



ANNUAL OPERATIONAL PLAN FOR DEEPWATER FISHERIES FOR 2012/13



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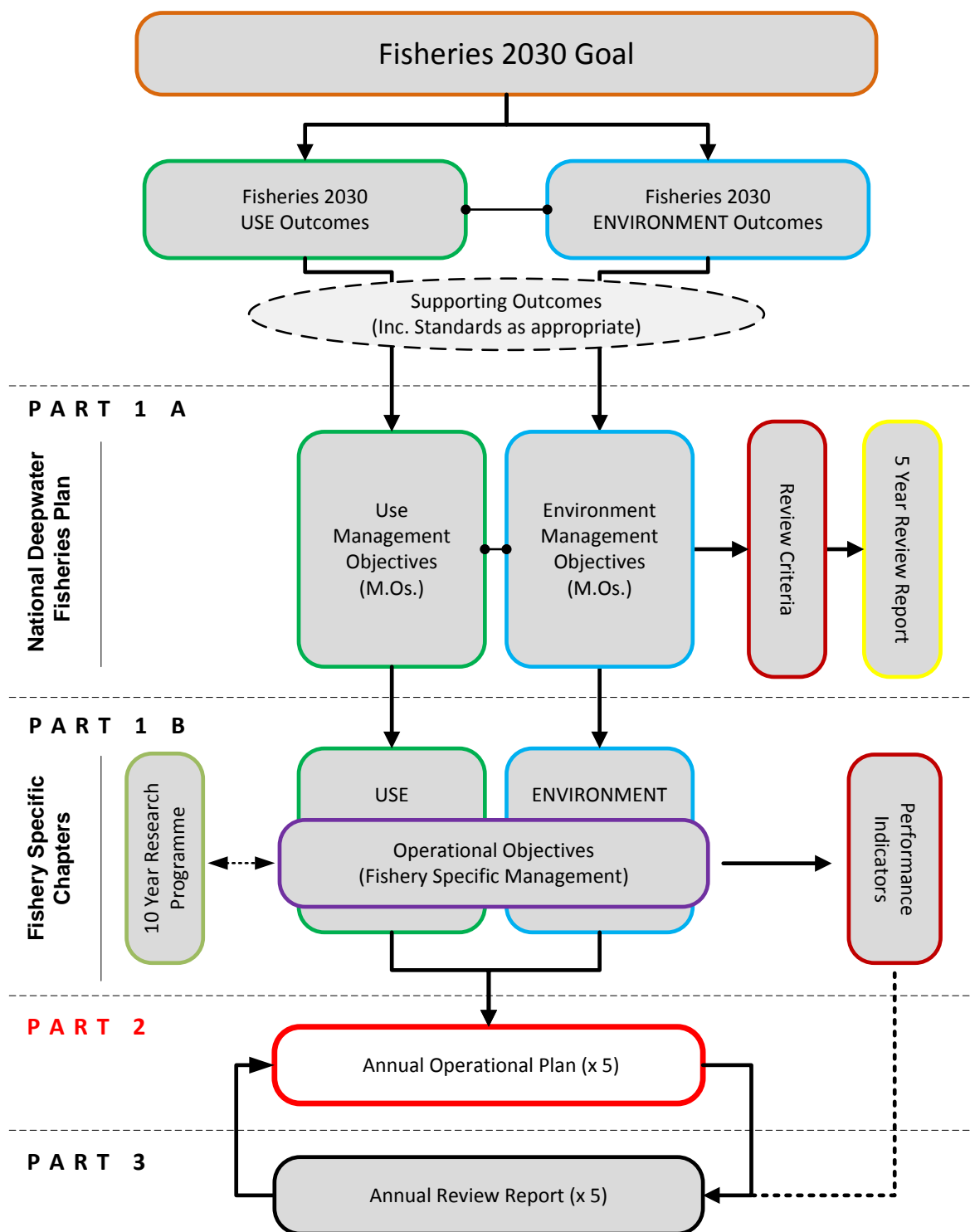
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National Deepwater Plan Structure



Summary of the National Deepwater Plan Goal

(as specified in Fisheries 2030)

New Zealanders maximising benefits from the use of fisheries within environmental limits

Outcomes *(as specified in Fisheries 2030)*

Use Outcome: Fisheries resources are used in a manner that provides greatest overall economic social and cultural benefit.

Environment Outcome: The capacity and integrity of the aquatic environment, habitats and species are sustained at levels that provide for current and future use.

Management Objectives *(Part 1 A)*

Use Outcome	MO 1.1	Enable economically viable deepwater and middle-depth fisheries in New Zealand over the long-term
	MO 1.2	Ensure there is consistency and certainty of management measures and processes in the deepwater and middle depths fisheries
	MO 1.3	Ensure the deepwater and middle-depths fisheries resources are managed so as to provide for the reasonably foreseeable needs of future generations
	MO 1.4	Ensure effective management of deepwater and middle-depth fisheries is achieved through the availability of appropriate, accurate and robust information
	MO 1.5	Ensure the management of New Zealand's deepwater and middle-depth fisheries are recognised as being consistent with or exceeding national and international best practice
	MO 1.6	Ensure New Zealand's deepwater and middle-depth fisheries are transparently managed
	MO 1.7	Ensure the management of New Zealand's deepwater and middle-depth fisheries meets the Crown's obligations to Maori

Environment Outcome	MO 2.1	Ensure deepwater and middle-depth fish stocks and key bycatch fish stocks are managed to an agreed harvest strategy
	MO 2.2	Maintain the genetic diversity of deepwater and middle-depth target and bycatch species
	MO 2.3	Protect habitats of particular significance for fisheries management
	MO 2.4	Identify and avoid or minimise adverse effects of deepwater and middle-depth fisheries on incidental bycatch species
	MO 2.5	Manage deepwater and middle-depth fisheries to avoid or minimise adverse effects on the long-term viability of endangered, threatened and protected species
	MO 2.6	Manage deepwater and middle-depth fisheries to avoid or minimise adverse effects on biological diversity
	MO 2.7	Identify and avoid or minimise adverse effects of deepwater and middle-depths fishing activity on the benthic habitat

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Introduction

Overview

New Zealand's Deepwater and Middle-depth fisheries (deepwater fisheries) are those fisheries which predominantly occur in offshore waters beyond the 12 nautical mile (nm) limit of the territorial sea. Deepwater fishing activity occurs out to the 200 nm limit of New Zealand's exclusive economic zone (EEZ). This fishing area produced over NZ \$530 million in export earnings during the 2011 calendar year, and includes four of the top ten exports by value for all fisheries and aquaculture in 2011.

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

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

Table 1: Categorisation of deepwater species

	Stocks in the National Deepwater Plan ¹	Stocks currently outside National Deepwater Plan (date of expected inclusion)
Tier 1 Species	Hoki : All Orange Roughy: All Southern Blue Whiting: All Ling: LIN3 - LIN7	Hake: All (2013) Oreo: All (2013) Squid: All (tbc) Jack Mackerel: JMA3, JMA7 only (2012) Scampi: All (2012)
Tier 2 Species	Silver warehou: All Spiny dogfish: SPD4, SPD5 Frostfish: FRO3-FRO9 White warehou: All Lookdown dory: All Black cardinalfish: All Ribaldo: RIB3-RIB8 Patagonian toothfish: All	Rubyfish: All (OEO) Alfonsino: All (OEO) Barracouta: BAR4, BAR5, BAR7 (SQU) Redbait: All (JMA) English Mackerel: EMA3, EMA7 (JMA) 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, management of some stocks falls under the National Deepwater Plan and the remainder are managed under the National Inshore Finfish Plan.



Figure 1: The three components of the National Deepwater Plan (for more information on overall structure of the National Deepwater Plan see page 3)

From 1 July 2012 the management of New Zealand’s deepwater fisheries will be implemented through the National Fisheries Plan for Deepwater and Middle-depth Fisheries (National Deepwater Plan), which collectively consists of the three parts shown in Figure 1.

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 has been approved by the Minister of Fisheries under Section 11A of the Fisheries Act 1996. This means that it must be considered each time the Minister makes decisions or recommendations concerning regulation or control of fishing or any sustainability measures relating to the stocks managed through this Plan.

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. To date, fishery-specific chapters have been completed for the hoki, orange roughy, ling, and southern blue whiting fisheries.

The fishery-specific chapters describe the operational objectives for each target fishery and its key 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.

Part 2 of the National Deepwater Plan consists of an Annual Operational Plan, which provides up-to-date management overviews for fisheries with completed chapters in Part 1B, the Management Actions scheduled for delivery during the financial year for which the Operational Plan applies, and the Management Services required to deliver the Management Actions. The Annual Operational Plan is primarily an internal planning and prioritisation document so will not be approved by the Minister for Primary Industries under section 11A. However, advice will be provided to the Minister regarding any statutory interventions required to regulate deepwater fisheries. The contents and structure of this Annual Operational Plan are described in the following section.

