch landings/catches in the core deepwater fleet.

	% industry-reported shark landings with generic codes (DW fleet only)	% of observed shark catches with generic codes (from trips on DW vessels only)
2004/05	8.4	7
2005/06	10.0	6
2006/07	10.3	5
2007/08	9.7	6
2008/09	10.7	8
2009/10	11.0	8
2010/11	9.6	4
2011/12	11.8	3.5
2012/13	9.3	3.0
2013/14	4.1	1.4
2014/15	3.6	0.9

Details of elasmobranch landings by the core deepwater fleet during 2014/15 are summarised in Table 31.

¹⁶ These are not cumulative, an observed capture will also have been reported by the vessel (i.e. the basking shark observed captures are the same events as the industry reported basking shark captures).

¹⁷ Three industry-reported captures appear to be errors; they were all from the same vessel, which carried an MPI observer who did not observe any basking shark captures

Table 31: Primary processed state for elasmobranchs managed under the QMS landed in 2014/15 fishing year by the core deepwater fleet

Species	Total landings by DW fleet (tonnes greenweight)	% of total landings of that species	Amount processed (t)	Amount mealed (t)	Amount discarded under observer approval (t)	Amount discarded dead (Schedule 6)	Amount returned alive
Blue shark	6	1.1%	<1	3		2	1
Elephantfish	19	1.4%	12	1	5	n/a	n/a
Dark ghost shark	459	36.7%	361	33	46	n/a	n/a
Mako shark	24	27.4%	<1	6		12	6
Pale ghost shark	726	97.7%	552	154	12	n/a	n/a
Porbeagle shark	87	70.8%	1	7	3	56	19
Rig	2	0.2%	1		1	n/a	
Rough skate	200	12.1%	168	21	1	n/a	9
School shark	161	5.2%	128	18	12	n/a	4
Smooth skate	320	47.0%	255	48	2	n/a	14
Spiny dogfish	4,193	66.1%	333	1,783	3	2,061 (destination type M)	
Total	6,198	35.7%	1,815	2,073	86	70	52

A single vessel from the core deepwater fleet reported landing fins from a shark species subject to the finweight/greenweight ratio. The vessel only reported landing fins from one fishstock on a single trip at the start of the 2014/15 fishing year and total greenweight was less than 100kg.

Deepwater vessels did not report landing any sharks under the processed state code SFA (shark fins attached).

3.5 Tier 3 species

Tier 3 species are non-QMS species that are caught during fishing activity for QMS species. The top 40 Tier 3 species landed are reported in Table 32, full details of all Tier 3 species caught in deepwater fisheries can be found in Appendix III.

Table 32: Landings (tonnes) of top 40 Tier 3 species from core deepwater fleet in 2014/15 and four years of catch history

Code	Common Name	2010/11	2011/12	2012/13	2013/14	2014/15
JAV	Javelinfish	4,000	3,298	4,071	3,926	4,234
RAT	Rattails	3,193	3,243	4,047	3,381	3,682
STU	Slender tuna	108	74	262	582	235
ETB	Baxter's lantern dogfish	47	30	41	300	290
SND	Shovelnose dogfish	127	97	135	283	251
OSD	Sharks & Dogfish not otherwise specified	580	656	546	226	189
SDO	Silver dory	194	189	127	225	231
NCB	Smooth red swimming crab	586	203	717	169	186
BSH	Seal shark	143	145	198	128	87
LCH	Long-nosed chimaera	95	99	113	123	111
SSI	Silverside	144	164	105	98	123
CSQ	Leafscale gulper shark	13	9	32	96	123
WSQ	Warty squid	79	81	96	93	89
CON	Conger eel	63	37	66	91	107
FHD	Deepsea flathead	92	84	102	78	105
SLK	Slickhead	39	58	44	65	107
CDO	Capro dory	54	46	35	61	58
DWD	Deepwater dogfish (Unspecified)	98	78	35	59	68
RUD	Rudderfish	36	32	53	55	57

Code	Common Name	2010/11	2011/12	2012/13	2013/14	2014/15
SUN	Sunfish	15	15	13	51	20
BEN	Scabbardfish	23	14	18	49	44
SRH	Silver roughy	32	24	127	48	63
BEL	Bellowsfish	162	81	51	45	53
HCO	Hairy conger	71	14	48	45	63
SFI	Starfish	60	73	47	44	48
RHY	Common roughy	92	153	119	41	116
CAR	Carpet shark	68	43	32	40	60
HAG	Hagfish	14	2	5	40	7
CBE	Crested bellowsfish	3	11	21	39	36
CYP	Longnose velvet dogfish	1	0	9	38	10
MOD	Morids	19	27	28	37	62
CRB	Crab (Unspecified)	81	103	72	35	37
ALB	Albacore tuna	2	2	11	35	22
POP	Porcupine fish	26	40	33	32	31
THR	Thresher shark	15	14	17	25	31
NSD	Northern spiny dogfish	22	10	20	25	50
TOA	Toadfish	30	23	28	24	28
ETL	Lucifer dogfish	17	25	32	21	32
JFI	Jellyfish (Unspecified)	30	16	25	19	4
UNI	Unidentified fish	3	2	7	19	2

3.6 Benthic Interactions

Benthic bycatch

Many deepwater fisheries are undertaken by fishing gear that makes contact with the seabed. This can lead to catches of benthic organisms including species of corals, sponges, and sea anemones as a bycatch in these fisheries. In New Zealand all black corals, gorgonian corals, stony corals, and hydrocorals are protected under the Wildlife Act 1953. Benthic bycatch organisms and quantities reported by Ministry observers are shown in Table 33.

Table 33: Observed and industry reported catch of benthic species from the core deepwater fleet and all vessels targeting Tier 1 species in the 2014/15 fishing year

Phyla	Common name	Total amount observed (kg wet weight)	Industry-reported (kg wet weight)
	Corals (protected species)	1,505	862
	Corals (generic codes)	2,851	1,698
Cnidaria	Soft corals	92	
	Anemones	7,618	
	Sea pens	50	
	Hydroids	10	
Porifera	Sponges	12,674	65,317

Trawl footprint

Each year, the total trawl footprint is calculated for eleven main deepwater species, as well as the cumulative footprint since 1989. The reporting is based on TCEPR reporting forms, and is reviewed each year through the Aquatic Environment Working Group. Trawled area is reported against the 'fishable area', which is defined as the area shallower than 1600m and not closed to bottom trawling (by BPAs, seamount closures or marine reserves). Figure 5 below shows the cumulative swept area from 1989/90 – 2010/11 relative to the fishable area. Figure 6 shows only the 2010/11 swept area. Data for 2011/12 onwards is still in preparation.

Swept area for each individual Tier 1 species is reported in Appendix I.

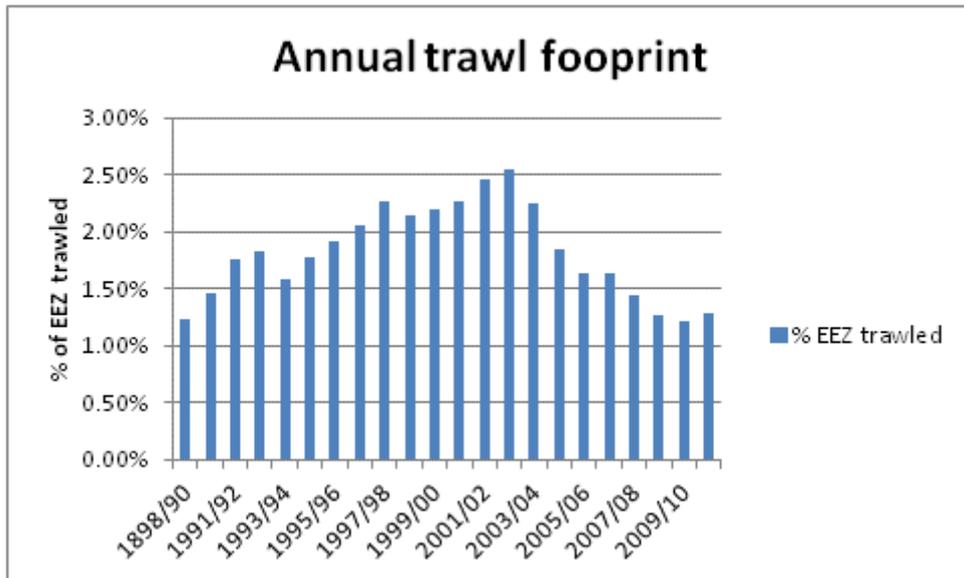


Figure 4: Estimated annual percentage of the EEZ seafloor contacted by trawling each year for 1989/90 to 2010/11.

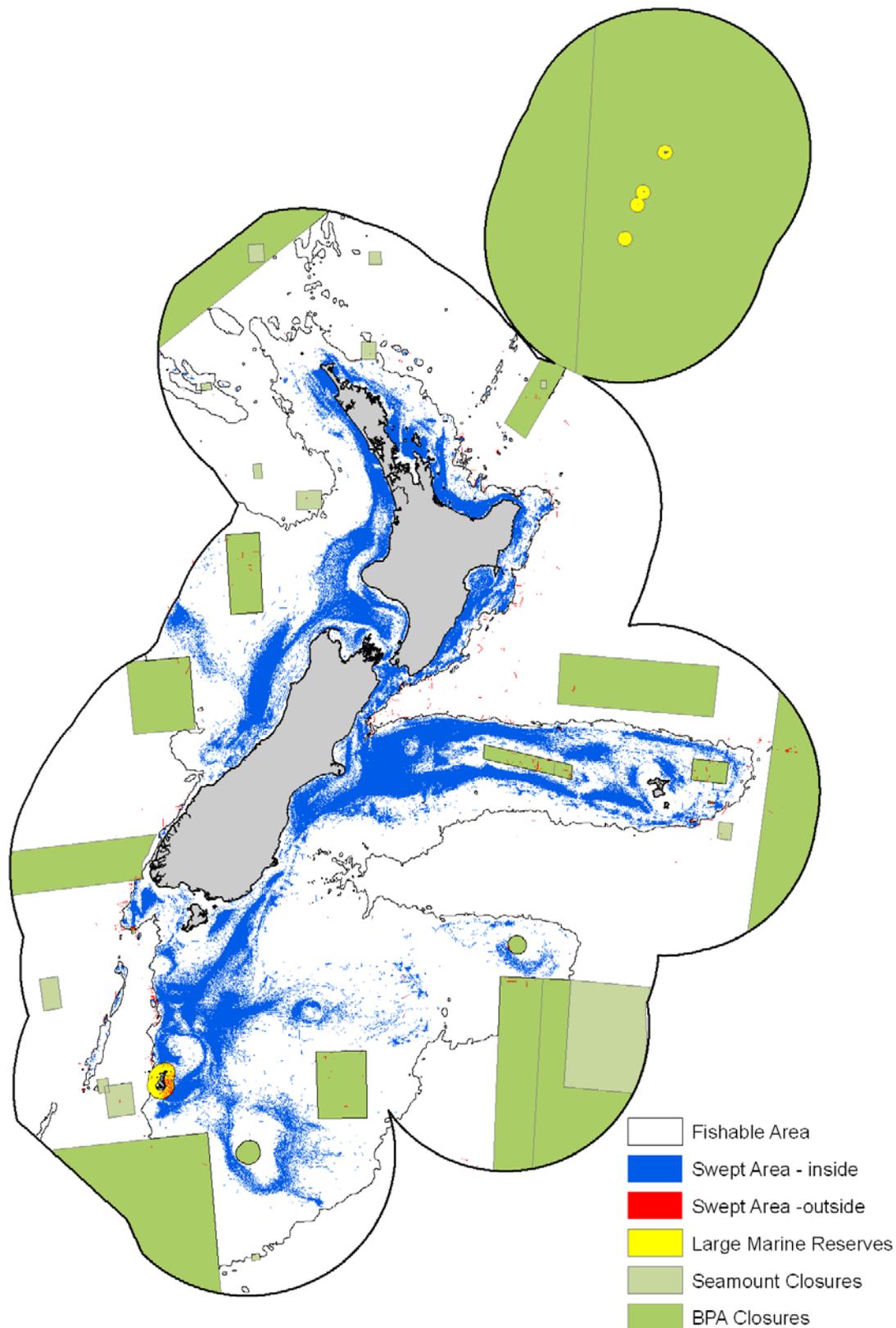


Figure 5: Trawl footprint for all deepwater species in relation to the fishable area for the period 1989/90 to 2009/10.¹⁸

¹⁸ Effort appearing in closed areas is from the years prior to the closures. E.g. the Auckland Islands Marine Reserve was created in 2003, fishing effort from 1989/90 until then is shown in the figure.

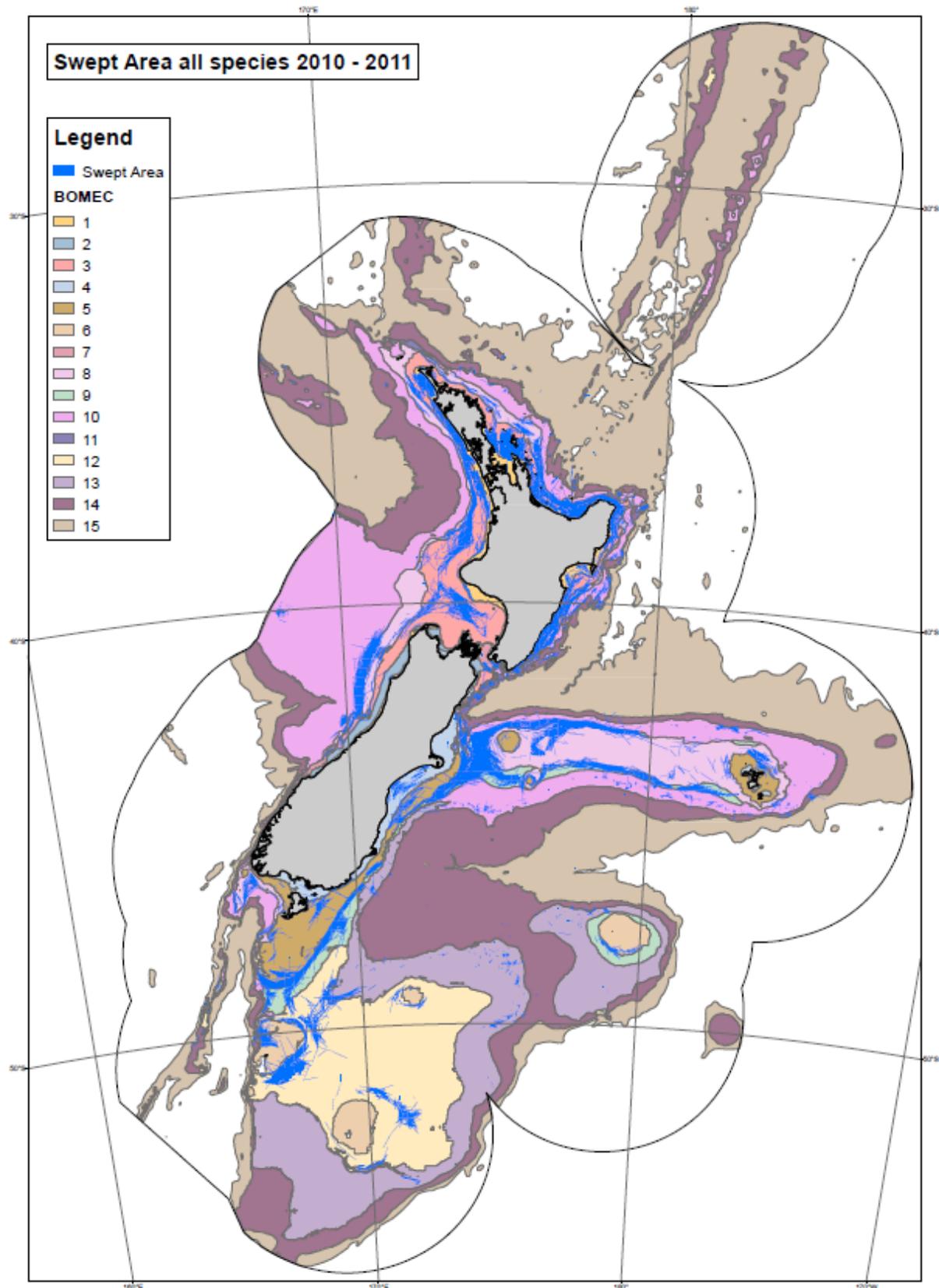


Figure 6: Trawl footprint for all deepwater species in relation to BOMECS areas for the 2010/11 fishing year.