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

The 2012-13 Deepwater Annual Operational Plan

This Annual Operational Plan (AOP) describes the specific Management Actions that will be implemented during the 2012-13 financial year, with respect to all fisheries managed under the National Deepwater Plan. Completion of Management Actions will contribute to meeting the Management Objectives, outcomes and goals described in Part 1 of the National Deepwater Plan. An overview of Management Objectives can be found at the start of this AOP.

The AOP also includes the details of the Management Services (compliance, research, regulatory, etc.) that will be required to deliver the specified Management Actions, as well as the agency (the Ministry or DWG) and business group responsible for delivery. In situations where there are limited resources or competing tasks and objectives across deepwater fisheries, specified services are also prioritised.

The AOP also includes a section detailing the current management approach, the stock status, and the 2012-13 research to be conducted on each of the fisheries currently included in the National Deepwater Plan.

There will be an internal prioritisation process within the Ministry across AOPs from the different fisheries (Deepwater, Highly Migratory Species, Inshore finfish, Inshore shellfish, Freshwater) to address competing needs for Ministry resources. As a result of this cross prioritisation process some of the management actions in this AOP may be subsequently reprioritised.

Delivery of the AOP will be assessed through the Annual Review Report (ARR) to be completed at the end of each fishing year. The ARR against this AOP will be completed in November 2014.²

² A Pilot Annual Review Report was completed in July 2012 which reported on performance against the 2010-11 Pilot Annual Operational Plan.

Scope of the 2012-13 Deepwater Annual Operational Plan:

The 2012-13 AOP includes the following sections, described in more detail below:

- Part 2A: Management Actions for 2012-13
- Part 2B: Management Services required for 2012-13
- Part 2C: Management overview of deepwater fisheries

Part 2A: Management Actions for 2012-2013

Part 2A details the Management Actions that will be undertaken during the 2012-13 financial year. All Management Actions will contribute to delivery of Management Objectives specified in the National Deepwater Plan Part 1A. Some Management Actions are also linked to fishery-specific Operational Objectives, while others will apply across all deepwater fisheries.

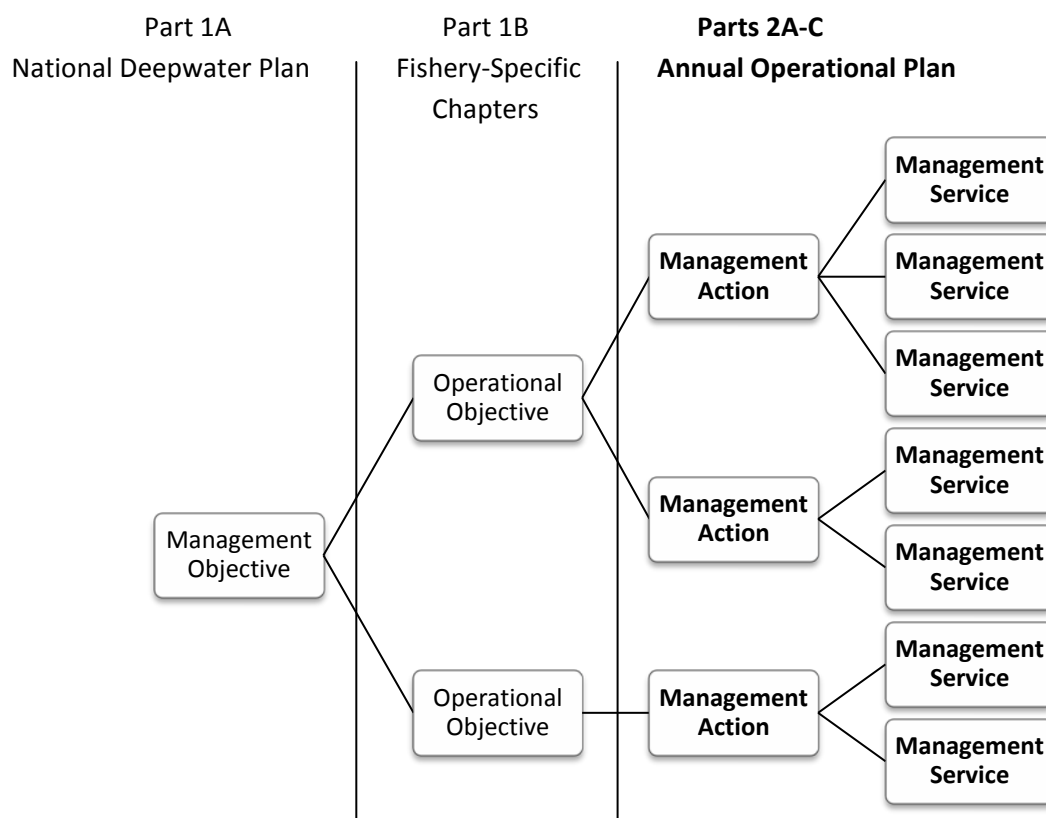


Figure 2: Flowchart of progression from Management Objective to Management Services specified in this Annual Operational Plan

Within Part 2A all Management Actions are listed and detailed in individual boxes. Each box lists the Management Action title, associated background information, and any Management or Operational Objectives that it correlates with. Within each Management Action, specific actions have been listed as either ‘Business as Usual’, which means the action is one the Deepwater Team now does every year, or ‘Actions for 12/13’, which denotes a new action for the upcoming financial year.

The order of the Management Actions is twofold, one by a prioritisation number on the left hand side of the table, and two by colour. The top 11 Management Actions are coloured Green and represent actions that are core functions of the Deepwater Team. These actions are an essential part of managing deepwater fisheries. The rest of the Management Actions are coloured blue and grouped into high, medium, and low priority.

Part 2B: Management Services required during the 2012-2013 financial year

Part 2B details the Management Services that will be required to deliver the Management Actions described in Part 2A of this AOP.

The Ministry structure has changed due to the merger of the Ministry of Fisheries, Ministry of Agriculture and Forestry, and the New Zealand Food Safety Authority. Consequently, the business groups that will support deepwater fisheries management in delivering the management actions for the 2012/13 financial year have changed since the last 2011/12 AOP.

Services will be delivered predominantly through the Ministry's Resource Management & Programmes Directorate (RMP) (Table 4), however some services will be delivered with assistance or in partnership with newly formed Directorates (Table 17). Furthermore, due to the collaborative relationship between the Ministry and the DWG, some actions may be delivered solely by the Ministry, solely by DWG, or jointly by the Ministry and DWG. Given these three relationships Part 2B is split into three sections: RMP, Wider Ministry, and DWG.

Each section within Part 2B details the services that will be required to support the delivery of the Management Actions specified in Part 2A. The tables listed in this section, below each business group, include a prioritisation number, management action description, and detail the specific services required from that business group. The number on the left side of the table links back to section 2A which outlines the management actions in more details.

Part 2C: Management overview and key management settings and performance indicators

The AOP also includes a section which provides an overview of the current management approach and harvest strategy for each target (Tier 1) fishery managed through the National Deepwater Plan.³ Summaries of management settings and performance indicators are also provided for bycatch (Tier 2) species. For each species (Tier 1 & 2) managed through Part 1B of the National Deepwater Plan, a summary table is presented which details the following management settings and performance indicators:⁴

1. Relevant TACs, TACCs, and deemed value rates.
2. The harvest strategy in place for the fishery. For some stocks, at least in the early years of the National Deepwater Plan, this will simply reflect the status quo management regime until a more specific harvest strategy is developed. Once finalised, a harvest strategy will include reference points, harvest control rules and a rebuild strategy in conformance with the Harvest Strategy Standard.
3. Current status of environmental interactions of deepwater fisheries.
4. Any economic indicators which will provide a measure of whether the value maximisation objectives are being achieved.
5. Performance of the fishery against compliance benchmarks (where appropriate).

³ Part 1B of the National Deepwater Plan currently includes orange roughy, hoki, southern blue whiting, and ling.

⁴ Information on these five items may remain unchanged from one year to the next, or may change as new information becomes available or as stock-specific objectives are finalised.

Part 2A: Deepwater Fisheries Management Actions for delivery during the 2012-2013 financial year

Table 2: Priority level of Management Actions (MA)

Priority Level	MA Number
Core Functions	1-11
High	12-20
Medium	21-27
Low	28-33

Table 3: Management Actions for deepwater Fisheries Management for 2012/13 financial year

1	Review stocks for the 1 October and 1 April sustainability rounds, including deemed values	
	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 criteria in the deemed value standard.	
	<ul style="list-style-type: none"> October 2012: tbc April 2013: tbc 	
	<p>Action linked to Management Objectives 1.1, 1.3, 2.1, 2.2, 2.4, 2.5, and 2.6</p> <p>Operational Objective(s): HOK 2.2 and 2.3, ORH 2.3, SBW, LIN and all deepwater fisheries</p>	
2	Continue the implementation of the National Deepwater Plan	
	Implementation of the National Deepwater Plan for the 2012/13 financial year includes:	
	<p>Actions for 12/13</p> <ul style="list-style-type: none"> Completion of fishery-specific chapters for HAK, OEO, SCI, and JMA Integrating actions resulting from the NPOA-Seabird review into Fisheries Plan process 	<p>Business as usual:</p> <ul style="list-style-type: none"> Annual Operational Plan for 2013/14 Annual Review Report 2011/12
	<p>Action linked to all Management Objectives</p> <p>Operational Objective(s): HOK1.4, ORH 1.1 and 1.2 and all deepwater fisheries</p>	
3	Ensure completion of Ministerial communications including briefings, Ministerials,⁵ Special Permits, and Official Information Act (OIA) requests within designated timeframes	
	This Management Action will require significant attention throughout the year. As such the Ministry has responsibility to:	
	<ul style="list-style-type: none"> 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 letters to Government regarding fisheries issues Review and assess any deepwater special permits 	
	<p>Action linked to all Management Objectives</p> <p>Operational Objective: N/A</p>	

⁵ Ministerials are responses to the public on behalf of the Minister for Primary Industries or the Prime Minister.

4	Ensure sufficient and appropriate engagement with tangata whenua through the integration of Iwi Fisheries Plans (IFPs) and Forum Fisheries Plans (FFPs) into the National Deepwater Plan and its components
	<p>The IFP strategy was established in 2011/12, and is designed to provide for those iwi recognised under Schedule 3 of the <i>Treaty of Waitangi (Fisheries Claims) Settlement Act 1992</i>. Currently there are five completed FFPs: CIFF @ 44 representing Chatham Island Iwi, Te Waka a Maui me ona Toka representing South Island Iwi, Te Hiku o te Ika representing Far North Iwi, Mai i nga Kuri a Whareki Tihirau representing the Bay of Plenty Iwi and Te Taihauaruru representing the Manawatu/Horowhenua/Kapiti/Taranaki Iwi. One IFP is completed by Rangitane who represent the Manawatu/Wairapa Iwi.</p> <p>Business as Usual:</p> <ul style="list-style-type: none"> Continue engagement with tangata whenua and address any issues as necessary through the FFPs <p>Action linked to Management Objectives 1.6 and 1.7</p> <p>Operational Objective(s): HOK 1.4, 1.10, 1.11, 1.12, ORH 1.3, 1.9, 1.10, and all deepwater fisheries</p>
5	Ensure continued implementation of registration process and risk-based observer coverage for foreign charter vessels (FCVs)
	<p>Although the Ministerial Inquiry into the use and operation of FCVs was submitted to government in February 2012, the usual registration process will continue until recommendations are formally implemented.</p> <p>Business as Usual:</p> <ul style="list-style-type: none"> Aid where needed in the risk profiling, registration, and subsequent observer coverage process <p>Action linked to all Management Objectives</p> <p>Operational Objective: N/A</p>
6	Monitor management regime for SQU6T fishery to address interactions with sea lions
	<p>Actions for 12/13</p> <ul style="list-style-type: none"> Contract and support the review of the Breen-Fu-Gilbert model Contract and support research into pup decline at the Auckland Islands
	<p>Business as Usual:</p> <ul style="list-style-type: none"> Collaborative monitoring and reporting of effort within SQU6T between Ministry and DWG
	<p>Action linked to Management Objectives 1.1, 1.3, 1.5, and 2.5</p> <p>Operational Objective(s): N/A</p>
7	Maintain an open and transparent management environment by ensuring that all management information is available and easily accessible for stakeholder and tangata whenua consideration
	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> Work with the Communications and Channels Directorate to determine an appropriate internet location to post important deepwater fisheries management information
	<p>Business as Usual:</p> <ul style="list-style-type: none"> Increase and uphold transparency of deepwater fisheries management through distribution of the AOP, ARR, new chapters within the National Deepwater Plan, and general information relating to the management of deepwater fisheries
	<p>Action linked to Management Objectives 1.6 and 1.7</p> <p>Operational Objective(s): HOK 1.4, ORH 1.8, and all deepwater fisheries</p>
8	Monitor non-regulatory management measures relating to Sub-QMA catch limits and Hoki Management Areas (HMAs)
	<p>In conjunction with industry, the Ministry has implemented non-regulatory catch split arrangements in the hoki, orange roughy, and oreo fisheries. HMAs, also non-regulatory, have been created to protect important areas for juvenile hoki.</p> <p>Business as Usual:</p> <ul style="list-style-type: none"> Ensure continued monitoring to confirm effectiveness of these measures Communicate monitoring results with stakeholders through the ARR <p>Action linked to all Management Objectives</p> <p>Operational Objective: HOK 2.3, 2.5, ORH 2.1</p>

9	<p>Assess and manage the level of seabird interactions with deepwater fishing activity</p> <p>Seabird interactions are managed using regulatory and non-regulatory measures, including Vessel Management Plans (VMPs) which outline vessel-specific seabird mitigation practices.</p> <table border="1"> <tr> <td data-bbox="240 331 667 600"> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Work with the DWG to further develop the VMP process • Implement any relevant results from the review of the NPOA-Seabirds into the VMP process </td><td data-bbox="667 331 1386 600"> <p>Business as Usual:</p> <ul style="list-style-type: none"> • Continue to monitor interactions with seabirds, at-sea risk mitigation activities, and continue to support the industry education programme • Continue to audit compliance with mitigation measures to ensure the non-regulatory management regime remains effective and is reported transparently to stakeholders through the ARR </td></tr> </table> <p>Action linked to Management Objectives 2.5 & 1.6</p> <p>Operational Objective: HOK 2.10 and 2.13 and all deepwater fisheries</p>	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Work with the DWG to further develop the VMP process • Implement any relevant results from the review of the NPOA-Seabirds into the VMP process 	<p>Business as Usual:</p> <ul style="list-style-type: none"> • Continue to monitor interactions with seabirds, at-sea risk mitigation activities, and continue to support the industry education programme • Continue to audit compliance with mitigation measures to ensure the non-regulatory management regime remains effective and is reported transparently to stakeholders through the ARR
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10	<p>Assess and manage the level of marine mammal interactions with deepwater fishing activity</p> <p>Marine mammal interactions are managed using regulatory and non-regulatory measures, including a Marine Mammal Operation Procedure (MMOP) which outlines vessel-specific risk mitigation practices and proper handling of incidental marine mammal captures.</p> <table border="1"> <tr> <td data-bbox="240 851 667 1097"> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Work with DWG as they lead on increasing communication with coastal vessel operators, to better understand the level of interactions between these fisheries and marine mammals </td><td data-bbox="667 851 1386 1097"> <p>Business as Usual:</p> <ul style="list-style-type: none"> • Continue to monitor interactions with marine mammals, at-sea risk mitigation activities, and continue to support the industry education programme • Continue to audit adherence to MMOP to ensure the non-regulatory management regime remains effective and is reported transparently to stakeholders through the ARR </td></tr> </table> <p>Action linked to Management Objectives 1.6 and 2.5</p> <p>Operational Objective: HOK 2.11 and 2.13, SBW2.2 and 2.3 and all deepwater fisheries</p>	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Work with DWG as they lead on increasing communication with coastal vessel operators, to better understand the level of interactions between these fisheries and marine mammals 	<p>Business as Usual:</p> <ul style="list-style-type: none"> • Continue to monitor interactions with marine mammals, at-sea risk mitigation activities, and continue to support the industry education programme • Continue to audit adherence to MMOP to ensure the non-regulatory management regime remains effective and is reported transparently to stakeholders through the ARR
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11	<p>Assess and manage the nature and extent of benthic interactions from deepwater fishing activity</p> <p>As benthic habitats can be important breeding grounds, foraging areas, or refuges, it is important to ensure that any impact is carefully managed and remains within acceptable limits.</p> <p>Business as Usual:</p> <ul style="list-style-type: none"> • Continue to assess the nature and extent of the historical and most recent trawl footprint by Tier 1 species • Monitor the impact of fishing on benthic species • Work with the wider Ministry as spatial management of New Zealand's EEZ develops <p>Action linked to Management Objective 2.7</p> <p>Operational Objective: HOK 2.15, ORH 2.9, SBW2.4 and all deepwater fisheries</p>		
12	<p>Develop and implement specific harvest strategies for Tier 1 species, which enable economically viable deepwater and middle-depth fisheries over the long-term</p> <p>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 (MSE) will be undertaken which assesses a range of different management strategies, including those which incorporate economic aspects of the fishery.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Continue with development and implementation of harvest strategies for ORH, SBW, HAK, and CDL2 • Start development of a harvest strategy for SCI • Update the MSE for HOK, and implement any subsequent results <p>Action linked to Management Objective 1.1, 1.2, 2.1</p> <p>Operational Objective: HOK 1.3, HOK2.5, ORH 1.11, ORH 2.1, SBW 2.1, LIN2.1, and all deepwater fisheries</p>		