Trawl footprint vs. Benthic Optimised Marine Environmental Classification (BOMEC)¹⁹

The trawl footprint of deepwater fisheries is also assessed against the 15 BOMEC classes representing proxies for various benthic habitats in the New Zealand EEZ. This analysis allows for the monitoring of interactions with particular BOMEC classes. Data for 2011/12 onwards is still in preparation.

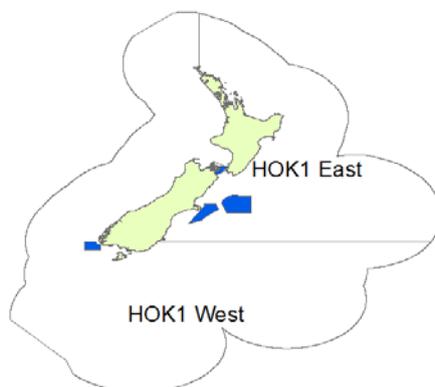
Table 34: The BOMEC classification and swept area for all species, 1989/90 to 2010/11.

BOMEC code	Area (km ²)	Swept Area (km ²)	Swept Area (%)
1	27,557	12,484	45%
2	12,420	3,331	27%
3	89,710	58,234	65%
4	27,268	9,675	35%
5	60,990	26,781	44%
6	38,609	6,787	18%
7	6,342	3,056	48%
8	138,551	68,922	50%
9	52,224	38,300	73%
10	311,361	71,912	23%
11	1,289	14	1%
12	198,577	55,181	28%
13	233,825	18,737	8%
14	493,034	11,453	2%
15	935,315	2,459	0.3%

¹⁹ Details regarding the definition of BOMEC classes can be found in 'Leathwick, J.R.; Rowden, A.; Nodder, S.; Gorman, R.; Bardsley, S.; Pinkerton, M.; Baird, S.J.; Hadfield, M.; Currie, K.; Goh, A. (2012). A Benthic-optimised Marine Environment Classification (BOMEC) for New Zealand waters. New Zealand Aquatic Environment and Biodiversity Report No. 88. 54p.' (accessible [here](#))

Appendix I: Summaries of NZ Deepwater Fisheries 2014/15

HOK: Hoki (Tier 1)



2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
HOK1	161,528	161,640	160,000	20	20	1,600
Reference points and current status						
Metric			Status			
Target range		35-50% B ₀				
B _{MSY}	Eastern stock	24% B ₀		B ₂₀₁₅ : 59 % B ₀		
	Western stock	25% B ₀		B ₂₀₁₅ : 51 % B ₀		
Soft limit		20% B ₀		Both stocks 'Exceptionally Unlikely' to be below limit		
Hard limit		10% B ₀		Both stocks 'Exceptionally Unlikely' to be below limit		
Exploitation rate (F)		10-25% of target biomass				
Deemed value rates and charges						
Stock	Interim	Annual	Differential	2014/15 Actual		
HOK1	\$0.45 per kg	\$0.90 per kg	\$1.30 @ >102%	\$10		
Environmental indicators and observer coverage*						
Observer coverage		2013/14: 30.7% of tows observed		2014/15: 26.6% of tows observed		
Seabirds		2013/14: 163 observed captures; 410 estimated ²⁰		2014/15: 81 observed captures		
Marine mammals	NZ fur seal	2013/14: 30 observed captures; 156 estimated		2014/15: 42 observed captures		
	NZ sea lion	2013/14: 0 observed captures; 1 estimated		2014/15: 0 observed captures		
Benthic interactions (fishable area trawled)		2010/11: 24,029 km ² (1.71%)*		1989/90 to 2010/11: 169,495 km ² (11.97%)*		
Economic indicators (calendar year)						
Quota value 2009		\$815m				
Export earnings 2014		\$204.7m				

Eastern and Western catch limit reporting

The hoki fishery is considered to consist of two biological stocks; an eastern stock and western stock. Agreements between the Minister and the fishing industry have seen catch limits apply to each stock since 2001/02. For the 2014/15 fishing year, owners of at least 84% of the hoki quota had formally entered into the catch limit agreement requested by the Minister. The east:west catch limit regime is administered by FishServe and monitored by DWG.

Table 35 below provides details on the catch limits and catch amounts for the 2014/15 fishing year.

²⁰ The number of observed captures refers includes both dead seabirds and those released alive

Table 35: Catch limits and actual catch estimates for 2014/15 fishing year (tonnes).

Catch limits	2014/15 Planned	Catch within agreement (from FishServe)	Catch estimates for all fishers	Estimated catch scaled up to total landings
Eastern stock	60,000	59,875	62,558	64,682
Western stock	100,000	78,963	93,666	96,846

Hoki Operational Procedure (HOP)

The purpose of the Hoki Operational Procedure (HOP) is to monitor and manage fishing effort within the agreed hoki management areas (HMAs). HMAs are areas where there is information to demonstrate the presence of high abundance of juvenile hoki (for these purposes hoki <55cm in total length) and no target fishing for hoki is allowed.

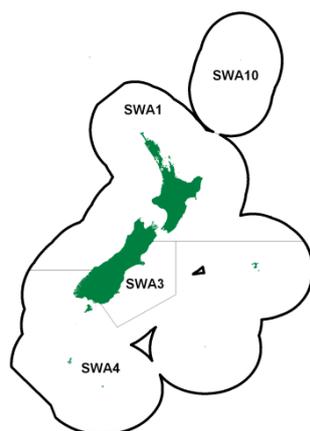
Table 36: Summary of HMA fishing activity by trawl vessels >28m for the 2011/12 – 2014/15 fishing years

HMA	# of vessels that fished in HMA	# of HOK target tows undertaken ²¹	# of non-HOK target tows	Fisher estimated catch of HOK (t)	Estimated catch of all species (t)
Canterbury Banks					
2011/12	24	16	454	494	7,301
2012/13	20	17	471	772	7,849
2013/14	19	41	584	692	8,402
2014/15	21	18	336	576	4,014
Mernoo Bank					
2011/12	17	14	68	456	1,310
2012/13	14	8	178	322	3,092
2013/14	16	9	231	346	4,102
2014/15	20	12	193	290	3,231
Puysegur					
2011/12	14	2	98	197	1,167
2012/13	12	2	82	80	781
2013/14	11	0	118	294	1,432
2014/15	10	0	96	454	1,392
Cook Strait					
2011/12	-	-	-	-	-
2012/13	1	3*	-	1	1
2013/14	-	-	-	-	-
2014/15	2	2*	-	<1	32

* These tows in the Cook Strait HMA were undertaken as part of a research project to estimate hoki spawning abundance.

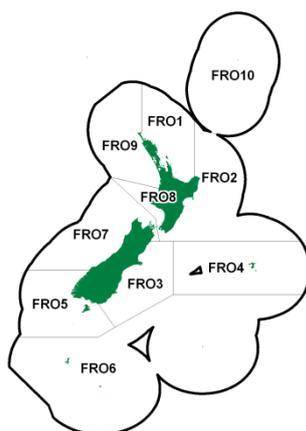
²¹ Almost all tows that reported targeting hoki in an HMA were undertaken very close to HMA boundaries. It is likely the lack of precision in reporting start and end positions resulted in tows being classed as being in an HMA when in fact they were outside.

SWA: Silver warehou (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
SWA 1	878	3,003	3,000	2	1	0
SWA 3	3,820	N/A	3,280	N/A	N/A	N/A
SWA 4	4,355	N/A	4,090	N/A	N/A	N/A
Reference points and current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	Unknown				
Soft Limit	20% B ₀	Unknown				
Hard Limit	10% B ₀	Unknown				
Deemed value rates and charges						
Stock	Interim	Annual	Differential	2014/15 Actual		
SWA 1 SWA 3 SWA 4	\$0.50 per kg	\$1.22 per kg	\$1.74 @ 110-130% \$3.00 @ >130%	\$92	\$779,000	\$21,000
Environmental indicators and observer coverage						
Observer coverage	2013/14: 58% tows observed		2014/15: 65% of tows observed			
Seabirds	2013/14: 47 observed		2014/15: 76 observed captures			
NZ fur seal	2013/14: 0 observed		2014/15: 1 observed capture			
Benthic interactions (fishable area trawled)	2010/11: 2,272 km ² (0.16%)		1989/90 to 2010/11: 20,996 km ² (1.49%)			
Economic indicators (calendar year)						
Quota value 2009	\$83m					
Export earnings 2014	\$16.9m					

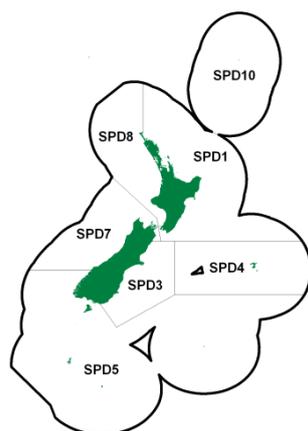
FRO: Frostfish (Tier 2)



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2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
FRO 3	13	176	176	0	0	N/A
FRO 4	69	28	28	0	0	N/A
FRO 5	14	135	135	0	0	N/A
FRO 6	<1	11	11	0	0	N/A
FRO 7	1,027	2,625	2,623	1	1	N/A
FRO 8	732	649	649	0	0	N/A
FRO 9	373	140	138	1	1	N/A
Reference points and current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	Unknown				
Soft Limit	20% B ₀	Unknown				
Hard Limit	10% B ₀	Unknown				
Deemed value rates and charges						
Stock	Interim		Annual		2014/15 Actual	
FRO 3	\$0.17 per kg		\$0.34 per kg		0	
FRO 4	\$0.12 per kg		\$0.24 per kg		\$9,400	
FRO 5					0	
FRO 6					0	
FRO 7	\$0.08 per kg		\$0.15 per kg		0	
FRO 8					\$17,000	
FRO 9					\$35,000	
Economic indicators (calendar year)						
Quota value 2009		\$2.8m				
Export earnings 2014		No export information specific to frostfish is currently available				

SPD: Spiny dogfish (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
SPD 4	1,374	1,666	1,626	10	10	20
SPD 5	1,713	3,753	3,700	8	8	37
Reference points and current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	Unknown				
Soft Limit	20% B ₀	Unknown				
Hard Limit	10% B ₀	Unknown				
Deemed value rates and charges						
Stock	Interim	Annual	Differential	2014/15 Actual		
SPD 4	\$0.05 per kg	\$0.10 per kg	N/a	\$43		
SPD 5				\$0		
Economic indicators (calendar year)						
Quota value 2009		\$6.1m				
Export earnings 2014		\$1.1m (includes all SPD stocks)				

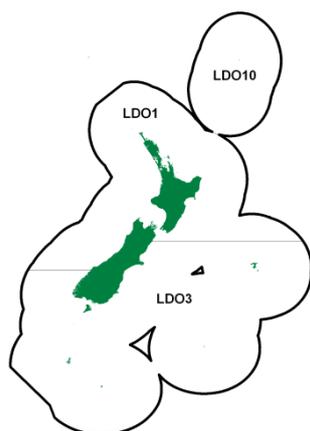
WWA: White warehou (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
WWA3	225	585	583	1	1	0
WWA4	69	332	330	1	1	0
WWA5B	447	2,621	2,617	2	2	0
WWA7	98	129	127	1	1	0
WWA8	0	1	1	0	0	0
WWA9	0	0	0	0	0	0
Reference points and current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	Unknown				
Soft Limit	20% B ₀	Unknown				
Hard Limit	10% B ₀	Unknown				
Deemed value rates and charges						
Stock	Interim	Annual	Differential	2014/15 Actual		
WWA3				\$1,300		
WWA4				0		
WWA5B	\$0.52 per kg	\$1.03 per kg	\$2.00 @ >110%	0		
WWA7				0		
WWA8	\$0.27 per kg	\$0.54 per kg	na	0		
WWA9				0		
Environmental indicators and observer coverage						
Observer coverage	2013/14: 78% tows observed		2014/15: 70% of tows observed			
Seabirds	2013/14: 3 observed captures		2014/15: 0 observed captures			
NZ fur seal	2013/14: 0 observed captures		2014/15: 0 observed captures			
Economic indicators (calendar year)						
Quota value 2009	\$16.8m					
Export earnings 2014	\$8.5m ²²					

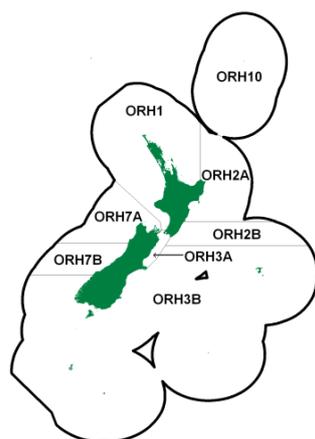
²² Information in export statistics for “Warehou, Other” is assumed to be white warehou as there are separate entries for silver and blue warehou.

LDO: Lookdown dory (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
LDO1	207	168	168	0	0	0
LDO3	357	614	614	0	0	0
Reference points and current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	Unknown				
Soft Limit	20% B ₀	Unknown				
Hard Limit	10% B ₀	LDO1: Unlikely to be below the hard limit (<40%)				
		LDO3: Unlikely to be below the hard limit (<40%)				
Deemed value rates and charges						
Stock	Interim		Annual		2014/15 Actual	
LDO1	\$0.21 per kg		\$0.42 per kg		\$15,900	
LDO3	\$0.21 per kg		\$0.42 per kg		0	
Economic indicators (calendar year)						
Quota value 2009		\$0.9m				
Export earnings 2014		This species is not listed individually in export statistics				

ORH: Orange roughy (Tier 1)



2014/15 Landings, Catch limits, and Allowances (tonnes)						
Stock	2014/15 Catch	TAC	TACC	Recreational	Customary	Other fishing related mortality
ORH 1	1,181	1,470	1,400	0	0	70
ORH 2A	483	512	488	0	0	24
ORH 2B	54	63	60	0	0	3
ORH 3A	156	186	177	0	0	9
ORH 3B	4,739	5,250	5,000	0	0	250
ORH 7A	1,594	1,680	1,600	0	0	80
ORH 7B ²³	2	1	1	0	0	0
Reference points and current status						
Target	30-50%B ₀	ORH 3B NW Chatham Rise	B ₂₀₁₄ : 37% B ₀			
		ORH 3B E & S Chatham Rise	B ₂₀₁₄ : 30%B ₀			
		ORH 7A	B ₂₀₁₄ : 42%B ₀			
	30-40%B ₀	ORH 1				
		ORH 2A North	B ₂₀₀₃ : 24% B ₀			
		ORH 2A South, 2B, 3A (MEC)	B ₂₀₁₄ : 14% B ₀			
		ORH 3B Puysegur				
		ORH 3B Sub-Antarctic				
	ORH7B	B ₂₀₀₄ : 17% B ₀				
Deterministic B _{MSY}	22-25% B ₀					
Soft limit	20%B ₀	ORH 1				
		ORH 2A North	Unlikely (<40%) below			
		ORH 2A, 2B, 3A (MEC)	Likely (>60%) below			
		ORH 3B NW Chatham Rise	Very Unlikely (<10%) below			
		ORH 3B E & S Chatham Rise	Unlikely (<40%) below			
		ORH 3B Puysegur				
		ORH 3B Sub-Antarctic				
		ORH7A	Very Unlikely (<10%) below			
ORH7B	Likely (>60%) below					
Hard limit	10%B ₀	ORH 1				
		ORH 2A North	Very Unlikely (<10%) below			
		ORH 2A, 2B, 3A (MEC)	Unlikely (<40%) below			
		ORH 3B NW Chatham Rise	Exceptionally Unlikely (<1%) below			
		ORH 3B E & S Chatham Rise	Very Unlikely (<10%) below			
		ORH 3B Puysegur				

²³ An additional 22 tonnes was taken in ORH7B during a research survey conducted in late June / early July 2015

		ORH 3B Sub-Antarctic		
		ORH7A	Exceptionally Unlikely (<1%) below	
		ORH7B	Unlikely (<40%) below	
Harvest strategy				
Harvest Control Rule for: ORH 3B – NW Chatham Rise ORH 3B – E&S Chatham Rise ORH 7A	Based on an F_{mid} of 4.5%. This is increased slightly above the midpoint of the target range and decreased slightly below the midpoint. If a stock is below the target range, F is decreased more substantially and the subsequent F is also rescaled to ensure that biomass returns to the target range.			
Exploitation rate (F): All other stocks	4.5% of current biomass if in target range. F is reduced if biomass is below the target range			
Deemed value rates and charges				
Stock	Interim	Annual	Differential	2014/15 Actual
ORH 1	\$1.70 per kg	\$3.40 per kg	\$5.00 @ > 110%	0
ORH 2A ORH 2B ORH 3A	\$2.50 per kg	\$5.00 per kg	\$6.00 @ 120-140% \$7.00 @ 140-160% \$8.00 @ 160-180% \$9.00 @ 180-200% \$10.00 @ > 200%	0 0 0
ORH 3B ORH7A	\$2.50 per kg	\$5.00 per kg	\$6.25 @ > 110%	0
ORH 7B	\$1.60 per kg	\$3.20 per kg	\$5.00 @ > 110%	\$3,000
Environmental indicators and observer coverage				
Observer coverage*	2013/14: 11.5% tows observed		2014/15: 31.7% tows observed	
Seabirds	2013/14: 0 observed captures		2014/15: 2 observed captures	
Marine mammals	NZ fur seal	2013/14: 0 observed captures, 0 estimated		2014/15: 1 observed capture
	NZ sea lion	2013/14: 0 observed captures, 0 estimated		2014/15: 0 observed captures
Benthic impacts (fishable area trawled)	2010/11: 1,031 km ² (0.04%)*		1989/90 – 2010/11: 38,861 km ² (2.63%)*	
Economic indicators (calendar year)				
Quota value 2009	\$282m			
Export earnings 2014	\$36.5m (includes catch from outside the EEZ)			

Table 37: Sub-area catch limits and actual 2014/15 catch for orange roughy stocks.