13	<p>Assist the wider Ministry in implementing Cabinet decisions made in response to the report of the Ministerial Inquiry into the Use and Operation of FCVs</p> <p>Following the Inquiry's report, Cabinet immediately decided to implement recommendations 1-6. In May 2012 Cabinet made a further decision to require all FCVs to re-flag to New Zealand within four years.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Aid in the implementation of recommendations when required • Work with the Ministry of Business, Innovation, and Employment and Maritime New Zealand throughout the re-flagging process <p>Action linked to Management Objective 1.1, 1.2, 2.1</p> <p>Operational Objective: NA</p>		
14	<p>Facilitate continued Marine Stewardship Council (MSC) Certification of deepwater fisheries, including Conditions of Certification (CoCs) and passing annual surveillance audits</p> <p>The Hoki 2012 recertification is on schedule for a decision by August 2012 and the SBW certification was completed in April 2012. An audit will occur in the 2012/13 year for each of these certifications, which will indicate to MSC how the fishery is progressing on any CoCs.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Support the DWG on the surveillance audit(s) • Implement the Action Plan to address any CoCs • Update the PBR estimates for the SBW fishery by 2013 • Aid DWG in compiling necessary information for any further MSC candidate fisheries <p>Action linked to Management Objectives 1.1 and 1.5</p> <p>Operational Objective: HOK 1.1, SBW 1.1, LIN 1.1</p>		
15	<p>Assist in finalising the National Plan of Action for Seabirds (NPOA Seabirds)</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Assist where needed in finalising the National Plan of Action (NPOA) for Seabirds and consulting with deepwater stakeholders • Ensure the management of seabird interactions within deepwater fisheries is consistent with the NPOA <p>Action linked to Management Objectives 1.6 and 2.5</p> <p>Operational Objective: HOK 2.10 and 2.13, SBW2.2 and 2.3 and all deepwater fisheries</p>		
16	<p>Assess and manage the level of shark interactions with deepwater fishing activity and assist with the review of the National Plan of Action for Sharks (NPOA Sharks)</p> <p>The NPOA for Sharks is Scheduled for review in the 2012/13 financial year, and will require input from the Deepwater Fisheries Management team.</p> <table border="1" data-bbox="240 1552 1388 1758"> <tr> <td data-bbox="240 1552 783 1758"> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Support the review of the NPOA Sharks • Conduct a Level 1 Risk Assessment for Tier 3 species (October 2013) • Collaborate with DWG to develop a Shark Operational Plan for all deepwater vessels </td><td data-bbox="783 1552 1388 1758"> <p>Business as Usual:</p> <ul style="list-style-type: none"> • Continue to increase our information about shark interactions • Continue to minimise the use of generic reporting codes through observer training and circulation of the updated Identification Guide </td></tr> </table> <p>Action linked to all Management Objectives 1.6, 2.5, and 2.6</p> <p>Operational Objective: HOK 2.12 , 2.13, and all deepwater fisheries</p>	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Support the review of the NPOA Sharks • Conduct a Level 1 Risk Assessment for Tier 3 species (October 2013) • Collaborate with DWG to develop a Shark Operational Plan for all deepwater vessels 	<p>Business as Usual:</p> <ul style="list-style-type: none"> • Continue to increase our information about shark interactions • Continue to minimise the use of generic reporting codes through observer training and circulation of the updated Identification Guide
<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Support the review of the NPOA Sharks • Conduct a Level 1 Risk Assessment for Tier 3 species (October 2013) • Collaborate with DWG to develop a Shark Operational Plan for all deepwater vessels 	<p>Business as Usual:</p> <ul style="list-style-type: none"> • Continue to increase our information about shark interactions • Continue to minimise the use of generic reporting codes through observer training and circulation of the updated Identification Guide 		

17	<p>Ensure recommendations from the observer optimisation project are implemented so that 1) sufficient and appropriate data are collected and 2) that information and communication channels are operating effectively</p>		
	<p>In 2010-11 an observer optimisation project was commenced. The three main areas of focus for the project are 1) technical optimisation; 2) improvement of communication; 3) phased implementation to full coverage of the deepwater fleet.</p>		
	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Finalise the observer optimisation project • Begin to formalise and implement recommendations resulting from the project • Adapt coverage as necessary to take account of increased observer services required on FCV as a result of the government's decision to require observers on all FCVs 		
	<p>Action linked to Management Objective 1.4</p>		
	<p>Operational Objective: HOK 1.6, ORH 1.2 and all deepwater fisheries</p>		
18	<p>Whilst working to achieve credible third party certification, provide information and communications to maximise market access for New Zealand deepwater fisheries</p>		
	<p>The focus on this Management Action is to research credible third party certification schemes and increase the availability of accurate consumer information to combat inaccuracies about the fisheries management regime in the media or in consumer marketing campaigns.</p>		
	<table> <tr> <td data-bbox="240 907 815 1077"> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Research credible third party certification schemes • Create market fact sheets where needed (SBW, HAK, JMA and Sharks) </td><td data-bbox="815 907 1377 1077"> <p>Business as Usual:</p> <ul style="list-style-type: none"> • Update information sheets on key issues as needed </td></tr> </table>	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Research credible third party certification schemes • Create market fact sheets where needed (SBW, HAK, JMA and Sharks) 	<p>Business as Usual:</p> <ul style="list-style-type: none"> • Update information sheets on key issues as needed
<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Research credible third party certification schemes • Create market fact sheets where needed (SBW, HAK, JMA and Sharks) 	<p>Business as Usual:</p> <ul style="list-style-type: none"> • Update information sheets on key issues as needed 		
	<p>Action linked to all Management Objectives</p>		
	<p>Operational Objective: N/A</p>		
19	<p>Engage on environmental issues relating to management of deepwater fisheries through the Environmental Engagement Forums</p>		
	<p>In order to provide increased engagement beyond the section 12 consultation requirements, the Ministry will establish Environmental Engagement Forums (EEFs). The EEFs will focus on Inshore, Deepwater, and National environmental issues.</p>		
	<p>Actions for 2012/13:</p> <ul style="list-style-type: none"> • Hold initial EEF (National-level Forum) • Finalise Terms of Reference 		
	<p>Action linked to Management Objectives 1.6 and 1.7</p>		
	<p>Operational Objective(s): HOK 1.4, 1.10, 1.11, ORH 1.3, 1.9, 1.10 and all deepwater fisheries</p>		
20	<p>Develop and implement a process for identifying additional research, including a formalised process for tender evaluations</p>		
	<p>The 10 Year Research Programme recognises that not all research required can be planned in advance. For this reason, the 10 Year Research Programme allows for annual planning and prioritisation of additional research.</p>		
	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Develop and implement a process for identifying and tendering additional research in consultation with the wider Ministry, the Deepwater Group, and stakeholders 		
	<p>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</p>		
	<p>Operational Objective(s): HOK1.6, ORH1.5, SBW1.4, LIN1.4, and All deepwater fisheries</p>		

21	<p>Address outcomes of the risk-based approach to seabird interactions in deepwater fisheries, focusing on the scampi fishery</p> <p>Preliminary results from the risk assessment on seabird interactions indicate that the scampi fishery poses the greatest risk to seabirds of all the deepwater fisheries. This Management Action is focused on addressing and minimising that risk.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Improve the Ministry's understanding of the nature and extend of risk through optimised observer monitoring • Continue to develop and implement seabird mitigation measures within the scampi fleet, calling on results from the Scampi Seabird Mitigation Workshop (March 2012) for guidance <p>Action linked to Management Objective 2.5</p> <p>Operational Objective: All deepwater fisheries</p>
22	<p>Develop and implement management procedures for Tier 2 species</p> <p>Management of Tier 2 species is often limited by information availability, therefore management procedures may range from developing components of a Harvest Strategy to analysis of CPUE trends or signals from a trawl survey.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Identify most appropriate way to draw on completed characterisations, to develop management protocols for Tier 2 Species <p>Action linked to Management Objective 2.1</p> <p>Operational Objective: HOK 2.4, ORH 2.1, LIN2.2</p>
23	<p>Determine habitats covered by an agreed definition of 'habitat of particular significance for fisheries management'</p> <p>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'.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Continue work on definition of habitat of particular significance for fisheries management • Identify potential habitats of particular significance for deepwater fisheries beginning with the hoki fishery in 2012-13 <p>Action linked to Management Objective 2.3</p> <p>Operational Objective: HOK 2.8</p>
24	<p>Ensure continued monitoring of fisher compliance against agreed benchmarks and non-regulatory management measures and ensure appropriate action is taken when compliance drops below these agreed benchmarks and non-regulatory measures</p> <p>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.</p> <p>Business as Usual:</p> <ul style="list-style-type: none"> • 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 <p>Action linked to Management Objective 1.5</p> <p>Operational Objectives: HOK 1.9, HOK 1.10, ORH 1.6, ORH1.7, SBW1.3, LIN1.3</p>

25	<p>Continue the compliance risk profile process for hoki and begin another risk profile for a further deepwater fishery</p> <p>A Level 1 risk profile was conducted on the hoki fishery in 2011/12. Risk profiling for 2012/13 will focus on SBW and ORH fisheries</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Work with wider Ministry and industry to implement any recommendations from previous risk profiling • Work with Compliance to finalise risk profiles for SBW and ORH <p>Action linked to Management Objective 1.5</p> <p>Operational Objectives: HOK 1.9, ORH 1.6, SBW1.3,</p>		
26	<p>When required, work with industry to change QMA boundaries to align with biological distributions</p> <p>Over time, new information may become available which indicates that existing QMAs may not be consistent with biological stocks. In this case, industry (or the Ministry) can request that a QMA is considered for amalgamation or division providing the majority of quota owners support the request.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Assess the QMA boundaries with a focus on Tier 2 species • Respond to any industry requests for changes to stock boundaries <p>Action linked to Management Objective 1.1</p> <p>Operational Objective(s): Lin 1.5 and all deepwater fisheries</p>		
27	<p>Implement the 10 Year Research Programme and 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).</p> <p>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.</p> <p>Business as Usual:</p> <ul style="list-style-type: none"> • Assist Fisheries Science as necessary to implement the 12/13 10 Year Research Programme research projects as listed in Table 9 • 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 20 <p>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</p> <p>Operational Objective(s): HOK1.6, ORH1.5, SBW1.4, LIN1.4, and All deepwater fisheries</p>		
28	<p>Deliver collaborative management of deepwater fisheries with Deepwater Group Ltd (DWG) through implementation of the Memorandum of Understanding (MOU)</p> <p>The 2010 updated MOU called for the establishment of two new bodies: the Deepwater Management Forum and the Deepwater Secretariat. The Deepwater Management Forum was established in 2011/12.</p> <table border="1" data-bbox="240 1579 1388 1657"> <tr> <td data-bbox="240 1579 813 1657"> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Formalise the Deepwater Secretariat </td><td data-bbox="813 1579 1388 1657"> <p>Business as Usual:</p> <ul style="list-style-type: none"> • Progress Deepwater Management Forum </td></tr> </table> <p>Action linked to all Management Objectives</p> <p>Operational Objective(s): HOK 1.4, ORH 1.9, and all deepwater fisheries</p>	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Formalise the Deepwater Secretariat 	<p>Business as Usual:</p> <ul style="list-style-type: none"> • Progress Deepwater Management Forum
<p>Actions for 12/13:</p> <ul style="list-style-type: none"> • Formalise the Deepwater Secretariat 	<p>Business as Usual:</p> <ul style="list-style-type: none"> • Progress Deepwater Management Forum 		

29	<p>Finalise a framework for Ecological Risk Assessment (ERA)</p> <p>An ERA is conducted to identify and evaluate the risk of undesirable consequences to the ecosystem due to fishing. Developing this technique supports an ecosystem-based approach of fisheries management as it better enables management to prioritise and reduce risk across fisheries.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> Finalise the development of an appropriate ERA process Pilot the ERA process with a selected deepwater fishery during 2012/13 <p>Action linked to Management Objectives 2.3, 2.4, 2.5, 2.6, and 2.7</p> <p>Operational Objective: ORH 2.4</p>		
30	<p>Monitor catch of, and assess risks to, non-QMS (Tier 3) species from deepwater fishing activity</p> <p>To identify any sustainability issues with non-QMS stocks, the nature and extent of interactions with these species will be monitored and assessed as part of a Level 1 risk assessment.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> Continue to monitor catch of Tier 3 species through commercial catch records and report to stakeholders through the ARR Use the ERA process in development to assess the risk to New Zealand's Tier 3 species <p>Action linked to Management Objectives 2.2 and 2.4</p> <p>Operational Objectives: HOK 2.14, ORH 2.6, and all deepwater fisheries</p>		
31	<p>Assist the Ministries' Policy Branch with review of policy developments and any necessary fisheries management information</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> The Policy Branch within the Ministry may from time to time need information, feedback, and review of working documents that relate to New Zealand fisheries <p>Action linked to Management Objectives 1.2, 1.5</p> <p>Operational Objective(s): N/A</p>		
32	<p>Monitor sub-Antarctic Marine Protected Areas (MPAs) as needed</p> <p>MPAs have been approved for implementation in the territorial seas of the Antipodes, Bounty and Campbell Islands. These MPAs will be a combination of marine reserves and restrictions on Danish seining that complement the existing restrictions on trawling and dredging.</p> <table border="1" data-bbox="240 1317 1377 1438"> <tr> <td data-bbox="240 1317 798 1438"> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> Contribute to the development of a monitoring programme once MPAs are implemented </td><td data-bbox="798 1317 1377 1438"> <p>Business as Usual:</p> <ul style="list-style-type: none"> Continue to monitor until a formalised monitoring programme has been established </td></tr> </table> <p>Action linked to all Management Objectives</p> <p>Operational Objective: N/A</p>	<p>Actions for 12/13:</p> <ul style="list-style-type: none"> Contribute to the development of a monitoring programme once MPAs are implemented 	<p>Business as Usual:</p> <ul style="list-style-type: none"> Continue to monitor until a formalised monitoring programme has been established
<p>Actions for 12/13:</p> <ul style="list-style-type: none"> Contribute to the development of a monitoring programme once MPAs are implemented 	<p>Business as Usual:</p> <ul style="list-style-type: none"> Continue to monitor until a formalised monitoring programme has been established 		
33	<p>Manage the development of the Patagonian toothfish fishery, including any applications for special permits</p> <p>Patagonian toothfish entered the QMS on 1 October 2010. Research into this fishery is planned and may require special permits to be approved.</p> <p>Actions for 12/13:</p> <ul style="list-style-type: none"> Assist with establishing a management programme that will increase our understanding of the stock while supporting the commercial development of the fishery <p>Action linked to Management Objectives 1.1, 1.2, 1.3, 2.4, 2.6</p> <p>Operational Objective(s): N/A</p>		

Part 2B: Service requirements to support deepwater fisheries management during the 2012-13 financial year

I. Resource Management & Programmes (RMP)

Table 4: Business Groups, and teams within the Ministry RMP Branch through which fisheries management services will be delivered

RMP Directorates	Team	Description of responsibilities
Fisheries Management	Deepwater	Guide deepwater fisheries management at a national level. Operational management of NZ deepwater fisheries
	Inshore	Guide inshore fisheries management at a national level. Operational management of NZ inshore and freshwater fisheries
	Highly Migratory Species (HMS)	Guide HMS fisheries management at a national and international level. Operational management of NZ HMS fisheries
	Fisheries Stock Assessment (Science)	Scientific advice on stock assessments and research to support fisheries management decisions
	Aquatic Environment (Science)	Scientific advice on the aquatic environment and research to support fisheries management decisions
	Spatial Allocations	Operational management of aquaculture operations, MPA policy, and spatial tools including mātaihai reserves
Observer Services Unit	Observer Services Unit	Coordination and administration of at-sea observer programme
Administration & Business Support Unit	Support Officers	Provide administrative and budgetary support, including communication with Ministerials and Business Support

1. Fisheries Management

The Fisheries Management group is responsible for the operational management of New Zealand fisheries. The primary focus is to ensure that fisheries are managed within legislative requirements so as to provide for utilisation across all sectors while ensuring all fisheries remain sustainable. This involves determining when management interventions are required and the form that these interventions could take – regulatory or non-regulatory. The Fisheries Management Directorate also includes a science component to provide expert advice and interpretation of scientific information which feeds into fisheries management (Table 4).

A. Deepwater team

The Fisheries Management Deepwater Team is responsible for overseeing the management of New Zealand's deepwater and middle-depth fisheries and the implementation of the National Deepwater Plan including this Annual Operational Plan. Therefore the Deepwater team will lead on all identified management actions listed in Table 3.

B. Inshore and Highly Migratory Species (HMS) team

The Inshore Fisheries Management Team is responsible for overseeing the management of New Zealand's inshore commercial, customary, and recreational fisheries. Certain fish species can often be caught within both deepwater and inshore commercial fisheries, therefore responsibility for these fish stocks have been split between management groups as appropriate. All highly migratory species, such as tuna, are managed by the HMS team.

Although governed by different National Fisheries Plans, Deepwater, HMS, and Inshore teams work together on managing national and cross-fishery issues. The management actions listed below address such cross fishery issues.

Table 5: Actions and services required from the Fisheries Management – Inshore Team and HMS Team

#	Action	Service	Timeframe
4	Ensure sufficient and appropriate engagement with tangata whenua through the integration of Iwi Fisheries Plans (IFP) and Forum Fisheries Plans (FFP) into the National Deepwater Plan and its components	FM-Inshore will lead engagement with tangata whenua through the regional Fisheries Forums Ensure any issues relating to deepwater fisheries that emerge through IFPs and FFPs are incorporated into Deepwater Annual Operational Plans	Ongoing As required
15	Assist in finalising the National Plan of Action for Seabirds (NPOA Seabirds)	FM-Inshore to lead in the development of the NPOA for Seabirds HMS, Inshore, and Deepwater teams will work collaboratively to inform Stakeholders about the NPOA Seabirds	Jul-Dec 2012
16	Assess and manage the level of shark interactions with deepwater fishing activity and assist with the review of the National Plan of Action for Sharks (NPOA Sharks)	HMS to lead the review of the NPOA Sharks HMS, Inshore, and Deepwater teams will work collaboratively to inform Stakeholders about the revised NPOA Sharks	Oct-Dec 2012 Ongoing
19	Facilitate engagement on environmental issues relating to the management of deepwater fisheries through the EEFs	Work with Deepwater team to hold the first meeting and finalise the Terms of Reference for the EEFs	June-Dec 2012
23	Work to define 'habitat of particular significance for fisheries management'	HMS, Inshore and Deepwater collectively define 'habitats of particular significance' for fisheries management	Oct -Dec 2012

C. Spatial Allocations

The Spatial Allocations team is responsible for the operational management of aquaculture and spatial tools including mātaihai, taiāpure, marine reserves, seamount closures, and implementation of the MPA Policy.