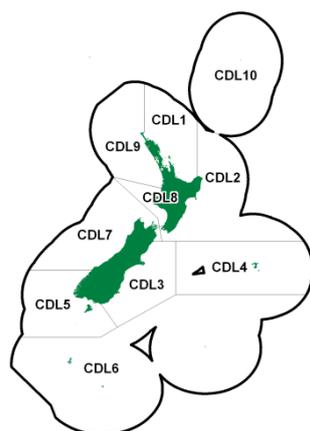
Sub-area catch limits (in tonnes)			
Stock	Sub-area	Agreed catch limit	2014/15 Catch ²⁴
ORH 1 ²⁵	Area A	530 tonnes	397
	Area B	530 tonnes	547
	Area C	470 tonnes	1
	Area D	470 (incl. 30 tonnes bycatch limit in the MC Box)	235 (2 in MC Box)
ORH 2A	ORH 2A North	200	193
ORH 2A South, 2B and 3A	MEC	525	499
ORH 3B	NW Chatham Rise	1,250 ²⁶	824
	E & S Chatham Rise	3,100	3,269
	Puysegur	150	151
	Sub-Antarctic	500	496

²⁴ From industry-reported catch records, monitored by MPI.

²⁵ The sum of the catch limits applying to each sub-area is greater than the overall TACC of 1,400 tonnes. This means the catch limit cannot be reached in each sub-area.

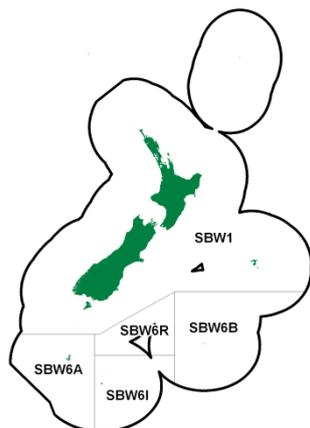
²⁶ Quota owners agreed to shelve 207 tonnes of NW Chatham Rise ACE during 2014/15 leaving 1,043 tonnes available to be caught

CDL: Black cardinalfish (Tier 2)



2014/15 Landings, Catch limits, and Allowances (in tonnes)						
Stock	2014/15 Catch	TAC	TACC	Recreational	Customary	Other fishing related mortality
CDL 1	21	1,320	1,200	0	0	120
CDL 2	408	460	440	0	0	20
CDL 3	209	196	196	0	0	N/A
CDL 4	18	66	66	0	0	N/A
CDL 5	4	22	22	0	0	N/A
CDL 6	1	1	1	0	0	N/A
CDL 7	6	39	39	0	0	N/A
CDL 8	0	0	0	0	0	N/A
CDL 9	1	4	4	0	0	N/A
Reference points and Current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	CDL 2, 3 & 4	2009: Very Unlikely to be at or above target (<10%)			
Soft Limit	20% B ₀	CDL 2, 3 & 4	2009: Likely to be below the soft limit (>60%)			
Hard Limit	10% B ₀	CDL 2, 3 & 4	2009: About as Likely as Not to be below the hard limit (40-60%)			
Deemed value rates and charges						
Stock	Interim	Annual	Differential	2014/15 Actual		
CDL 1				0		
CDL 6				\$37		
CDL 7	\$0.15 per kg	\$0.30 per kg	na	0		
CDL 8				0		
CDL 9				0		
CDL 2	\$0.30 per kg	\$0.60 per kg	\$0.69 @ > 120%	0		
CDL 5	\$0.26 per kg	\$0.52 per kg	na	0		
CDL 3				0		
CDL 4	\$0.26 per kg	\$0.52 per kg	\$0.60 @ > 120%	0		
Environmental indicators and observer coverage						
Observer coverage	2013/14: 1% tows observed			2014/15: 13% tows observed		
Seabirds	2013/14: 0 observed			2014/15: 0 observed		
NZ fur seal	2013/14 0 observed, 0 estimated			2014/15: 0 observed		
Economic indicators (calendar year)						
Quota value 2009	\$4.2m					
Export earnings 2014	\$1.0m					

SBW: Southern blue whiting (Tier 1)



Landings, Catch limits and Allowances as of 1 April 2015 (tonnes)							
Stock	2014/15 Landings ²⁷	2015/16 Landings ²⁸	TAC	TACC	Recreational	Customary	Other fishing related mortality
SBW 1	29	18	8	8	0	0	N/A
SBW 6A	156	90	1,640	1,640	N/A	N/A	N/A
SBW 6B	7,054	2,405	7,000 ²⁹	6,860	0	0	140
SBW 6I	24,592	22,100	40,000	39,200	0	0	800
SBW 6R	34	11	5,500	5,500	N/A	N/A	N/A
Reference points and Current status (as per Harvest Strategy Standard defaults)							
Target	40% B ₀	SBW 1	Unknown				
		SBW 6A	Unknown				
		SBW 6B	B ₂₀₁₃ : 40-50% B ₀				
		SBW 6I	B ₂₀₁₄ : at or above 50% B ₀				
		SBW 6R	Unknown				
Soft limit	20%B ₀	SBW 1	Unknown				
		SBW 6A	Unknown				
		SBW 6B	Very Unlikely to be below (<10%)				
		SBW 6I	Exceptionally Unlikely to be below (<1%)				
		SBW 6R	Unknown				
Hard limit	10%B ₀	SBW 1	Unknown				
		SBW 6A	Unknown				
		SBW 6B	Exceptionally Unlikely to be below (<1%)				
		SBW 6I	Exceptionally Unlikely to be below (<1%)				
		SBW 6R	Unknown				
Deemed value rates and charges							
Stock	Interim	Annual	Differential	2014/15 Actual			
SBW1	\$0.41 per kg	\$0.465 per kg	\$0.552 @ 120-140% \$0.644 @ 140-160% \$0.736 @ 160-180% \$0.828 @ 180-200% \$0.92 @ > 200%	\$18,000			
SBW 6A SBW 6B SBW 6I SBW 6R	\$0.41 per kg	\$0.46 per kg	\$0.60 @ 102-150% \$0.92 @ >150%	\$6 0 0 0			

²⁷ Totals are for the 2014/15 April fishing year (1 April 2014 – 31 March 2015).

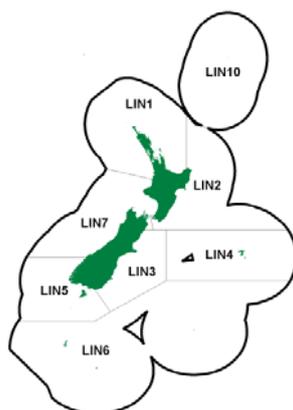
²⁸ 2015/16 landings are based on preliminary landings information from the 1 April 2015 – 30 March 2016 fishing year.

²⁹ The TAC for the SBW6B stock was reduced to 3,000 tonnes for the 2015/16 April fishing year.

Environmental indicators and observer coverage ³⁰			
Observer coverage		2013/14: 99.9% tows observed	2014/15: 99.8% tows observed
Seabirds		2013/14: 19 observed captures, 19 estimated	2014/15: 25 observed captures
Marine mammals	NZ fur seals	2013/14: 95 observed captures; 96 estimated	2014/15: 41 observed captures
	NZ sea lion	2013/14: 2 observed captures	2014/15: 6 observed captures
Benthic interactions (fishable area trawled)		2010/11: 1,422 (0.10%)	1989/90 – 2010/11: 19,531 km ² (1.38%)
Economic indicators (calendar year)			
Quota value 2009		\$74.3m	
Export earnings 2014		\$25.6m	

³⁰ Information on environmental actions is provided by October fishing year e.g. 2014-15 covers 1 October 2014 – 30 September 2015. This effectively includes all captures in the 2015-16 April fishing year.

LIN: Ling (Tier 1)



2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
LIN 2	673	N/A	982	N/A	N/A	N/A
LIN 3	1,325	2,060	2,060	0	0	0
LIN 4	2,244	4,200	4,200	0	0	0
LIN 5	3,924	4,036	3,955	1	1	36
LIN 6	3,114	8,590	8,505	0	0	85
LIN 7	3,343	3,144	3,080	1	1	25
Reference points and Current status						
Target	40% B ₀	LIN 2	Unknown			
		LIN 3&4	B ₂₀₁₄ : 57% B ₀	Very Likely (>90%) to be at or above		
		LIN 5&6	B ₂₀₁₄ : 70-101% B ₀	Virtually Certain (>99%) to be at or above		
		LIN 6B	B ₂₀₀₆ : 61% B ₀	Very Likely (>90%) to be at or above		
		LIN7WC	B ₂₀₁₂ : 71% B ₀	Very Likely (>90%) to be at or above		
		LIN CS	B ₂₀₁₀ : 54% B ₀	Likely (>60%) to be at or above		
Soft limit	20%B ₀	LIN 2	Unlikely (<40%) to be below			
		LIN 3&4	Exceptionally Unlikely (<1%) to be below			
		LIN 5&6	Exceptionally Unlikely (<1%) to be below			
		LIN 6B	Very Unlikely (<10%) to be below			
		LIN7WC	Exceptionally Unlikely (<1%) to be below			
		LIN CS	Exceptionally Unlikely (<1%) to be below			
Hard limit	10%B ₀	LIN 2	Very Unlikely (<10%) to be below			
		LIN 3&4	Exceptionally Unlikely (<1%) to be below			
		LIN 5&6	Exceptionally Unlikely (<1%) to be below			
		LIN 6B	Exceptionally Unlikely (<1%) to be below			
		LIN7WC	Exceptionally Unlikely (<1%) to be below			
		LIN CS	Exceptionally Unlikely (<1%) to be below			
Deemed value rates and charges (per kg)						
Stock	Interim	100-102%	102-120%	Annual 120%+	2014/15 Actual	
LIN 2					0	
LIN 3					\$80	
LIN 4					0	
LIN 5	\$1.20	\$2.38	\$3.40	\$6.00	\$500	
LIN 6					0	
LIN 7					\$836,000	

Environmental indicators and observer coverage			
Observer coverage		Trawl – 2013/14: 10.4 % tows observed	Trawl – 2014/15: 15.2% tows observed
		Longline – 2013/14: 9.1 % hooks observed	Longline – 2014/15: 2.8% hooks observed
Seabirds	Trawl	2013/14: 12 observed captures, 57 estimated	2014/15: 2 observed captures
	Longline	2013/14: 36 observed captures, 798 estimated	2014/15: 13 observed captures
Marine mammals (trawl)	NZ fur seal	2013/14: 0 observed captures	2014/15: 1 observed capture
	NZ sea lion	2013/14: 0 observed captures	2014/15: 0 observed capture
Benthic interactions (fishable area trawled)		2010/11: 492 km ² (0.02%)	1989/90 – 2010/11: 13,978 km ² (0.53%)
Economic indicators (calendar year)			
Quota value 2009		\$246.2m	
Export earnings 2014		\$48.3m	

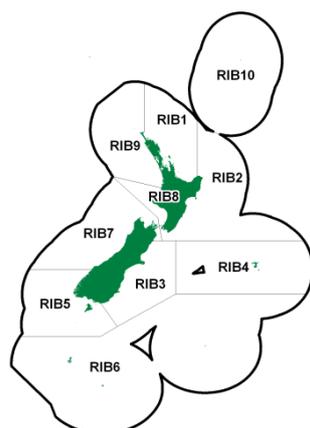
PTO: Patagonian toothfish (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
PTO 1	36	50	49.5	0	0	0.5
Reference points and Current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	Unknown				
Soft Limit	20% B ₀	Unknown				
Hard Limit	10% B ₀	Unknown				
Deemed value rates and charges						
Stock	Interim	Annual 100-110%	Annual 110% +	2014/15 Actual		
PTO 1	\$13.50 per kg	\$15.00 per kg	\$25.00 per kg	0		
Economic indicators (calendar year)						
Quota value 2009		\$N/A				
Export earnings 2014		\$7.0m ³¹				

³¹ All revenue generated by Patagonian toothfish was likely taken in other jurisdictions but landed in New Zealand.

RIB: Ribaldo (Tier 2)



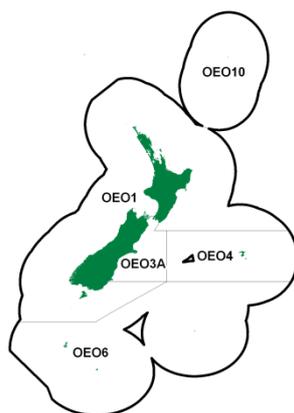
2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
RIB 3	122	394	394	0	0	0		
RIB 4	341	357	357	0	0	0		
RIB 5	47	52	52	0	0	0		
RIB 6	83	231	231	0	0	0		
RIB 7	434	330	330	0	0	0		
RIB 8	1	1	1	0	0	0		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	RIB 7 & 8	Unknown					
		RIB 3 & 4	Unknown					
		RIB 5 & 6	Unknown					
Soft Limit	20% B ₀	RIB1, 2, 7, 8, 9	Unknown					
		RIB 3 & 4	Unlikely to be below soft limit (<40%)					
		RIB 5 & 6	Unlikely to be below soft limit (<40%)					
Hard Limit	10% B ₀	RIB1, 2, 7, 8, 9	Unknown					
		RIB 3 & 4	Unlikely to be below hard limit (<40%)					
		RIB 5 & 6	Unlikely to be below hard limit (<40%)					
Deemed value rates and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
RIB 3 RIB 4 RIB 5 RIB 8	\$0.15	\$0.30	\$0.36	\$0.42	\$0.48	\$0.54	\$0.60	\$8 0 0 \$305
RIB 6	\$0.40	\$0.80	\$0.96	\$1.12	\$1.28	\$1.44	\$1.60	0
RIB 7	\$0.40	100-110% \$0.80	110-120% \$1.20	120%+ \$2.50				\$131,000
Economic indicators (calendar year)								
Quota value 2009		\$2.7m						
Export earnings 2014		No export information specific to ribaldo is currently available						

Hake (Tier 1)



2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
HAK 1	1,724	N/A	3,701	N/A	N/A	N/A		
HAK 4	304	1,818	1,800	0	0	18		
HAK 7	6,219	7,777	7,700	0	0	77		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	HAK Sub-Ant	B ₂₀₁₄ : 60%B ₀	Very Likely (>90%) to be at or above				
		HAK CR	B ₂₀₁₂ : 47%B ₀	Likely (>60%) to be at or above				
		HAK 7	B ₂₀₁₂ : 58% B ₀	Very Likely (>90%) to be at or above				
Soft limit	20% B ₀	HAK Sub-Antarctic		Exceptionally Unlikely (<1%) to be below				
		HAK Chatham Rise		Exceptionally Unlikely (<1%) to be below				
		HAK 7		Very Unlikely (<10%) to be below				
Hard limit	10% B ₀	HAK 1		Exceptionally Unlikely (<1%) to be below				
		HAK 4		Exceptionally Unlikely (<1%) to be below				
		HAK 7		Exceptionally Unlikely (<1%) to be below				
Deemed value rates and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
HAK 1 HAK 4 HAK 7	\$0.80	\$1.60	\$1.92	\$2.24	2.56	2.88	3.20	0 \$300 \$
Environmental indicators and observer coverage								
Observer coverage		2013/14: 73.3% tows observed				2014/15: 82.1% tows observed		
Seabirds		2013/14: 7 observed captures; 10 estimated				2014/15: 5 observed captures		
Marine mammals	NZ fur seal	2013/14: 6 observed captures; 9 estimated				2014/15: 9 observed captures		
	NZ sea lion	2013/14: 0 observed captures; 0 estimated				2014/15: 0 observed captures		
Benthic interactions (fishable area trawled)		2010/11: 1,223 km ² (0.09%)				1989/90 – 2010/11: 17,976 km ² (1.27%)		
Economic indicators (calendar year)								
Quota value 2009		\$135.5m						
Export earnings 2014		\$16.1m						

Oreos (Tier 1)



2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
OEO 1	277	2,500	2,500	0	0	0		
OEO 3A	3,352	3,518	3,350	0	0	168		
OEO 4	7,274	7,000	7,000	0	0	0		
OEO 6	156	N/A	6,000	N/A	N/A	N/A		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	OEO 1	B ₂₀₀₇ : 27% B ₀	Smooth oreo – Southland. Unlikely (<40%) to be above				
		OEO 3A	B ₂₀₀₉ : 36% B ₀	Black oreo: Unknown				
				Smooth oreo: About As Likely As Not (40-60%) to be at or above				
		OEO 4	B ₂₀₁₃ : 27% B ₀	Black oreo: Unknown				
				Smooth oreo: Very Unlikely (<10%) to be above				
		OEO 6	B ₂₀₀₈ : 33% B ₀	Smooth oreo – Pukaki Rise. Unknown				
Smooth oreo – Bounty Plateau. Unlikely (<40%) to be at or above								
Soft Limit	20% B ₀	OEO 1	Smooth oreo – Southland. Unlikely (<40%) to be below					
		OEO 3A	Black oreo: Unknown					
			Smooth oreo: Unlikely (<40%) to be below					
		OEO 4	Black oreo: Unknown					
			Smooth oreo: Unlikely (<40%) to be below					
		OEO 6	Smooth oreo – Pukaki Rise. Unknown					
Smooth oreo – Bounty Plateau. Unlikely (<40%) to be below								
Hard Limit	10% B ₀	OEO 1	Smooth oreo – Southland. Very Unlikely (<10%) to be below					
		OEO 3A	Black oreo: Unknown					
			Smooth oreo: Very Unlikely (<10%) to be below					
		OEO 4	Black oreo: Unknown					
			Smooth oreo: Very Unlikely (<10%) to be below					
		OEO 6	Smooth oreo – Pukaki Rise. Unknown					
Smooth oreo – Bounty Plateau. Very Unlikely (<10%) to be below								
Deemed value rates and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
OEO 1								0
OEO 4	\$0.39	\$0.78	\$0.936	\$1.092	\$1.248	\$1.404	\$1.56	\$61,000
OEO 6								0
OEO 3A	\$0.38	\$0.76	\$0.912	\$1.064	\$1.216	\$1.368	\$1.52	0

Environmental indicators and observer coverage			
Observer coverage		2013/14: 20.3% tows observed	2014/15: 17.3% tows observed
Seabirds		2013/14: 2 observed captures	2014/15: 0 observed captures
Marine mammals	NZ fur seal	2013/14: 0 observed captures	2014/15: 0 observed captures
	NZ sea lion	2013/14: 0 observed captures	2014/15: 0 observed captures
Benthic interactions (fishable area trawled)		2010/11: 801 km ² (0.06%)	1989/90 – 2010/11: 16,328 km ² (1.13%)
Economic indicators (calendar year)			
Quota value 2009		\$74.4m	
Export earnings 2014		Black oreo - \$2.7m Smooth oreo - \$3.7m Oreo, other - \$8.5m (this category clearly includes black and/or smooth oreo that has not been reported by individual species)	

Catch split

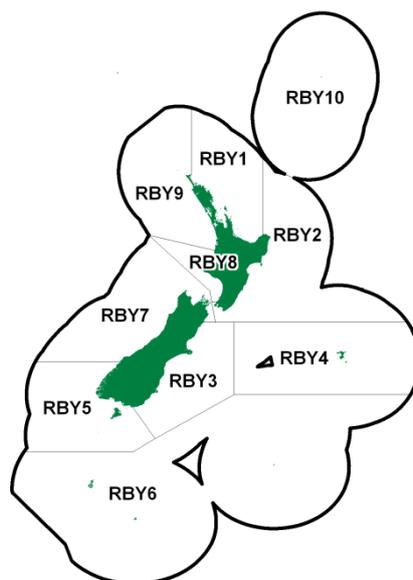
OEO 1

Area	Catch limit for 2014/15 (t)	Sum of catch reported to DWG (t)	Sum of catch reported on TCEPRs/MHRs
Southland (<i>smooth oreo only</i>)	400	51	43
Southland (<i>black oreo only</i>)	N/A	116	129
OEO1 excluding Southland (<i>all species</i>)	N/A	N/a	94
OEO1 (<i>all species</i>)	2,500	277 (MHR)	

OEO3A

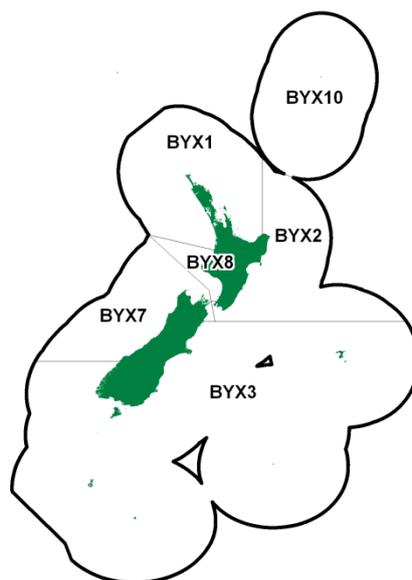
Species	Catch limit (t)	Sum of catch reported on CLRs (t)
Black oreo	1,700	1,803
Smooth oreo	1,650	1,537
<i>Totals</i>	<i>3,350</i>	<i>3,340 (3,352 tonnes including spiky oreo)</i>

RBY: Rubyfish (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
RBY 1	132	318	300	1	2	15		
RBY 2	270	435	433	1	1	0		
RBY 3	14	3	3	0	0	0		
RBY 4	22	19	18	0	0	1		
RBY 5	<1	0	0	0	0	0		
RBY 6	<1	0	0	0	0	-		
RBY 7	4	33	33	0	0	-		
RBY 8	<1	6	6	0	0	0		
RBY 9	1	19	19	0	0	-		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	Unknown						
Soft Limit	20% B ₀	Unknown						
Hard Limit	10% B ₀	Unknown						
Deemed value rates and charges (per kg)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
RBY 1	\$0.14	\$0.28	\$0.336	\$0.392	\$0.448	\$0.504	\$0.56	\$30
RBY 4	\$0.21	\$0.42	\$0.504	\$0.588	\$0.672	\$0.756	\$0.84	\$1,700
RBY 2 RBY 5 RBY 6 RBY 9	\$0.11	>100% \$0.21						0 \$1 \$1 0
RBY 3	\$0.10	>100% \$0.19						\$2,100
RBY 7 RBY 8	\$0.21	>100% \$0.42						0 0
Economic indicators (calendar year)								
Quota value 2009		\$N/A						
Export earnings 2014		Rubyfish is not listed as an individual species in export statistics						

BYX: Alfonsino (Tier 2)



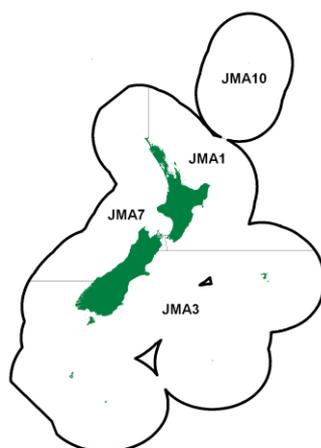
2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
BYX 1	53	304	300	2	2	31.3
BYX 2	1,617	-	1,575	-	-	-
BYX 3	997	-	1,010	-	-	-
BYX 7	26	-	81	-	-	-
BYX 8	<1	-	20	-	-	-

Reference points and Current status (as per Harvest Strategy Standard defaults)			
Target	B _{MSY} (30-50% B ₀)	BYX1 B ₂₀₁₀	Likely (>60%) to be at or above B _{MSY}
	40% B ₀	All other stocks	Unknown
Soft Limit	20% B ₀	BYX1	Very Unlikely (<10%) to be below
		All other stocks	Unknown
Hard Limit	10% B ₀	BYX1	Very Unlikely (<10%) to be below
		All other stocks	Unknown

Deemed value rates and charges (per kg)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
BYX 1	\$1.98	\$2.20	\$2.64	\$3.08	\$3.52	\$3.96	\$4.40	\$86
BYX 3								\$3,600
BYX 7								0
BYX 8								0
Stock		100-110%	110-130%	130-150%	150-170%	170-190%	190%+	2014/15 Actual
BYX 2		\$2.20	\$2.64	\$3.08	\$3.52	\$3.96	\$4.40	\$1,476

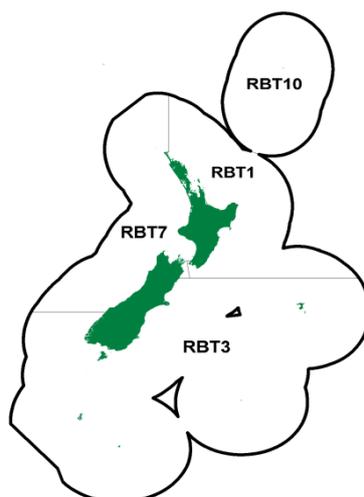
Economic indicators (calendar year)	
Quota value 2009	\$N/A
Export earnings 2014	\$9.0m (includes catch taken outside the EEZ)

Jack Mackerel (Tier 1)



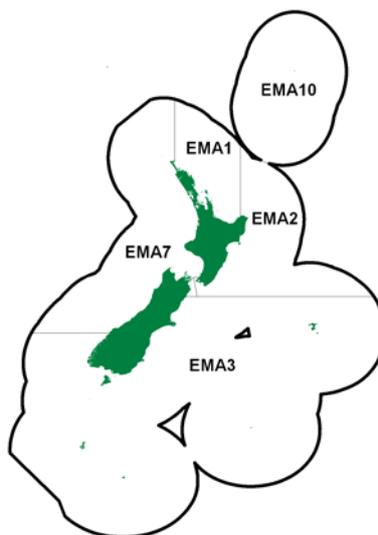
2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational			Customary	
JMA 3	4,115	NA	18,000	NA			NA	
JMA 7	33,970	NA	32,537	NA			NA	
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	JMA 3	Unknown					
		JMA 7	Unknown					
Soft Limit	20% B ₀	JMA 3	Unknown					
		JMA 7	Unknown					
Hard Limit	10% B ₀	JMA 3	Unknown					
		JMA 7	Unknown					
Deemed value rates and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
JMA 3	\$0.08	\$0.09	\$0.108	\$0.126	\$0.144	\$0.162	\$0.18	0
JMA 7	\$0.08	\$0.15	\$0.18	\$0.21	\$0.24	\$0.27	\$0.30	\$110,000
Environmental indicators and observer coverage								
Observer coverage		2013/14: 89.4% tows observed				2014/15: 88.1% tows observed		
Seabirds		2013/14: 8 observed captures; 10 estimated				2014/15: 20 observed captures		
Marine mammals	NZ fur seal	2013/14: 10 observed captures; 11 estimated				2014/15: 6 observed captures		
	Common dolphin	2013/14: 28 observed captures; 29 estimated				2014/15: 20 observed captures		
Benthic interactions (fishable area trawled)		2010/11: 3,700 km ² (0.14%)				1989/90 – 2010/11: 42,678 km ² (3.03%)		
Economic indicators (calendar year)								
Quota value 2009		\$53.6m (for all stocks)						
Export earnings 2014		\$71.1m (for all stocks)						

RBT: Redbait (Tier 2)



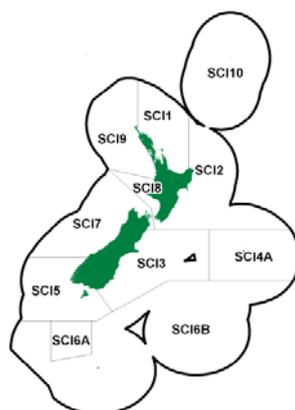
2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
RBT 1	4	20	19	0	0	1		
RBT 3	2,020	2,305	2,190	0	0	115		
RBT 7	132	2,991	2,841	0	0	150		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	Unknown						
Soft Limit	20% B ₀	Unknown						
Hard Limit	10% B ₀	Unknown						
Deemed value rates and charges (per kg)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
RBT 1								\$1
RBT 3	\$0.25	\$0.50	\$0.60	\$0.70	\$0.80	\$0.90	\$1.00	0
RBT 7								0
Economic indicators (calendar year)								
Quota value 2009	\$N/A							
Export earnings 2014	Redbait does not feature as an individual species in export statistics							

EMA: English mackerel (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
EMA 3	87	392	390	1	1	0		
EMA 7	892	3,352	3,350	1	1	0		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	Unknown						
Soft Limit	20% B ₀	Unknown						
Hard Limit	10% B ₀	Unknown						
Deemed value rates and charges (per kg)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
EMA 3	\$0.13	\$0.26	\$0.312	\$0.364	\$0.416	\$0.468	\$0.52	0
EMA 7								0
Economic indicators (calendar year)								
Quota value 2009		\$N/A						
Export earnings 2014		\$7.4m (includes all stocks)						

SCI: Scampi (Tier 1)

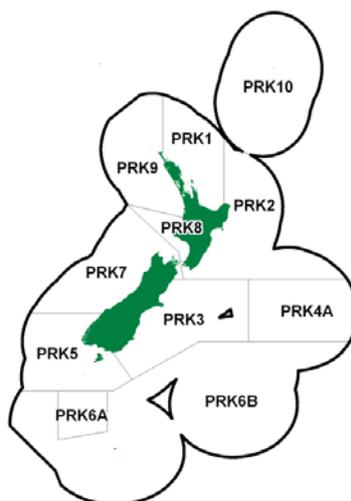


2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other Mortality		
SCI 1	117	126	120	0	0	6		
SCI 2	143	140	133	0	0	7		
SCI 3	374	357	340	0	0	17		
SCI 4A	131	126	120	0	0	6		
SCI 5	<1	42	40	0	0	2		
SCI 6A	<1	321	306	0	0	15		
SCI 6B	<1	53	50	0	0	3		
SCI 7	9	79	75	0	0	4		
SCI 8	0	5	5	0	0	0		
SCI 9	<1	37	35	0	0	2		
Reference Points and Current status (as per Harvest Strategy Standard defaults)								
Metric			Status					
Target	40% B ₀	SCI 1	B ₂₀₁₁ : Likely (> 60%) to be at or above					
		SCI 2	B ₂₀₁₂ : Very likely (> 90%) to be at or above					
		SCI 3	B ₂₀₁₄ : 54% or 60% B ₀ . Very Likely (>90%) to be at or above					
		SCI 6A ³²	Unknown					
Soft Limit	20% B ₀	SCI 1	Very Unlikely (<10%) to be below					
		SCI 2						
		SCI 3						
		SCI 6A	Unknown					
Hard Limit	10% B ₀	SCI 1	Very Unlikely (< 10%) to be below					
		SCI 2	Exceptionally Unlikely (<1%) to be below					
		SCI 3	Very Unlikely (< 10%) to be below					
		SCI 6A	Unknown					
Deemed value rates and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
SCI 1								0
SCI 2								0
SCI 3								0
SCI 4A								0
SCI 5	\$25.65	\$51.30	\$61.56	\$71.82	\$82.08	\$92.34	\$102.60	0
SCI 6A								0
SCI 6B								0
SCI 7								0