Table 6: Services required from the Spatial Allocations team

#	Action	Service	Timeframe
11	Assess and manage the nature and extent of benthic interactions from deepwater fishing activity	Provide information to Deepwater team on any spatial matters that may impact deepwater fishing	June 2012 Jan-June 2013

D. Science team (Stock Assessment & Aquatic Environment)

The Fisheries Management Science teams are responsible for providing scientific advice and ensuring the quality and integrity of scientific information used in fisheries management decisions. For 2012/13 the Science teams will commence further implementation of the Research Standard. This involves the Stock Assessment and Aquatic Environment Working Groups allocating a score to all finalised research reports, as outlined in the Research Standard, to ensure information used in management decisions is scientifically robust. For more information on the Research Standard's ranking system visit: www.fish.govt.nz.

Table 7: Actions and services required from the Fisheries Management – Science team

#	Action	Service	Timeframe
1	Review stocks for 1 October and 1 April sustainability rounds, including deemed values	Scientific review of all advice papers for 1 October sustainability round Scientific review of all advice papers for 1 April sustainability round	Aug 2012 March 2013
2	Continue implementation of the National Deepwater Plan	Scientific review of HAK, OEO, JMA, and SCI fishery-specific chapters Scientific review of Annual Review Report Scientific review and input to 2012-13 Annual Operational Plan	Jan-Jun 2013 Oct-Dec 2012 April 2013
6	Monitor management regime for SQU6T fishery to address interactions with sea lions	Scientific review of management advice for squid Review the Breen-Fu-Gilbert model, and further research into New Zealand sea lion decline	Dec 2012
9	Assess and manage the level of seabird interactions with deepwater fishing activity	Provide scientific review of annual estimates of seabird captures in deepwater fisheries	Ongoing
10	Assess and manage the level of marine mammal interactions with deepwater fishing activity	Review annual estimates of marine mammal captures in deepwater fisheries	Ongoing
11	Assess and manage the nature and extent of benthic interactions from deepwater fishing activity	Review research results of trawl footprint analysis	June 2012

#	Action	Service	Timeframe
12	Develop and implement specific harvest strategies for Tier 1 species, which enable economically viable deepwater and middle-depth fisheries over the long-term	Provide scientific review and advice on any management regime supporting a harvest strategy, including but not limited to reference points, rebuild strategies, and harvest control rules	Ongoing
14	Facilitate continued MSC Certification of deepwater fisheries including delivering on any CoCs, and passing the annual surveillance audits	Provide scientific advice on all relevant MSC processes	Ongoing
15	Assist in finalising the National Plan of Action for Seabirds (NPOA Seabirds)	Provide scientific advice during the development of the NPOA Seabirds	Jul-Dec 2012
16	Assess and manage the level of shark interactions with deepwater fishing activity and assist with the review of the National Plan of Action for Sharks (NPOA sharks)	Review annual estimates of protected shark captures in deepwater fisheries Provide scientific advice into the development of the NPOA Sharks	Ongoing Oct-Dec 2013
17	Ensure recommendations from observer optimisation project are implemented so that 1) sufficient and appropriate data is collected and 2) information and communication channels are operating effectively	Provide scientific advice on implementation of recommendations from observer optimisation project Provide scientific advice on data collection needs for research projects	July 2012 Ongoing
20	Develop and implement a process for identifying additional research, including a formalised process for tender evaluations	Work with deepwater to implement an effective process for identifying and executing additional research contracts	Oct-Dec 2012
21	Address outcomes of the risk based approach to seabird interactions with deepwater fisheries, with a focus on the scampi fishery	Provide expert scientific advice into process to address risks to seabirds in the scampi fishery	June-Dec 2012
22	Develop and implement management procedures for Tier 2 species	Provide scientific expertise and advice on development of biological reference points for identified deepwater fish stocks	Ongoing
23	Determine habitat covered by agreed definition of 'habitats of particular significance' for fisheries management	Provide scientific advice on the development and application of "habitats of particular significance for fisheries management"	Oct-Dec 2012
26	When warranted work with industry to change QMS boundaries which are inconsistent with biological distributions	Review any requests for amalgamation of QMAs (subject to industry agreement) and provide scientific advice	Ad Hoc
27	Implement 10 Year Research Programme and ensure that all finalised research used to inform management decisions meets the requirements within the Ministry of Fisheries Research Standard	Provide scientific advice on suitability of any tenders for 2013-14 "Additional Research" Monitor progress of contracted research for the 2012-13 year Review finalised research reports to ensure research conducted under the 10 Year Research Programme meets the Research Standard Rank final projects as per the Research Standard	Ongoing

#	Action	Service	Timeframe
29	Finalise ecological risk assessment on the effects of deepwater fisheries on the aquatic environment	Provide scientific advice to finalise and implement the ERA	Jul-Dec 2012
30	Monitor catch of, and assess risks to, non-QMS (Tier 3) species from deepwater fishing activity	Participate in assessing risk to Tier 3 species from deepwater fishing activity	Oct-Dec 2012
33	Monitor the development of the Patagonian toothfish fishery, including any applications for special permits	Scientific review and advice on any special permit applications Monitoring of performance against conditions on any approved special permits	Ad hoc

Deepwater 10 Year Research Program - Scientific Research

Most research needs for deepwater fisheries are driven 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 routine research and data collection necessary to meet the management objectives (Table 10). The 10YP recognises that not all research required can be planned in advance. For this reason, the 10YP allows for the annual planning, prioritisation and delivery of one-off research projects. This research is detailed in the “Additional Research” section below (Table 8) and in future will utilise the process that is being developed through this year’s MA20.

Table 8: Additional Research for the 2012-13 year

Project code	Title	Time Frame
DEE2010/04	Develop a methodology for ERAs	2011-12
DEE2010/05	Identify ecosystem indicators for deepwater fisheries	2011-12*
DEE2011/03	Level 1 Risk Assessment for Tier 3 stocks	2012-13
DEE2011/05	Complete experimental acoustic survey for ORH in either Puysegur or NW Chatham Rise	2012-13

*These projects are currently behind schedule, dates listed indicate the initial proposed start date

Table 9: Research scheduled for 2012/13 in 10 Year Research Programme

Project code	Title	Time Frame
Trawl surveys		
HOK2010/04B	Estimation of hoki and middle depth fish abundance on the West Coast South Island using combined trawl and acoustic surveys	May 2012- June 2013
HOK2010/05	Estimation of hoki and middle depth fish abundance on the Chatham Rise using trawl surveys	Oct 2012- Sept 2013
MDT2010/02	Estimation of hoki and middle depth fish abundance on the Southern Plateau using trawl surveys	Oct 2012- Sept 2013
Acoustic surveys		
OEO2010/03	Estimation of the abundance of smooth oreo in OEO4 (Chatham Rise) using acoustic surveys	Sept 2012- Nov 2013
CDL2010/01	Biomass estimation of black cardinalfish (CDL2) using acoustic surveys	July 201- Oct 2012
SBW2010/02	Biomass estimation of southern blue whiting using acoustic surveys (Bounty Platform)	July 2012- June 2012
SBW2010/03	Biomass estimation of southern blue whiting (Pukaki Rise)	March 2012- March 2013
Ageing projects		
MID2010/01	Routine age determination of hoki and middle depth species from commercial fisheries and trawl surveys	Nov 2012- Sept 2013
Stock Assessment		
DEE2010/02	Stock assessment of deepwater and middle depth fish stocks (BOE3A, OEO6, SCI1, SCI2, HOK1, HAK4, HAK7, LIN7 WC & CS)	Dec 2012- Sept 2013
DEE2010/02 SBW	Southern blue whiting SBW6B (Bounty Islands) and SBW6R (Pukaki rise) stock assessment	Nov 2012- June 2013
Stock characterisations		
DEE2010/07B	Characterisation and fishery monitoring of deepwater and middle depth species (BAR, GSH, RBT, RBY, SWA, SPD)	Aug 2012- June 2013
Scampi camera surveys		
SCI2010/02B	Estimating the abundance of scampi in SCI6A using photographic surveys	Jan 2012- Apr 2013
Aquatic environment		
DAE2010/01B	Taxonomic identification of benthic samples	July 2012- July 2013
DAE2010/02B	Bycatch monitoring and quantification of deepwater stocks (Ling long-line and squid fisheries)	Dec 2012- Sept 2013
DAE2010/04B	Monitoring the trawl footprint for deepwater fisheries	Jan 2012- May 2013
PRO2010/01	Estimating the nature and extent of incidental captures of seabirds, marine mammals and turtles in New Zealand commercial fisheries	Jan 2013- July 2013