³² The other major scampi stock (SCI 4A) has never been assessed

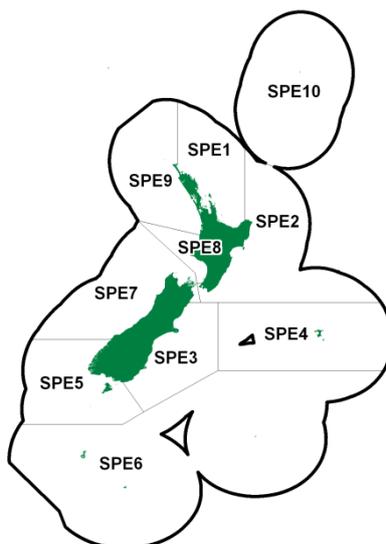
SCI 8								0
SCI9								0
Environmental indicators and observer coverage								
Observer coverage		2013/14: 5.7% tows observed				2014/15: 7.9% tows observed		
Seabirds		2013/14: 26 observed captures; 194 estimated				2014/15: 16 observed captures		
Marine mammals	NZ fur seal	2013/14: 1 observed capture; 6 estimated				2014/15: 1 observed capture		
	NZ sea lion	2013/14: 0 observed captures; 5 estimated				2014/15: 0 observed captures		
Benthic interactions (fishable area trawled)		2010/11: 5,029 km ² (0.36%)				1989/90 – 2010/11: 19,285 km ² (1.34%)		
Economic Indicators (calendar year)								
Quota value 2009		\$132.3m						
Export earnings 2014		\$15.2m (based on the "shrimps and prawns cold-water" category)						

PRK: Prawn killer (Tier 2)



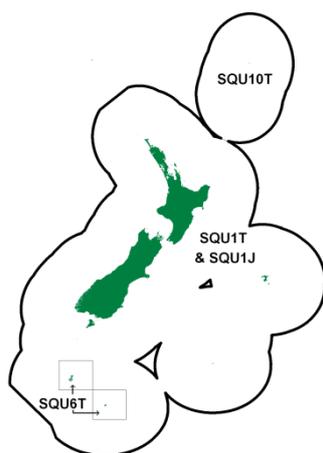
2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
PRK 1	0	25.7	24.5	0	0	1.2
PRK 2	<1	3.7	3.5	0	0	0.2
PRK 3	<1	1	1	0	0	0
PRK 4A	0	1	1	0	0	0
PRK 5	0	1	1	0	0	0
PRK 6A	0	1	1	0	0	0
PRK 6B	0	1	1	0	0	0
PRK 7	1	1	1	0	0	0
PRK 8	<1	1	1	0	0	0
PRK 9	0	1	1	0	0	0
Reference points and Current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	Unknown				
Soft Limit	20% B ₀	Unknown				
Hard Limit	10% B ₀	Unknown				
Deemed value rates and charges (per kg)						
Stock	Interim	100%+	2014/15 Actual			
PRK 1			0			
PRK 2			0			
PRK 3			0			
PRK 4A			0			
PRK 5	\$0.10	\$0.20	0			
PRK 6A			0			
PRK 6B			0			
PRK 7			\$11			
PRK 8			0			
PRK 9			0			
Economic indicators (calendar year)						
Quota value 2009		\$N/A				
Export earnings 2014		Prawn killer does not feature as an individual species in export statistics				

SPE: Sea perch (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
SPE 3	734	1,022	1,000	11	11	-		
SPE 4	475	956	910	0	0	46		
SPE 5	13	38	36	1	1	-		
SPE 6	2	9	9	0	0	-		
SPE 7	118	98	82	8	8	-		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀		Unknown					
Soft Limit	20% B ₀		Unknown					
Hard Limit	10% B ₀		Unknown					
Deemed value rates and charges (per kg)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
SPE 3 SPE 7	\$0.50	\$0.55	\$0.66	\$0.77	\$0.88	\$0.99	\$1.10	\$30 \$30,000
SPE 4 SPE 5 SPE 6	\$0.36	\$0.40	\$0.48	\$0.56	\$0.64	\$0.72	\$0.80	0 0 0
Economic indicators (calendar year)								
Quota value 2009		\$N/A						
Export earnings 2014		\$1.3m (includes all stocks)						

Squid (Tier 1)



2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
SQU 1J	515	N/A	50,212	N/A	N/A	N/A		
SQU 1T	9,668	44,741	44,741	0	0	0		
SQU 6T	6,127	N/A	32,369	N/A	N/A	N/A		
Reference points and Current status								
Arrow squid live for one year, spawn once then die. To date, there has been no method to estimate biomass of arrow squid. Evaluation of depletion modelling was undertaken during 2015 but will not be trialled during 2016.								
Deemed value rates (per kg) and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
SQU 1J								0
SQU 1T	\$0.44	\$0.88	\$1.056	\$1.232	\$1.408	\$1.584	\$1.76	\$10
SQU 6T								\$54
Environmental indicators and observer coverage								
Observer coverage		2013/14: 87.1% tows observed				2014/15: 87.6% tows observed		
Seabirds	2013/14: 203 observed captures (trawl); 236 estimated				2014/15: 393 observed captures (trawl)			
	2013/14: 2 observed captures (jig)				2014/15: 30 observed captures (jig)			
Marine mammals	NZ fur seals	2013/14: 10 observed captures; 11 estimated				2014/15: 17 observed captures		
	NZ sea lion	2013/14: 2 observed captures; 2 estimated				2014/15: 2 observed captures		
Benthic interactions (fishable area trawled)		2010/11: 5,244 km ² (0.37%)				1989/90 – 2010/11: 37,827 km ² (2.65%)		
Economic indicators (calendar years)								
Quota value 2009		\$116.5m						
Export earnings 2014		\$43.1m						

Southern squid trawl fishery (SQU6T) Operational Plan 2014/15

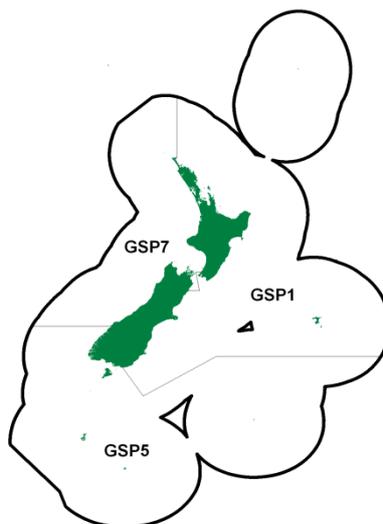
FRML	Completed tows from weekly reports*	Tows reported on TCEPR	% of tows observed	Observed sea lion captures	Estimated captures	% of FRML reached
68	616	631	88%	1	7	10%

Barracouta (Tier 2)



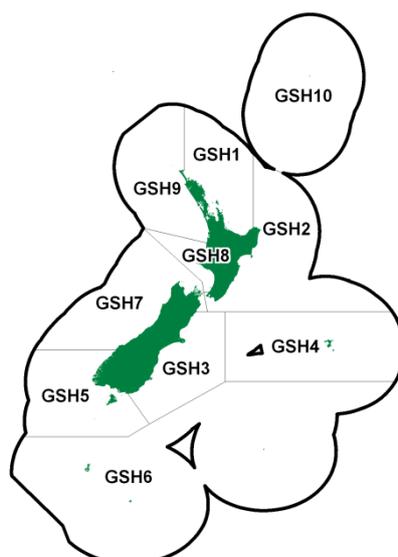
2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
BAR 4	3,672	N/A	3,019	N/A	N/A	N/A		
BAR 5	6,778	7,475	7,470	3	2	0		
BAR 7	6,974	N/A	11,173	N/A	N/A	N/A		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	BAR 4	Unknown					
		BAR 5	Unknown					
		BAR 7	Unknown					
Soft Limit	20% B ₀	BAR 4	Unknown					
		BAR 5	Unknown					
		BAR 7	Unknown					
Hard Limit	10% B ₀	BAR 4	Unknown					
		BAR 5	Unknown					
		BAR 7	Unknown					
Deemed value rates (per kg) and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
BAR 7	\$0.12	\$0.24	\$0.288	\$0.336	\$0.384	\$0.432	\$0.48	\$1
Stock	Interim	100-110%		110-120%		120%+		2014/15 Actual
BAR 4 BAR 5	\$0.12	\$0.25		\$0.50		\$1.00		\$113,000 0
Environmental indicators and observer coverage								
Observer coverage	2013/14: 25.3% tows observed				2014/15: 34.6% tows observed			
Seabirds	2013/14: 13 observed captures				2014/15: 27 observed captures			
Fur seals	2013/14: 3 observed captures; 27 estimated				2014/15: 4 observed captures			
Benthic impacts (fishable area trawled)	2010/11: 2,046 km ² (0.15%)				1989/90 – 2010/11: 47,558 km ² (3.38%)			
Economic indicators (calendar years)								
Quota value 2009	\$116.5m							
Export earnings 2014	\$22.0m							

GSP: Pale ghost shark (Tier 2)



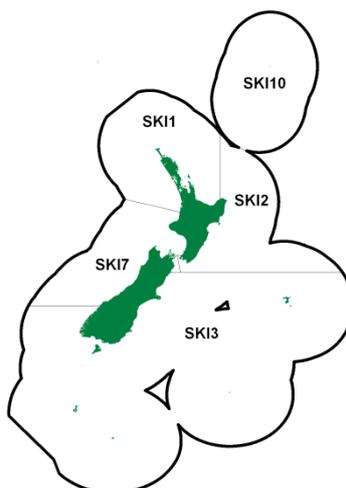
2014/15 Landings, Catch limits and Allowances (tonnes)						
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality
GSP 1	476	1,208	1,150	0	0	58
GSP 5	231	477	454	0	0	23
GSP 7	38	176	176	0	0	-
Reference points and Current status (as per Harvest Strategy Standard defaults)						
Target	40% B ₀	Unknown				
Soft Limit	20% B ₀	GSP1, GSP5			Unlikely (<40%) to be below	
		GSP7			Unknown	
Hard Limit	10% B ₀	GSP1, GSP5			Very Unlikely (<10%) to be below	
		GSP7			Unknown	
Deemed value rates and charges (per kg)						
Stock	Interim	100%+				2014/15 Actual
GSP 1	\$0.08	\$0.15				0
GSP 5						0
GSP 7	\$0.17	\$0.34				0
Economic indicators (calendar year)						
Quota value 2009		\$N/A				
Export earnings 2014		\$1.5m (includes both pale and dark ghost shark, Export statistics are not provided for individual ghost shark species)				

GSH: Dark ghost shark (Tier 2)



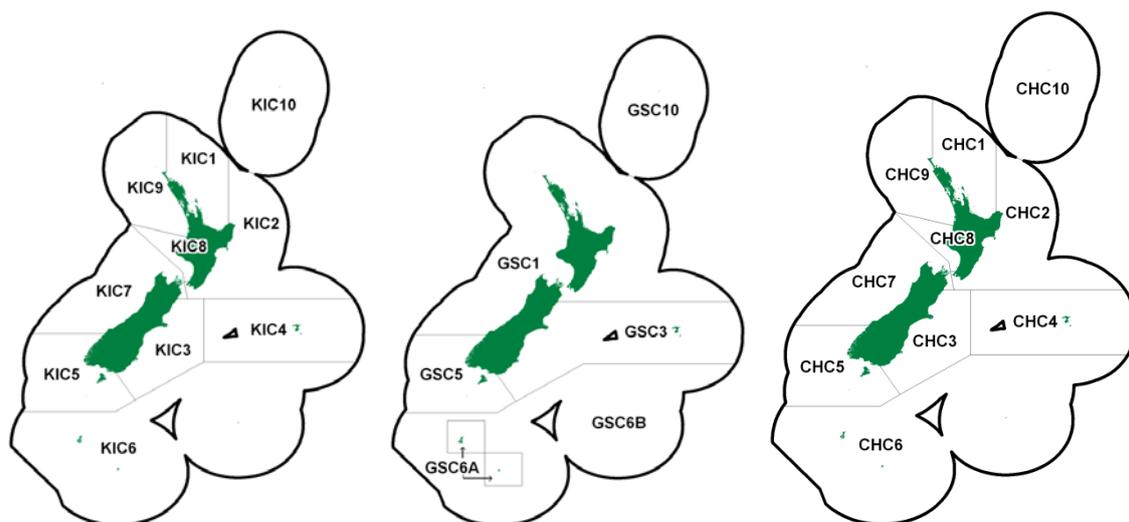
2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
GSH 4	217	370	370	0	0	-		
GSH 5	54	109	109	0	0	-		
GSH 6	72	95	95	0	0	-		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	Unknown						
Soft Limit	20% B ₀	Unknown						
Hard Limit	10% B ₀	Unknown						
Deemed value rates and charges (per kg)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
GSH 4								\$140
GSH 5	\$0.36	\$0.40	\$0.48	\$0.56	\$0.64	\$0.72	\$0.80	0
GSH 6								0
Economic indicators (calendar year)								
Quota value 2009	\$N/A							
Export earnings 2014	\$1.5m (includes both pale and dark ghost shark, Export statistics are not provided for individual ghost shark species)							

SKI: Gemfish (Tier 2)



2014/15 Landings, Catch limits and Allowances (tonnes)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
SKI 3	21	300	300.4	-	-	-		
SKI 7	231	300	300	-	-	-		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀		Unknown					
Soft Limit	20% B ₀		Unknown					
Hard Limit	10% B ₀		Unknown					
Deemed value rates and charges (per kg)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
SKI 3	\$0.65	\$1.29	\$1.548	\$1.806	\$2.064	\$2.322	\$2.58	0
SKI 7								\$520
Economic indicators (calendar year)								
Quota value 2009			\$N/A					
Export earnings 2014			\$1.2m (includes all stocks)					

KIC/GSC/CHC: Deepwater crab species (Tier 2)



2014/15 Landings, Catch limits and Allowances ³³ (tonnes) (only shown for stocks where catches > 0.1 t were taken)								
Stock	2014/15 Landings	TAC	TACC	Recreational	Customary	Other fishing related mortality		
KIC 2 (incl. 2E) ³⁴	10.7	10	10	0	0	0		
KIC 3	0.1	10	10	0	0	0		
KIC 6	0.5	10	10	0	0	0		
GSC 3	13.6	15	14	0	0	1		
GSC 5	80.3	20	19	0	0	1		
GSC 6A	127.8	165	148	0	0	17		
GSC 6B	1.9	250	237	0	0	13		
CHC 2	0.1	10	10	0	0	0		
Reference points and Current status (as per Harvest Strategy Standard defaults)								
Target	40% B ₀	Unknown						
Soft Limit	20% B ₀	Unknown						
Hard Limit	10% B ₀	Unknown						
Deemed value rates and charges (per kg) (only shown where deemed values were accrued)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2014/15 Actual
GSC 5								\$203,000
GSC 6A	\$1.62	\$1.80	\$2.16	\$2.52	\$2.88	\$3.24	\$3.60	\$1,000
GSC 6B								\$140
Economic indicators (calendar year)								
Quota value 2009		\$N/A						
Export earnings 2014		\$0.4m (reported as 'crabs')						

³³ All catch information is based on the April fishing year (1 April 2014 – 31 March 2015)

³⁴ A special permit relating to research on this stock provides for some catch to be taken above the TACC

Appendix II: Results of 2014/15 Sustainability rounds

TAC reviews

Species	Stock	Pre-1 Oct 2014 TAC	Pre-1 Oct 2014 TACC	1 Oct 2014 TAC	1 Oct 2014 TACC
Hoki	HOK 1	151,540	150,000	161,640	160,000
Orange roughy	ORH 3B	4,725	4,500	5,250	5,000
	ORH 2A	919	875	512	488
	ORH 2B	147	140	63	60
	ORH 3A	436	415	186	177
	ORH 7A	525	500	1,680	1,600
			Pre-1 April 2015 TAC	Pre-1 April 2015 TACC	1 April 2015 TAC
Southern blue whiting	SBW 6B	7,000	6,860	3,000	2,940

Deemed value rate changes

		Pre-1 October 2014			From 1 October 2014		
Species	Stock	Interim (\$/kg)	Annual (\$/kg)	Differential (\$/kg, >200% of ACE holding) ³⁵	Interim (\$/kg)	Annual (\$/kg)	Differential (\$/kg, >110% of ACE holding)
Orange roughy	ORH7A	1.60	3.20	6.40	2.50	5.00	6.25

		Pre-1 April 2015			From 1 April 2015		
Species	Stock	Interim (\$/kg)	Annual (\$/kg)	Differential (\$/kg, >200% of ACE holding) ³⁶	Interim (\$/kg)	Annual (\$/kg)	Differential (\$/kg, >200% of ACE holding)
Giant spider crab	All stocks	1.62	1.80	3.60	0.09	0.10	0.20

³⁵ The standard schedule of differential deemed value rates applied to this stock prior to 1 October 2014

³⁶ The standard schedule of differential deemed value rates applied to this stock before and after 1 April 2015

Appendix III: Landings of Tier 3 species from core deepwater fleet 2010/11 to 2014/15 (in kg)

Species code	Common name	Scientific name	2010/11	2011/12	2012/13	2013/14	2014/15
JAV	Javelinfish	<i>Lepidorhynchus denticulatus</i>	3999681	3297768	4070825	3922453	4233558
RAT	Rattails	<i>Macrouridae</i> spp.	3192849	3243432	4046886	3378020	3681747
STU	Slender tuna	<i>Allothunnus fallai</i>	108476	74076	262048	582089	234630
ETB	Baxter's lantern dogfish	<i>Etmopterus baxteri</i>	47157	30218	40531	299975	289706
SND	Shovelnose dogfish	<i>Deania calcea</i>	126803	97137	134641	283168	250659
OSD	Other sharks and dogfish	Order Selachii	580440	656006	545641	225817	189100
SDO	Silver dory	<i>Cyttus novaezealandiae</i>	194102	189183	127275	224542	230741
NCB	Smooth red swimming crab	<i>Nectocarcinus bennetti</i>	586358	203438	717355	168810	185908
BSH	Seal shark	<i>Dalatias licha</i>	142558	145298	197890	128003	86591
LCH	Long-nosed chimaera	<i>Harriotta raleighana</i>	95437	99080	113008	123384	110550
SSI	Silverside	<i>Argentina elongate</i>	144449	164095	104586	97536	123038
CSQ	Leafscale gulper shark	<i>Centrophorus squamosus</i>	13756	8968	29928	95793	122870
WSQ	Warty squid	<i>Onykia</i> spp.	78926	81447	95682	93082	88731
CON	Conger eel	Family Congridae	62687	37301	66009	91297	106921
FHD	Deepsea flathead	<i>Hoplichthys haswelli</i>	92243	84391	101772	77543	105271
SLK	Slickhead	<i>Alepocephalidae</i> spp.	39159	57635	43717	65231	106980
CDO	Capro dory	<i>Capromimus abbreviatus</i>	53762	45930	35445	60965	58345
DWD	Deepwater dogfish	N/A	97601	78218	34666	59177	68246
RUD	Rudderfish	<i>Centrolophus niger</i>	35536	32094	53448	54624	56702
SUN	Sunfish	<i>Mola mola</i>	15147	15431	12913	51112	19599
BEN	Scabbardfish	<i>Benthodesmus</i> spp.	23328	13773	18,316	49013	44419
SRH	Silver roughy	<i>Hoplostethus mediterraneus</i>	31531	23734	22203	48077	62776
BEL	Bellowsfish	<i>Centriscops</i> spp.	161999	80812	51324	45255	53040
HCO	Hairy conger	<i>Bassanago hirsutus</i>	70532	13815	47739	44559	62825
SFI	Starfish	N/A	60344	72810	46988	44432	47871
RHY	Common roughy	<i>Paratrachichthys trailli</i>	91762	153240	118775	41449	115953
CAR	Carpet shark	<i>Cephaloscyllium isabellum</i>	68184	42999	31879	40396	59859
HAG	Hagfish	<i>Eptatretus cirrhatous</i>	13513	2469	5154	39932	6709
CBE	Crested bellowsfish	<i>Notopogon lilliei</i>	2865	11290	16424	39301	36060
CYP	Longnose velvet dogfish	<i>Centroscymnus crepidater</i>	531	210	8198	37728	10282
MOD	Morids	<i>Moridae</i> spp.	19442	27109	27868	37066	62179

Species code	Common name	Scientific name	2010/11	2011/12	2012/13	2013/14	2014/15
CRB	Crab (unspecified)	N/A	81479	103281	72392	35050	36770
ALB	Albacore tuna	<i>Thunnus alalunga</i>	2238	2451	10922	34611	22283
POP	Porcupine fish	<i>Tragulichthys jaculiferus</i>	26232	40368	33259	32241	30885
THR	Thresher shark	<i>Alopias vulpinus</i>	15166	13593	16937	25080	30725
NSD	Northern spiny dogfish	<i>Squalus griffin</i>	21962	9755	19759	24561	49714
TOA	Toadfish	<i>Neophrynichthys</i> spp.	29866	23000	27894	24045	28421
ETL	Lucifer dogfish	<i>Etmopterus lucifer</i>	17393	24735	32202	20535	31899
JFI	Jellyfish (unspecified)	N/A	29594	16390	25113	19373	4084
UNI	Unidentified fish	N/A	2590	1669	6841	18982	2048
OPE	Orange perch	<i>Lepidoperca aurantia</i>	39133	66665	39072	18273	10489
BBE	Banded bellowsfish	<i>Centriscops humerosus</i>	63224	19663	31890	17157	38848
BCD	Black cod	<i>Paranotothenia magellanica</i>	22795	10858	1781	16966	9782
HJO	Johnson's cod	<i>Halargyreus johnsonii</i>	14825	9168	21014	16637	20140
PAH	Opah	<i>Lampris immaculatus</i>	3390	6878	19262	16509	9986
SCO	Swollenhead conger	<i>Bassanago bulbiceps</i>	1	178	15607	16043	8761
WIT	Witch	<i>Arnoglossus scapha</i>	26942	16394	16,618	14962	15353
DWE	Deepwater eel (unspecified)	N/A	11281	14119	9926	14778	16496
BEE	Basketwork eel	<i>Diastobranchus capensis</i>	18231	11808	13939	14341	12531
SAL	Salps	N/A	12	314	16337	12820	13553
OCT	Octopus	<i>Pinnoctopus cordiformis</i>	12480	14726	7747	12272	8796
ERA	Electric ray	<i>Torpedo fairchildi</i>	12225	12360	13935	11988	14589
GON	Sandfish	<i>Gonorynchus</i> spp.	17213	13739	17,853	9945	13406
SBK	Spineback	<i>Notacanthus seipinis</i>	7592	3679	6491	8176	19313
SSH	Slender smooth-hound	<i>Gollum attenuates</i>	8792	6992	27499	8036	20194
SCG	Scaly gurnard	<i>Lepidotrigla brachyoptera</i>	13297	19752	14060	7805	13797
PIG	Pigfish	<i>Congiopodus leucopaecilus</i>	46389	13269	23132	7453	7443
PLS	Plunket's shark	<i>Centroscymnus plunketi</i>	5071	169	3199	7075	8746
MDO	Mirror dory	<i>Zenopsis nebulosa</i>	9090	20207	47178	6799	8947
OSK	Skate, other	Family Rajidae	929	605	10337	6497	13195
YBO	Yellow boarfish	<i>Pentaceros decacanthus</i>	3077	1570	3631	6307	8133
ANT	Anemones	N/A	11669	10590	11300	5268	7499
OPI	Umbrella octopus	<i>Opisthoteuthis</i> spp.	2579	3176	4370	5030	8199
EPL	Cardinal fish, bigeye	<i>Epigonus lenimen</i>	4413	2114	6795	4784	5143
WHX	Unicorn rattail	<i>Trachyrincus</i> sp.	2754	3395	3905	4356	25646

Species code	Common name	Scientific name	2010/11	2011/12	2012/13	2013/14	2014/15
DWO	Deepwater octopus	<i>Graneledone</i> spp.	13513	6200	5271	4283	5473
URO	Sea urchin other (except SUR-Kina)	N/A	5568	4784	3570	4104	1802
VSQ	Violet squid	<i>Histioteuthis</i> spp.	3351	1531	2403	3943	3993
PDG	Prickly dogfish	<i>Oxynotus bruniensis</i>	7249	4030	4196	3725	5456
CHG	Purple chimaera	<i>Chimaera lignaria</i>	6356	688	13289	3246	1847
BSL	Black slickhead	<i>Xenodermichthys</i> spp.	2	376	649	3201	2575
SQX	Squid (unspecified)	N/A	2156	2054	4132	3137	1111
DEA	Dealfish	<i>Trachipterus trachipterus</i>	2473	5110	5163	2997	3285
HEX	Sixgill shark	<i>Hexanchus griseus</i>	2158	1916	4043	2525	4595
SBO	Southern boarfish	<i>Pseudopentaceros richardsoni</i>	21643	109319	897	2300	11035
LAN	Lanternfish	<i>Myctophidae</i> spp.	8491	2730	1322	2239	3359
MAN	Finless flounder	<i>Neoachirosetta milfordi</i>	484	454	2515	2184	1134
SEV	Broadnose sevengill shark	<i>Notorynchus cepedianus</i>	487	656	1749	2044	2225
YCO	Yellow cod	<i>Parapercis gilliesi</i>	3070	2588	2541	2032	1001
JGU	Japanese gurnard	<i>Pterygotrigla picta</i>	5226	3901	4130	2022	4220
TAM	Tam O'Shanter urchins	N/A	369	971	2174	1985	1479
EEL	Eels, Marine (unspecified)	N/A	803	615	574	1922	247
TSQ	Todarodes filippovae	<i>Todarodes filippovae</i>	2390	1978	1329	1866	5645
CHI	Chimaera spp.	<i>Chimaeras</i> pp.	10616	599	2171	1856	1255
TOP	Pale toadfish	<i>Neophrynichthys angustus</i>		2	400	1825	4053
SKJ	Skipjack tuna	<i>Katsuwonus pelamis</i>	8	3	165	1798	1933
SBR	Southern bastard cod	<i>Pseudophycis barbata</i>	896	642	1042	1657	2577
GSQ	Giant squid	<i>Architeuthis</i> sp.	2233	3184	1566	1652	1479
SNI	Snipefish	<i>Macroramphosus scolopax</i>	266	431	151	1558	89
HSI	Jack-knife prawn	<i>Halporoides sibogae</i>	12761	8888	1968	1540	376
WRA	Whiptail ray	<i>Dasyatis thetidis</i>	455	1114	1423	1274	1025
EGR	Eagle ray	<i>Myliobatis tenuicaudatus</i>	967	1629	1080	1087	625
OPA	Opalfish	<i>Hemerocoetes</i> spp.	5494	3638	4819	1084	11736
SCD	Smallscaled cod	<i>Paranotothenia microlepidota</i>	139	789	1756	1021	141
CYO	Smooth skin dogfish	<i>Centroscymnus owstoni</i>	1415	654	1475	1016	3373
CYL	Portuguese dogfish	<i>Centroscymnus coelolepis</i>	555		59	1010	3959
RDO	Rosy dory	<i>Cyttopsis rosea</i>	2267	1033	4526	964	64

Species code	Common name	Scientific name	2010/11	2011/12	2012/13	2013/14	2014/15
BSP	Big-scale pomfret	<i>Taractichthys longipinnis</i>	258	555	1551	960	1528
DSK	Deepwater spiny skate	<i>Amblyraja hyperborean</i>	12685	7637	8047	933	1793
BER	Electric ray	<i>Typhlonarke</i> spp.	2757	1776	13935	906	14589
PSK	Longnosed deepsea skate	<i>Bathyraja shuntovi</i>	360	575	762	768	495
OFH	Oilfish	<i>Ruvettus pretiosus</i>	442	534	907	699	554
LSK	Long-tailed skate	<i>Arhynchobatis asperimus</i>	973	588	654	650	196
BRZ	Brown stargazer	<i>Xenocerphalus armatus</i>	1003	1797	1464	634	159
CUC	Cucumber fish	<i>Chlorophthalmus nigripinnis</i>	20	218	65	561	2194
HEP	Sharprose sevengill shark	<i>Heptranchias perlo</i>	476	1762	966	501	902
RSQ	Ommastrephes bartrami	<i>Ommastrephes bartrami</i>	4317	755	120	500	80
VCO	Violet cod	<i>Antimora rostrata</i>	3268	13475	4240	497	40
BCA	Barracudina	<i>Magnisudis prionosa</i>	11	17	55	458	150
LEG	Giant lepidion	<i>Lepidion schmidti, L. inosimae</i>	46	1184	20	455	222
RAY	Rays	N/A	725	3302	12095	410	441
PHO	Lighthouse fish	<i>Photichthys argenteus</i>	621	979	926	408	318
SMC	Small-headed cod	<i>Lepidion microcephalus</i>	472	405	376	367	1488
UNX	All and any unidentified species	N/A	2295	1766	1524	362	1020
EUC	Eucla cod	<i>Euclichthys polynemus</i>	157	400	639	344	546
GRC	Grenadier cod	<i>Tripterothycis gilchristi</i>	3	87	31	339	136
FMA	Fusitriton magellanicus	<i>Fusitriton magellanicus</i>	270	70	247	308	618
HTH	Sea cucumber (other than Stichopus mollis)	Holothuroidea (Class)	285	532	117	273	336
APR	Cat shark	<i>Apristurus</i> spp.	241	570	1165	257	2461
EPR	Cardinal fish, robust	<i>Epigonus robustus</i>	5253	2356	1356	255	438
WHR	White rattail	<i>Trachyrincus longirostris</i>	80		16	250	621
WHE	Whelks	N/A	388	259	302	247	480
SSM	Smallscaled brown slickhead	<i>Alepocephalus antipodians</i>		63	252	240	241
PRA	Prawn (unspecified)	N/A	3412	1885	132	203	1822
CHP	Chimaera, purple	<i>Chimaera</i> sp.	374	95	627	175	325
DCS	Dawson's cat shark	<i>Halaelurus dawsoni</i>			161	168	211
BRA	Short-tailed black ray	<i>Dasyatis brevicaudata</i>			201	168	308
COD	Cod (unspecified)	N/A	1481	207	55	167	199