Table 10: Research projects within the 10YP for each of the nine Tier 1 species for the 12/13 financial year

Hoki – Projects for 2012/13 and Associated Management Objective			
Objective	Stock	Project Code (10YP)	Time Frame
Stock Assessment	HOK1	DEE2010/02HOK	December 2012 – September 2013
Trawl survey (Southern Plateau)	HOK1	MDT2010/02	November/December 2012
Trawl Survey (WCSI)	HOK1	HOK2010/04	July 2012
Trawl Survey (Chatham Rise)	HOK1	HOK2010/05	December 2012
Orange Roughy – Projects for 2012/13 and Associated Management Objective			
Objective	Stock	Project Code (10YP)	Time Frame
Acoustic and Trawl Method Survey	ORH7	ORH2010/04	July 2012
Southern Blue Whiting – Projects for 2012/13 and Associated Management Objective			
Objective	Stock	Project Code (10YP)	Time Frame
Stock Assessment	SBW6B SBW6R	DEE2010/02B SBW (covers SBW2010/01 and SBW2010/05)	Nov 2012 – June 2013
Acoustic Survey	SBW6B SBW6R	SBW2010/02 SBW2010/03	August 2012 September 2012
Ling – Projects for 2012-13 and Associated Operational Objectives			
Objective	Stock	Project Code (10YP)	Time Frame
Stock Assessment	LIN7 WC & LIN7 CS	DEE2010/02B LIN	August 2012 – June 2013
Bycatch Monitoring	All LIN	DAE2010/02C LIN (long-line)	December 2012 – September 2013
Trawl Survey	LIN5 & LIN6	MDT2010/02A	December 2012
Scampi – Projects for 2012/13 and Associated Operational Objectives			
Objective	Stock	Project Code (10YP)	Time Frame
Stock Assessment	SCI1 & 2	DEE2010/02 SCI	December 2012 – September 2013
Photographic Surveys	SCI6A	SCI2010/02B	January 2012 – April 2013
Oreo – Projects for 2012/13 and Associated Operational Objectives			
Objective	Stock	Project Code (10YP)	Time Frame
Stock Assessment	BOE3A & OEO6	DEE2010/02 OEO	December 2012 – September 2013
Hake – Projects for 2012/13 and Associated Operational Objectives			
Objective	Stock	Project Code (10 YRP)	Time Frame
Stock Assessment	HAK4 & HAK7	DEE2010/02 HAK	December 2012 – June 2013
Trawl Survey (Southern Plateau)	HAK1	MDT2010/02A	December 2012
Squid – Projects for 2012/13 and Associated Operational Objectives			
Objective	Stock	Project Code (10YP)	Time Frame
Bycatch Monitoring	SQU (all)	DAE2010/02B	July 2012
Jack Mackerel – Projects for 2012/13 and Associated Operational Objectives			
Objective	Stock	Project Code (10YP)	Time Frame
NONE	-	-	-

Aquatic Environment and Biodiversity Research

The Aquatic Environment and Biodiversity research programmes are managed by the Aquatic Environment Science Team. Aquatic Environment research, other than that found within the 10YP, can be crown funded or contracted by the Aquatic Environment Team. In contrast, Biodiversity research is crown funded and addresses more strategic, national-level aquatic environment issues. Aquatic Environment research, separate from that listed within the 10YP, and ongoing deepwater biodiversity research, are listed within Table 11 below.

Table 11: Ongoing biodiversity and aquatic environment research relating to deepwater

Project code	Title	Time Frame
Aquatic Environment Research for the 2012/13 year		
PRO2012/02	Assessment of risk to marine mammal populations from New Zealand fisheries	Starts in 2012/13
PRO2012/07	Cryptic mortality of seabirds in trawl and long-line fisheries	2012/13
PRO2012/08	Improved estimation of spatial-temporal overlap with fisheries for at-risk seabird species	2012/13
PRO2012/09	Improvements into key information gaps for highest risk seabirds populations	Starts in 2012/13
PRO2012/10	Level 3 risk assessment for Antipodean albatross TBC	2012/13
Project code	Title	Time Frame
Ongoing deepwater biodiversity research, 2012/13		
ZBD2004/01	Ecosystem-scale trophic relationships: diet composition and guild structure of middle-depth fish on the Chatham Rise. <i>(5 year project is complete but the release of mainstream publications from the study is ongoing)</i>	2012/13
ZBD2007/01	Chatham/Challenger Post Voyage Analyses. Assessment of benthic biodiversity on the Chatham Rise and Challenger Plateau 200-1200m depths; test of MEC and BOMEC classifications. <i>(Almost complete)</i>	Due Dec 2012
ZBD2008/11	Predicting and measuring the effects of ocean acidification on plankton biodiversity and productivity <i>(5 year programme linked to MSI research)</i>	2012/13
ZBD2008/15	Continuous Plankton Recorder Project: Sanford New Zealand-Ross Sea time series of phytoplankton and zooplankton biomass in spring and summer <i>(5 year monitoring programme)</i>	2012/13
ZBD2009/25	Predicting impacts of increasing rates of disturbance on functional diversity in marine benthic ecosystems <i>(modelling project)</i>	Due 2012/13
ZBD2010/40	Predicting distribution patterns of vulnerable marine ecosystems in the Convention Area of the South Pacific Regional Fisheries Management Organisation <i>(Phase 1-developing models with existing data)</i>	Due 2012/13
ZBD2010/41	Potential ocean acidification impacts on deepwater fisheries habitats in New Zealand waters	Due 2012/13
ZBD2010/42	Towards a national Marine Environment Monitoring Programme (MEMP). Includes evaluation of time series to report on variability and long term trends in NZ EEZ and NZ Region	Due 2012/13

Department of Conservation – Related Research

The Department of Conservation (DOC) carries out marine research each year focussed on protected species interactions in New Zealand waters. Some of the research DOC plan to carry out in 2012-13 will be relevant to the Management Actions above, and should be taken into account for future management decisions and research planning activities. For more detail on the projects in Table 12, please see the Marine Conservation Services Annual Plan for 2012-13 on the DOC website (www.doc.govt.nz).

Table 12: Department of Conservation research relating to deepwater fisheries

Project code	Title
Seabirds	
POP2011-04	Campbell Island and grey-headed albatrosses population estimates
POP2011-05	White-capped albatross population estimates (Auckland Islands)
POP2011-06	Salvin's albatross population estimate (Bounty Islands)
POP2011-07	Gibson's albatross population estimate (Auckland Island)
Marine Mammals	
POP2012-01	New Zealand sea lions – Auckland Islands population study
POP2011-02	New Zealand sea lions – demographic assessment of the cause of decline at the Auckland Islands

2. Observer Services

The Observer Services Unit of the RMP branch collects information to underpin science, compliance, and management. Observers are deployed on commercial fishing vessels to carry out routine biological sampling, stock-specific sampling for a given year, monitor environmental interactions, and observe and record compliance with regulatory and non-regulatory management measures. Table 13 sets out the Management Actions to which the at-sea observer programme most directly contributes.

Through the 10YP the Ministry, in collaboration with industry, was exploring the move to full observer coverage through phased increase.⁶ However this year, due to recommendations from the Inquiry into the Use and Operation of Foreign Charter Vessels (FCVs), the Ministry has committed to full observer coverage on all FCVs as of 1 October. This has consequently affected the distribution of observer coverage for the 2012/13 financial year. Despite this change the Ministry, along with DOC, is working to ensure that fisheries management needs are met in conjunction with meeting full observer coverage on FCVs.

⁶ Full observer coverage means one MPI Observer on every vessel.