Species code	Common name	Scientific name	2010/11	2011/12	2012/13	2013/14	2014/15
BWH	Bronze whaler shark	<i>Carcharhinus brachyurus</i>	660	425	76	142	200
SYN	Cutthroat eels (except Basketwork eels)	N/A				142	108
SPZ	Spotted stargazer	<i>Genyagnus monopterygius</i>	1612	1512	20	137	189
SPI	Spider crabs (unspecified)	N/A	1034	416	58	133	101
BPE	Butterfly perch	<i>Caesioperca Lepidoptera</i>	183	150	35	131	57
CHA	Viper fish	<i>Chauliodus sloani</i>				129	70
OAR	Oarfish	<i>Regalecus glesne</i>	118	67	46	126	68
CUB	Cubeheads	<i>Cubiceps</i> spp.		146	97	124	38
GPF	Girdled wrasse	<i>Notolabrus cinctus</i>	224		153	124	84
LFB	Long-finned boarfish	<i>Zanclistius elevatus</i>	3	3	5	118	10
BOT	Lefteye flounders	<i>Bothidae</i> spp.	407	200	16	116	
SPF	Scarlet wrasse	<i>Pseudolabrus miles</i>	40	2	31	116	55
RCH	Widenosed chimaera	<i>Rhinochimaera pacifica</i>	17		17	107	135
AGR	Ribbonfish	<i>Agrostichthys parkeri</i>	131	112	242	101	332
CSH	Cat shark	Other than <i>Apristurus</i> spp.	449	174	290	99	2461
RAG	Ragfish	<i>Icichthys australis</i>	11	12	16	97	147
VOL	Volute	Family Volutidae	587	1830	635	81	175
API	Alert pigfish	<i>Alertichthys blacki</i>	155	108	185	67	162
SDF	Spotted flounder	<i>Azygopus pinnifasciatus</i>	270	212	192	65	126
STR	Stingray (unspecified)	N/A	1010	778	227	65	156
NTU	Northern bluefin tuna	<i>Thunnus thynnus</i>			150	49	
PLZ	Scaly stargazer	<i>Pleuroscopus pseudodorsalis</i>	540	560	28	46	717
CHX	Pink frogmouth	<i>Chaunax pictus</i>	15	36	62	34	243
PAG	Pagurid	N/A	153	6	45	34	1
PMA	Pink maomao	<i>Caprodon longimanus</i>		12		27	
BSQ	Broad squid	<i>Sepioteuthis australis</i>	71	16	1	26	2
BOA	Sowfish	<i>Paristiopeterus labiosus</i>	7597	68	41	23	12
DSP	Deepsea pigfish	<i>Congiopodus coriaceus</i>	42	2	55	18	79
TOD	Dark toadfish	<i>Neophrynichthys latus</i>		50	5	15	82
GVO	Golden volute	<i>Provocator mirabilis</i>	2		2	14	12
BCR	Blue cusk eel	<i>Brotulotaenia crassa</i>				13	3
DIS	Discfish	<i>Diretmus argenteus</i>	10	11	4	10	8
PSP	Scissortail	<i>Psenes pellucidus</i>		113	148	10	3
SFN	Spinyfin	<i>Diretmichthys parini</i>		14	4	8	9
SPT	Purple-heart urchin	<i>Spatangus multispinus</i>		17		8	1
WLP	Wavy line perch	<i>Lepidoperca tasmanica</i>		150	150	8	1

Species code	Common name	Scientific name	2010/11	2011/12	2012/13	2013/14	2014/15
MIQ	Warty squid	<i>Onykia ingens</i>	4694	2810	95682	7	363
TRS	Cape scorpionfish	<i>Trachyscorpia capensis</i>	97	93	45	6	303
RRC	Red scorpion fish	<i>Scorpaena cardinalis</i> , <i>S. papillosus</i>		3		6	
HYD	Hydrolagus spp.	<i>Hydrolagus</i> spp.		11		5	
SDE	Seadevil	<i>Cryptopsaras couesi</i>			2	4	5
SPP	Splendid perch	<i>Callanthias allporti</i>		103		4	
LHO	Omega prawn	<i>Lipkius holthuisi</i>	42	10	127	2	4
PAL	Barracudinas	N/A	32	3	19	2	9
WSE	Wrasses	N/A	78	64	47	2	1
MOB	Blunthead lightfish	<i>Margrethia obtusirostra</i>	60	546	645	2	
AER	Aeneator recens	<i>Aeneator recens</i>		5		1	
NCA	Hairy red swimming crab	<i>Netocarcinus antarcticus</i>	163	11	1	1	
NOT	Antarctic rock cods	<i>Paranotothenia</i> spp.		186	6	1	
SLL	Slipper lobsters	<i>Scyllaridae</i> spp.	99	112	59	1	5
ABR	Shortsnouted lancetfish	<i>Alepisaurus brevirostris</i>		1			7
AME	Sculpin	<i>Antipodocottus megalops</i>		17			
ART	Brine shrimp	<i>Artemia salina</i>	6				
ASR	Sea stars	N/A					
BAC	Codheaded rattail	<i>Bathygadus cottoides</i>	319	207			
BAF	Black anglerfish	N/A		1			
BAN	Borostomias antarcticus	<i>Borostomias antarcticus</i>		17			
BAT	Slickheads	<i>Rouleina</i> spp.	3560	21			
BBR	Bronze bream	<i>Xenobrama microlepis</i>		110			
BEA	Eaton's skate	<i>Bathyraja eatoni</i>		129			
BPF	Banded wrasse	<i>Notolabrus fucicola</i>	124	14			
BRC	Northern bastard cod	<i>Pseudophycis breviuscula</i>		118			5
BRE	Codlet	<i>Bregmaceros maclellandi</i>		4			
CAM	Sabre prawn	<i>Campylonotus rathbunae</i>					4
CFA	Banded rattail	<i>Coelorinchus rasciatus</i>		44	8		
COL	Olivers rattail	<i>Coelorinchus oliverianus</i>	20				
CTU	Cook's turban shell	<i>Cookia sulcata</i>		27			
DHO	Deepsea urchin	<i>Dermechinus horridus</i>	12				
EBI	Pygmy shark	<i>Euprotomicrus bispinatus</i>		161			
ECO	Prickly shark	<i>Echinorhinus cookie</i>	17				

Species code	Common name	Scientific name	2010/11	2011/12	2012/13	2013/14	2014/15
EPD	Cardinal fish, white	<i>Epigonus denticulatus</i>			6		6
EPT	Deepsea cardinalfish	<i>Epigonus telescopus</i>		12			
ETM	Etmopterus spp.	<i>Etmopterus</i> spp.	15				
FLO	Flounder (unspecified)	N/A	37				
FRS	Frill shark	<i>Chlamydoselachus anguineus</i>		2			16
FTU	Frigate tuna	<i>Auxis thazard</i>	49	161	2		
GAS	Gastropods	N/A		22			
GPA	Parasol urchin	<i>Goniocidaris parasol</i>					
GRV	Macrourus spp.	<i>Macrourus</i> spp.		6516			
GSA	Giant sawbelly	<i>Hoplostethus gigas</i>	4	20			
GSE	Snake mackerel	<i>Gempylus serpens</i>			138		700
GUL	Gulper eel	<i>Eurypharynx pelecanooides</i>	365	62	16		
HAT	Hatchetfish	<i>Sternoptychidae</i> sp.		524			
HYP	Pointnose blue ghost shark	<i>Hydrolagus trolli</i>	231	6351	74		151
ICX	Icefishes	Family Channichthyidae		3636			
INV	Invertebrate (unknown)	N/A		15			
KAN	Krefflichthys anderssoni	<i>Krefflichthys anderssoni</i>		45			
LEP	Escolar	<i>Lepidocybium flavobrunneum</i>		12	5		
MCA	Ridge scaled rattail	<i>Macrourus carinatus</i>	26273				2,328
MNI	Krill, squat lobsters	<i>Munida</i> spp.	265		17		
MOR	Moray eel	<i>Muraenidae</i> spp.	382	63	18		11
MRL	Moray cods	<i>Muraenolepididae</i> sp.		512			
MST	Scaleless black dragonfishes	N/A					2
MUR	Moray cod	<i>Muraenolepis marmoratus</i>					6
NOC	Notocanthus chemnitzii	<i>Notocanthus chemnitzii</i>					
PGR	Plunderfish	<i>Pogonophryne permitini</i>		23			
RMU	Red mullet	<i>Upeneichthys lineatus</i>	212	52			
ROC	Rock cod	<i>Lotella rhacina</i>		485			3200
RPE	Red perch	Unspecified		3	62		
SAM	Quinnat salmon	<i>Omcorhynchus tshawytscha</i>			4		4
SCM	Roughskin dogfish	<i>Scymnodon macracanthus</i>	1635	146	31		
SEE	Silver conger	<i>Gnathophis habenatus</i>	97	72	5		
SHR	Sea hare	N/A	6				

Species code	Common name	Scientific name	2010/11	2011/12	2012/13	2013/14	2014/15
SNE	Snubnosed eel	<i>Simenchelys parasitica</i>	20		2		1
SOL	Sole (unspecified)	N/A		6			
SOP	Pacific sleeper shark	<i>Somniosus pacificus</i>					1
SPK	Spikefish	<i>Macrorhamphosodes uradoi</i>	88				
SRR	Amblyraja Georgiana	<i>Amblyraja georgiana</i>		57			
SSC	Giant masking crab	<i>Leptomithrax australis</i>	245				10
STG	Stargazer (unspecified)	N/A		1	27		
TAS	Rough pomfret	<i>Taractes asper</i>	10	5			
TIN	Tinselfish	<i>Xenolepidichthys dalgleishi</i>	45	6			41
TRA	Roughies	Family Trachichthyidae	1697		18		
WGR	Macrourus whitsoni	<i>Macrourus whitsoni</i>		4121			

Appendix IV: Cost recovery levy analysis

Table 38: Cost recovery levies (\$) for deepwater stocks 2014/15

Fishstock	Compliance	Registry	Observers		Research		Under/Over Recovery		2014/15
	MPI	MPI	MPI	DOC	MPI	DOC	MPI	DOC	Total
BAR10	39	14			1	0	0	0	54
BAR4	11,761	4,296	22,500	4,678	1,182	95	99	-198	44,413
BAR5	34,323	12,538	65,250	4,678	3,449	95	220	-198	120,354
BAR7	33,480	12,231	63,450	12,995	3,364	856	-1,041	-10,703	114,633
BYX1	5,843	2,135			523		-50	0	8,451
BYX10	195	71			3	0	2	0	270
BYX2	67,796	24,767	35,100	3,960	6,296		-46,760	-3,960	87,199
BYX3	3,331	1,217	11,700	1,091	298		-8,238	-1,091	8,307
BYX7	1,455	532			130		-12	0	2,105
BYX8	400	146			36		-3	0	578
CDL1	11,986	4,379			1,073		-103		17,335
CDL10									
CDL2	4,571	1,670	5,400	759	424		-12,065	-759	0
CDL3	1,958	715			175		-17	0	2,832
CDL4	659	241			59		-6	0	953
CDL5	220	80			20		-2	0	318
CDL6	10	4			1		0	0	15
CDL7	390	142			35		-3	0	563
CDL8							0	0	0
CDL9	40	15			4		0	0	58
CHC1	20	7					3	0	30
CHC10							0	0	0

Fishstock	Compliance	Registry	Observers		Research		Under/Over Recovery		2014/15
	MPI	MPI	MPI	DOC	MPI	DOC	MPI	DOC	Total
CHC2	20	7					3	0	30
CHC3	8	3					1	0	12
CHC4	8	3					1	0	12
CHC5	8	3					1	0	12
CHC6	8	3					1	0	12
CHC7	8	3					1	0	12
CHC8	8	3					1	0	12
CHC9	8	3					1	0	12
EMA3	1,636	598			68	34	-36	1	2,301
EMA7	37,142	13,568			1,546	761	-1,750	-349	50,919
FRO10							0	0	0
FRO3	2,883	1,053			172		-16	0	4,092
FRO4	635	232			38		-1	0	904
FRO5	1,780	650			106		-12	0	2,524
FRO6	54	20			3		-1	0	76
FRO7	23,580	8,614			1,405		-202	0	33,396
FRO8	6,807	2,487			405		-58	0	9,641
FRO9	1,447	529			86		-12	0	2,050
GSC1	2	1					0	0	3
GSC10							0	0	0
GSC3	28	10					4	0	42
GSC5	38	14					6	0	58
GSC6A	296	108					45	0	449
GSC6B	473	173					72	0	718
GSH4	924	338			489	19	-20	-19	1,731
GSH5	512	187			271		-101	0	868
GSH6	446	163			236		-4	0	841

Fishstock	Compliance	Registry	Observers		Research		Under/Over Recovery		2014/15
	MPI	MPI	MPI	DOC	MPI	DOC	MPI	DOC	Total
GSP1	5,399	1,972			2,786	111	-130	-111	10,027
GSP5	2,131	779			1,100		-19	0	3,990
GSP7	703	257			363	14	-22	-14	1,301
HAK1	45,842	16,746	15,300	2,984	45,113	1,172	-2,567	-383	124,207
HAK10	118	43			3		1	0	165
HAK4	24,452	8,933	8,100	1,762	24,441	501	-480	-516	67,193
HAK7	86,141	31,468	28,350	5,921	30,846	2,203	-13,792	-4,279	166,858
HOK1	1,198,626	437,869	1,023,300	208,326	3,244,602	83,867	-157,783	-9,852	6,028,954
HOK10	80	29			2		1	0	112
JMA10	44	16			1		0	0	62
JMA3	79,109	28,899	102,150	20,793	46,969	2,023	-3,256	88	276,775
JMA7	142,998	52,238	184,500	37,427	178,230	3,657	-20,311	-3,500	575,239
KIC1	20	7					3	0	30
KIC10							0	0	0
KIC2	20	7					3	0	30
KIC3	20	7					3	0	30
KIC4	20	7					3	0	30
KIC5	20	7					3	0	30
KIC6	20	7					3	0	30
KIC7	20	7					3	0	30
KIC8	20	7					3	0	30
KIC9	20	7					3	0	30
LDO1	2,937	1,073			175		-4,184	0	0
LDO10	15	5					-14	0	7
LDO3	9,322	3,405			555		-13,283	0	0
LIN10	254	93			7		2	0	356
LIN3	54,527	19,919	39,267	6,654	45,046	1,394	-13,121	-8,048	145,638

	Compliance	Registry	Observers		Research		Under/Over Recovery		2014/15
Fishstock	MPI	MPI	MPI	DOC	MPI	DOC	MPI	DOC	Total
LIN4	108,655	39,693	19,800	4,029	72,194	4,559	-13,851	-8,588	226,491
LIN5	112,193	40,985	19,800	4,055	77,949	3,774	-19,876	-7,829	231,051
LIN6	245,513	89,688	44,100	8,811	145,042	6,278	-24,640	-5,281	509,511
LIN7	83,065	30,344	41,058	9,835	34,629	2,794	-35,823	-12,629	153,274
OEO1	22,225	8,119	1,800	229	11,147	455	-43,290	-684	0
OEO10	89	32			2		1	0	125
OEO3A	29,781	10,879	17,550	2,115	360,412	1,250	-12,347	-2,830	406,810
OEO4	62,229	22,733	36,450	4,423	6,461	2,611	-25,798	-5,913	103,196
OEO6	53,339	19,485	4,950	551	5,538	1,093	-29,253	-1,644	54,060
ORH1	34,680	12,669	22,050	2,858	3,601	711	-41,625	-2,822	32,122
ORH10	248	90			7		2	0	347
ORH2A	14,246	5,204	16,200	2,360	1,479	292	-36,434	-2,651	695
ORH2B	3,076	1,124	4,050	509	319	63	-76	-71	8,995
ORH3A	9,120	3,331	10,350	1,512	947	187	-208	-194	25,046
ORH3B	75,513	27,586	40,950	6,143	125,381	3,169	-84,452	-9,312	184,978
ORH7A	9,639	3,521	16,200	2,079	60,365		105	-76	91,833
ORH7B	25	9			3		-36	0	0
PRK1	837	306			50		-7	0	1,186
PRK10							0	0	0
PRK2	120	44			7		-1	0	169
PRK3	34	12			2		0	0	49
PRK4A	34	12			2		0	0	49
PRK5	34	12			2		0	0	49
PRK6A	34	12			2		0	0	49
PRK6B	34	12			2		0	0	49
PRK7	34	12			2		0	0	49
PRK8	34	12			2		0	0	49

Fishstock	Compliance	Registry	Observers		Research		Under/Over Recovery		2014/15
	MPI	MPI	MPI	DOC	MPI	DOC	MPI	DOC	Total
PRK9	34	12			2		0	0	49
PTO1	4,944	1,806					-178	0	6,573
RBT1	74	27			4		-1	0	105
RBT10	0	0					0	0	0
RBT3	8,531	3,117			508		-72	0	12,084
RBT7	11,067	4,043			659		-93	0	15,676
RBY1	5,993	2,189			357		-5,661	0	2,878
RBY10	0	0					0	0	0
RBY2	4,931	1,801			294		-7,025	0	0
RBY3	34	12			2		-49	0	0
RBY4	45	16			3		-64	0	0
RBY5	0	0			0		0	0	0
RBY6	0	0			0		0	0	0
RBY7	82	30			5		-117	0	0
RBY8	68	25			4		-97	0	0
RBY9	146	53			9		-208	0	0
RIB10	0	0			0		0	0	0
RIB3	3,857	1,409			230		-5,495	0	0
RIB4	2,247	821			134		-3,201	0	0
RIB5	327	120			19		-466	0	0
RIB6	1,038	379			62		-1,479	0	0
RIB7	3,395	1,240			202		-4,838	0	0
RIB8	8	3					-11	0	0
SBW1	45	16			3		0	0	64
SBW6A	6,880	2,513	6,300	1,040	458	324	-149	-140	17,226
SBW6B	38,372	14,018	36,900	7,543	79,910	786	-833	149	176,844
SBW6I	246,677	90,113	232,650	49,751	117,995	6,308	-3,252	579	740,821

	Compliance	Registry	Observers		Research		Under/Over Recovery		2014/15
Fishstock	MPI	MPI	MPI	DOC	MPI	DOC	MPI	DOC	Total
SBW6R	30,765	11,239	29,700	6,347	180,524	787	-668	119	258,811
SCI1	17,943	6,555	5,400	1,653	259,141	459	-9,144	-2,112	279,895
SCI10	0	0					0	0	0
SCI2	17,297	6,319	4,500	1,591	249,802	442	-6,125	-2,033	271,793
SCI3	46,832	17,108	14,850	4,314	694,985	1,621	-21,866	-5,936	751,910
SCI4A	16,577	6,056	5,400	1,528	1,539	696	-8,177	-2,224	21,396
SCI5	5,526	2,019	2,250	509	513		-2,770	-509	7,537
SCI6A	42,363	15,476	13,500	3,904	9,709	23,075	-17,083	-5,480	85,463
SCI6B	6,907	2,523	2,700	634	641	142	-3,557	-776	9,215
SCI7	10,361	3,785	3,600	956	962		-5,193	-956	13,514
SCI8	691	252	450	62	64		-347	-62	1,110
SCI9	4,835	1,766	1,800	447	449		-2,423	-447	6,428
SKI10	162	59			2		1	0	224
SKI3	3,961	1,447			355	81	-109	-81	5,653
SKI7	3,656	1,336			327	75	-84	-75	5,234
SPD10	0	0					0	0	0
SPD4	4,223	1,543			2,164	87	-90	-85	7,841
SPD5	6,283	2,295	13,965	15,062	3,289	129	-342	-322	40,359
SPE10	0	0					0	0	0
SPE3	7,691	2,810			5,043	158	-125	-116	15,461
SPE4	5,363	1,959			480	110	-107	-100	7,704
SPE5	155	56			16		-1	0	225
SPE6	58	21			6		0	0	86
SPE7	614	224			62	13	-12	-12	890
SQU10T	114	42			2		1	0	158
SQU1J	571,763	208,870			53,098		4,854	0	838,585
SQU1T	585,435	213,864	219,150	47,848	208,975	28,393	-11,155	1,663	1,294,174

	Compliance	Registry	Observers		Research		Under/Over Recovery		2014/15
Fishstock	MPI	MPI	MPI	DOC	MPI	DOC	MPI	DOC	Total
SQU6T	368,589	134,649	138,150	29,894	159,276	200,767	-65,223	6,798	972,899
SWA1	30,865	11,275	24,750	5,198	3,101	789	-4,066	-813	71,099
SWA10	83	30			2		1	0	116
SWA3	20,970	7,660	17,100	3,639	2,107	536	-459	-493	51,060
SWA4	29,822	10,894	24,300	5,198	2,997	1,446	-867	-836	72,955
WWA1	56	21			5		-1	0	81
WWA10	0	0			0	0	0	0	0
WWA2	1,101	402	450	0	92	23	-24	-22	2,022
WWA3	8,269	3,021	3,150	520	693	169	-226	-211	15,385
WWA4	4,977	1,818	1,800	520	417	102	-109	-101	9,424
WWA5B	39,471	14,419	15,750	3,119	3,308	1,328	-863	-805	75,728
WWA7	1,903	695	900	0	159	39	-42	-39	3,615
WWA8	15	6			1		0	0	22
WWA9	0	0			0	0	0	0	0
Grand Total	5,009,435	1,829,992	2,719,140	552,814	6,592,849	392,923	-856,279	-119,893	16,120,920

Table 39: Levies by stock as a percent of landed value

	Total levies 2014/15 (\$)	2014/15 Landings (tonnes)	2014/15 Port price (\$/kg)	2014/15 Landed value (\$)	Levies as % landed value (14/15)
BAR10	54	0	0.39	-	-
BAR4	44,413	3,672	0.39	1,432,066	3.1
BAR5	120,354	6,778	0.46	3,117,942	3.9
BAR7	114,633	6,974	0.30	2,092,347	5.5
BYX1	8,451	53	1.95	102,552	8.2
BYX10	270	0	1.95	-	-
BYX2	87,199	1,617	1.52	2,458,522	3.5
BYX3	8,307	997	2.52	2,511,795	0.3
BYX7	2,105	26	1.81	47,922	4.4
BYX8	578	<1	2.00	84	668.1
CDL1	17,335	21	1.00	20,616	84.1
CDL10	0	0	1.00	-	-
CDL2	0	408	1.04	423,967	0
CDL3	2,832	209	1.00	208,893	1.4
CDL4	953	18	1.00	17,640	5.4
CDL5	318	4	1.00	3,526	9.0
CDL6	15	1	1.00	679	2.2
CDL7	563	5	1.00	4,823	11.7
CDL8	0	0	1.00	-	-
CDL9	58	1	1.00	1,448	4.0
CHC1	30	0	0.20	-	-
CHC10	0	0	0.20	-	-
CHC2	30	<1	0.20	18	166.7
CHC3	12	0	0.20	-	-
CHC4	12	0	0.20	-	-
CHC5	12	<1	0.20	-	6000
CHC6	12	0	0.20	-	-
CHC7	12	0	0.20	-	-
CHC8	12	0	0.20	-	-
CHC9	12	0	0.20	-	-
EMA3	2,301	87	0.42	36,419	6.3
EMA7	50,919	892	1.11	989,838	5.1
FRO10	0	0	1.05	-	-
FRO3	4,092	13	1.64	21,182	19.3
FRO4	904	69	2.27	156,961	0.6
FRO5	2,524	14	1.32	18,517	13.6
FRO6	76	<1	0.49	25	298.3
FRO7	33,396	1,027	0.90	924,649	3.6
FRO8	9,641	732	1.05	768,409	1.3
FRO9	2,050	373	1.05	391,159	0.5
GSC1	3	0	0.20	-	-
GSC10	0	0	0.20	-	-
GSC3	42	11	0.20	2,293	1.8
GSC5	58	66	0.20	13,179	0.4
GSC6A	449	102	0.20	20,457	2.2
GSC6B	718	3	0.20	695	103.4
GSH4	1,731	217	0.25	54,138	3.2
GSH5	868	54	0.47	25,290	3.4
GSH6	841	72	0.47	33,832	2.5
GSP1	10,027	476	0.47	223,889	4.5
GSP5	3,990	231	0.47	108,579	3.7
GSP7	1,301	38	0.40	15,128	8.6
HAK1	124,207	1,724	1.24	2,138,324	5.8
HAK10	165	0	1.18	-	-
HAK4	67,193	304	1.36	413,231	16.3
HAK7	166,858	6,219	1.12	6,965,772	2.4
HOK1	6,028,954	161,528	0.80	129,222,358	4.7

	Total levies 2014/15 (\$)	2014/15 Landings (tonnes)	2014/15 Port price (\$/kg)	2014/15 Landed value (\$)	Levies as % landed value (14/15)
HOK10	112	0	0.80	-	-
JMA10	62	0	0.44	-	-
JMA3	276,775	4,115	0.44	1,810,395	15.3
JMA7	575,239	33,970	0.44	14,946,633	3.8
KIC1	30	<1	0.20	-	7500
KIC10	0	0	0.20	-	-
KIC2	30	3	0.20	618	4.9
KIC3	30	<1	0.20	13	227.3
KIC4	30	<1	0.20	3	882.4
KIC5	30	<1	0.20	6	483.9
KIC6	30	<1	0.20	87	34.3
KIC7	30	<1	0.20	3	1153.8
KIC8	30	0	0.20	-	-
KIC9	30	<1	0.20	-	15000
LDO1	0	207	1.75	361,970	-
LDO10	7	0	1.50	-	-
LDO3	0	357	1.52	542,740	-
LIN10	356	0	2.54	-	-
LIN3	145,638	1,325	2.65	3,511,597	4.1
LIN4	226,491	2,244	2.59	5,812,284	3.9
LIN5	231,051	3,924	2.84	11,144,603	2.1
LIN6	509,511	3,114	2.89	8,899,518	5.7
LIN7	153,274	3,343	2.70	9,027,086	1.7
OEO1	0	277	0.89	246,961	-
OEO10	125	0	0.89	-	-
OEO3A	406,810	3,352	0.89	2,983,103	13.6
OEO4	103,196	7,274	0.89	6,473,506	1.6
OEO6	54,060	156	0.89	138,554	39.0
ORH1	32,122	1,181	2.48	2,929,465	1.1
ORH10	347	0	2.48	-	-
ORH2A	695	483	1.63	786,834	0.1
ORH2B	8,995	54	2.20	119,709	7.5
ORH3A	25,046	156	2.20	342,465	7.3
ORH3B	184,978	4,739	1.68	7,961,520	2.3
ORH7A	91,833	1,594	1.93	3,076,524	3.0
ORH7B	0	2	2.48	4,142	-
PRK1	1,186	0	3.42	-	-
PRK10	0	0	3.42	-	-
PRK2	169	<1	3.42	133	126.7
PRK3	49	<1	3.42	10	477.6
PRK4A	49	0	3.42	-	-
PRK5	49	0	3.42	-	-
PRK6A	49	0	3.42	-	-
PRK6B	49	0	3.42	-	-
PRK7	49	1	3.42	3,410	1.4
PRK8	49	<1	3.42	3	1432.7
PRK9	49	0	3.42	-	-
PTO1	6,573	36	10.00	361,100	1.8
RBT1	105	4	0.39	1,741	6.0
RBT10	0	0	0.39	-	-
RBT3	12,084	2,020	0.39	787,723	1.5
RBT7	15,676	132	0.39	51,304	30.6
RBY1	2,878	132	2.00	264,432	1.1
RBY10	0	0	1.14	-	-
RBY2	0	270	1.14	308,209	-
RBY3	0	14	1.14	16,291	-
RBY4	0	22	0.25	5,464	-
RBY5	0	<1	1.14	8	-

	Total levies 2014/15 (\$)	2014/15 Landings (tonnes)	2014/15 Port price (\$/kg)	2014/15 Landed value (\$)	Levies as % landed value (14/15)
RBY6	0	<1	1.54	9	-
RBY7	0	4	0.25	1,064	-
RBY8	0	<1	1.14	34	-
RBY9	0	1	0.77	782	-
RIB10	0	0	0.77	-	-
RIB3	0	122	0.98	119,641	-
RIB4	0	341	0.63	214,548	-
RIB5	0	47	0.63	29,550	-
RIB6	0	83	0.45	37,506	-
RIB7	0	434	1.03	447,268	-
RIB8	0	1	0.77	1,044	-
SBW1	64	40	0.56	22,244	0.3
SBW6A	17,226	161	0.42	67,6441	25.5
SBW6B	176,844	2,405	0.56	1,346,769	13.1
SBW6I	740,821	23,142	0.63	14,579,186	5.1
SBW6R	258,811	40	0.56	22,205	1165.5
SCI1	279,895	117	14.97	1,750,068	16.0
SCI10	0	0	13.83	-	-
SCI2	271,793	143	13.02	1,856,366	14.6
SCI3	751,910	374	13.79	5,157,501	14.6
SCI4A	21,396	131	13.83	1,812,394	1.2
SCI5	5,526	<1	13.83	830	665.9
SCI6A	42,363	102	13.86	1,407,400	3.0
SCI6B	6,907	<1	13.83	207	3329.5
SCI7	10,361	9	13.83	123,391	8.4
SCI8	691	0	13.83	-	-
SCI9	4,835	<1	13.83	28	17480.1
SKI10	162	0	1.62	-	-
SKI3	3,961	21	1.32	27,783	14.3
SKI7	3,656	231	1.22	281,676	1.3
SPD10	0	0	0.32	-	-
SPD4	4,223	1,374	0.26	357,359	1.2
SPD5	6,283	1,713	0.17	291,290	2.2
SPE10	0	0	0.65	-	-
SPE3	7,691	734	0.77	565,362	1.4
SPE4	5,363	475	0.59	280,377	1.9
SPE5	155	13	0.43	5,390	2.9
SPE6	58	2	0.65	1,509	3.8
SPE7	614	118	0.75	88,412	0.7
SQU10T	114	0	1.14	-	-
SQU1J	571,763	515	1.14	587,445	97.3
SQU1T	585,435	9,668	1.31	12,664,921	4.6
SQU6T	368,589	6,127	1.14	6,984,682	5.3
SWA1	30,865	878	1.03	903,929	3.4
SWA10	83	0	0.83	-	-
SWA3	20,970	3,820	0.64	2,444,609	0.9
SWA4	29,822	4,355	0.73	3,179,372	0.9
WWA1	56	<1	1.41	176	31.8
WWA10	0	0	1.51	-	-
WWA2	1,101	7	1.51	10,896	10.1
WWA3	8,269	225	1.42	319,929	2.6
WWA4	4,977	69	1.51	103,817	4.8
WWA5B	39,471	447	1.51	675,044	5.8
WWA7	1,903	98	1.50	146,757	1.3
WWA8	15	0	1.51	-	-
WWA9	0	0	1.50	-	-

Appendix V: Interim Observer Trip Report template

Ministry for Primary Industries
Manatū Ahu Matua



Interim Observer Trip Report				
Trip Number:		Vessel Name:		
Call Sign:		Observer:		
Trip Start Date:		Trip End Date:		
Q	Criteria	Rating		
1	QMS species are discarded only after correct estimation and authorisation			
2	QMS species identified accurately			
3	Vessel has a valid system for determining, recording and retaining block weight test information			
4	Vessel has a valid system in place to quantify all sources of whole and processed fish to meal; including applying conversion factor to processed fish			
5	Fish is cut in accordance with the Conversion Factors Notice			
6	Non-fish by-catch recorded and reported accurately			
7	Offal management was adequate (if VMP onboard, meets specifications)			
8	Appropriate bird mitigation devices were deployed and in working condition for duration of trip			
9	The factory was clean and hygienic			
10	Observer Standard met (e.g. living conditions, water etc, were adequate)			
11	Vessel was using/applying glaze during trip	Y / N		
12	If conversion factor (CF) tested insert species, state, and average CF over page			
13	If any maritime or safety issues were identified insert comment over page			
14	If any labour or employment issues were brought to your attention by any crew insert comment over page			
15	Comment on any issues raised with Captain or Factory Manager during trip and the outcome (include names of people spoken too)			
Criteria Rating:	A	B	C	N/A
	Clearly acceptable.	Generally acceptable but minor departures from best practice identified.	Not Deemed Acceptable: this criterion is not met and requires addressing	Not applicable

Should you not receive a copy of the full observer report, or have any questions, please contact the Observer Programme via the following email address: observer@mpi.govt.nz

Signed:

Date:

Manager Observer Services



Question Number	Comment		
12	Conversion Factors		
SPECIES	STATE	# of TESTS	AVERAGE CF
SPECIES	STATE	# of TESTS	AVERAGE CF
SPECIES	STATE	# of TESTS	AVERAGE CF