Table 13: Actions and services required from the Observer Services Unit

#	Action	Service	Timeframe
5	Ensure continued implementation of registration process and risk-based observer coverage for FCVs	Implement risk-based observer coverage on foreign charter vessels and collect information to inform risk profiling	Ongoing
6	Monitor management regime for SQU6T fishery to address interactions with sea lions	Achieve 2012-13 planned coverage of the SQU6T fishery, including SLED checks, and work with FM-Deepwater to monitor the fishing season	Jan-June 2013
8	Monitor non-regulatory management measures relating to Sub-QMA catch limits and HMAAs	Monitor and communicate adherence to non-regulatory management measures through observer coverage	Ongoing
9	Assess and manage the level of seabird interactions with deepwater fishing activity	Monitor seabird interactions and adherence to VMPS in deepwater fisheries and communicate performance to FM-Deepwater	Ongoing
10	Assess and manage the level of marine mammal interactions with deepwater fishing activity	Monitor marine mammal interactions and adherence to MMOP in deepwater fisheries and communicate performance to FM-Deepwater	Ongoing
11	Assess and manage the nature and extent of benthic interactions from deepwater fishing activity	Monitor and accurately record captures of benthic material	Ongoing
13	Assist the wider Ministry in implementing the Cabinet decisions made in response to the Ministerial Inquiry into the Use and Operation of FCVs	Work to implement requested observer coverage as a result of the Inquiry	Jul-Dec 2012
16	Assess and manage the level of shark interactions with deepwater fishing activity	Monitor and record all protected shark interactions in deepwater fisheries Accurately report bycatch information in all deepwater fisheries with a focus on identifying deepwater shark species	Ongoing
17	Ensure recommendations from observer optimisation project are implemented so that 1) sufficient and appropriate data is collected and 2) information and communication channels are operating effectively	Liaise with FM-Deepwater, FM-Science, DOC, and industry to ensure data collection requirements are met (See Table 15 and sampling information below)	Ongoing
21	Address outcomes of the risk based approach to managing seabird interactions in deepwater fisheries, with a focus on the scampi fishery	Address the risk score of the scampi fishery with increased observe coverage focused on monitoring, quantifying, and reducing seabird captures	Jul-Dec 2012
30	Monitor catches of and assess risks to non-QMS (Tier 3) species from deepwater fishing activity	Monitor and accurately record captures of Tier 3 bycatch species	Ongoing

Planned Observer Monitoring for 2012-13

Biological sampling and environmental monitoring is driven by the 10YP and carried out by the MPI observer programme. Data collected by the observer programme is used:

- As an input to monitor key fisheries against harvest strategies
- As an input to monitor biomass trends for bycatch species
- To assess fishery performance against environmental benchmarks as available
- To enable more timely responses to sustainability and environmental impact issues

Within Table 14, observer coverage is split into MPI and DOC-specific columns. This split is based on the requirements of observer time to meet both Ministry and DOC research objectives. DOC requires observer coverage to collect information regarding interactions of fishing activity with protected species, while MPI requires observers to undertake fisheries management sampling.

Observer Sampling

Observer coverage will be used to collect biological information that can be classified into two categories, routine sampling, and specific sampling:

Routine sampling - covers the annual data collection requirements that are carried out by observers. For all Tier 1 species, this includes collection of length data and otoliths, monitoring of environmental interactions including benthos, seabirds, marine mammals, and any other non-fish species, and recording bycatch of non-QMS fish species.

Specific sampling - sampling for a given fishing year includes targeted sampling where the Ministry needs additional information on a Tier 1 species, or to collect information on a Tier 2 species to inform a stock characterisation in the following year. In 2012-13 the following Tier 2 stocks will be targeted for data collection leading into characterisations in 2013-14:

- Cardinalfish (CDL – all stocks)
- Gemfish (SKI3, SKI7)
- Lookdown Dory (LDO – all stocks)
- Prawn Killer (PRK – all stocks)
- Ribaldo (RIB3 – RIB8)

Specific sampling of environmental interactions in 2012-13 will focus on seabird interactions in the scampi fishery, following a seabird mitigation workshop held by DOC. There will also be a continued focus of observing fur seal interactions in the Cook Strait hoki fishery.

Table 14: Planned observer coverage in deepwater fisheries for 2012-13 (CR % = Percent of days cost recovered by each agency)

Fishery	Fisheries covered	Total days	Ministry CR % (Days)	DOC/CSP CR % (Days)
Deepwater trawl fisheries:				
ORH 1		49	100% (49)	0% (0)
East Coast NI Deepwater	ORH2A BYX2 CDL2	203	100% (203)	0% (0)
Chatham Rise Deepwater	ORH3B OEO3A, OEO4 BYX3	235	100% (235)	0% (0)
Sub-Antarctic Deepwater	ORH3B OEO1, OEO6	192	100% (192)	0% (0)
West Coast NI Deepwater	ORH7A	12	100% (12)	0% (0)
Hoki & Middle Depth trawl fisheries:				
West Coast SI (FMA7)	HOK1 HAK7 LIN7 SWA1 JMA7 EMA7	1,465	90% (1,319)	10% (146)
Cook Strait	HOK1 HAK1, HAK7 LIN2, LIN7	189	100% (189)	0% (0)
Chatham Rise (FMA3/FMA4)	HOK1 HAK1, HAK4 LIN3, LIN4 SWA3, SWA4 JMA3 EMA3	1,448	90% (1,304)	10% (144)
Sub-Antarctic (FMA5/FMA6)	HOK1 HAK1 LIN5, LIN6 SBW6B, SBW6I, SBW6R JMA3 EMA3	1,349	90% (1215)	10% (134)
West Coast NI (FMA8)	HOK1 LIN7 SWA1 JMA7 EMA7	347	90% (312)	10% (35)
Deepwater bottom long-line fisheries:				
Bottom long-line	LIN PTO1	144	85% (123)	15% (21)
Shellfish:				
Scampi	SCI (all)	368	76% (278)	24% (90)
Aquatic Environment:				
Sea lion interactions	SQU6T	1,055	87% (915)	13% (140)
	Total days:	7,056		

3. Administrative & Business Support Unit

The Administrative and Business Support Unit provide administrative and budgetary support for the entire RMP branch. The Unit also helps communicate with the Ministerial Team and the Office of the Director General. Furthermore, the Management Actions detailed in Table 15 highlight the important role that the Administrative & Business Support team has in the FCV registration process.

Table 15: Actions and services required from Administrative & Business Support

#	Action	Service	Timeframe
1,2,3	Multiple	Provide administrative support when finalising, printing, and seeking consultation on fisheries management documents	Ongoing
5	Ensure continued implementation of registration process and risk-based observer coverage for FCVs	Continue risk based registration process in communication with Compliance and Fish Serve	Ongoing
13	Assist the wider Ministry in implementing the Cabinet decisions made in response to the Ministerial Inquiry into the Use and Operation of FCVs	Work with FCV Project Team and FCV Steering Group as a new process for vessel registration is developed to address FCV reflagging	Jul-Dec 2012

II. Services from the wider Ministry:

Table 16: Directorates and business groups outside RMP from which some fisheries management services will be required

Branch	Directorate	Description of responsibility
1. Maori Primary Sector Partnerships	Maori Partnership Advice	Provide strategic and operational advice to fisheries management on delivery of obligations and strategic outcomes to Maori
	Maori Partnership Implementation	Assist the implementation of Ministry initiatives that improve Maori primary sector productivity increasing sustainable resource use including the delivery of fisheries related obligations to Maori
2. Corporate Services	Legal Services	Legal advice on the interpretation of relevant fisheries legislation in support of policy development and management interventions
	Finance	Assist with budget advice and contract management for deepwater fisheries research
	Business Technology & Information Services	Enable business technology solutions and deliver high quality information and technology services to staff and external stakeholders. Manage data (including Geospatial), records and business intelligence
3. Compliance & Response	Compliance	Accountable for all compliance activities including patrol, operational surveillance, inspection, tactical intelligence analysis and investigation
4. Policy	International Policy	Represent New Zealand interests in international forums and provide advice on management of straddling and trans-boundary stocks
5. Office of the Director General	Ministerials & Business Group	Ensuring effectiveness of governance groups and Ministerial processes within the Ministry
	Communications & Channels	Coordination of media presence and external communications

1. Maori Primary Sector Partnerships Branch

One responsibility of the Ministry's Maori Primary Sector Partnerships Branch is to liaise with iwi throughout the development of Iwi Fisheries Plans and Forum Fisheries Plans to ensure that Maori interests in fisheries management are addressed.

Table 17: Services required from the Directorates within the Maori Primary Sector Partnerships Branch in order to accomplish Management Actions

#	Action	Service	Timeframe
2	Continue implementation of the National Deepwater Plan	Collaborate on development of 2013/14 Annual Operational Plan to ensure consideration and prioritisation of IFP/FFP objectives for the management of deepwater fisheries	Jan-Jun 2013
7	Ensure sufficient and appropriate engagement with tangata whenua	Liaise with Inshore and Deepwater Teams to develop a communication programme to effectively engage with iwi on deepwater fisheries management issues through the Iwi Fisheries Plan Forum	Ongoing

2. Corporate Services Branch

Within the Corporate Services Branch there are three directorates from which the Deepwater Team will seek services to implement management actions:

- **Legal Services**
- **Finance**
- **Business Technology & Information Services**

A. Legal Services Directorate

The Ministry's Legal Services Directorate provides expert knowledge and legal opinion on the interpretation of relevant fisheries legislation to support policy development and management interventions. Table 18 sets out specific Management Actions that will require services from the legal team, however, the Deepwater Team will require ad hoc legal advice throughout the year as issues arise.

Table 18: Services required from the Legal Services Directorate in order to accomplish Deepwater Management Actions

#	Action	Service	Timeframe
1	Review up to seven stocks for 1 October and four stocks for 1 April sustainability rounds, including deemed values	Legal peer review advice papers for 1 October fishing year Legal peer review advice papers for 1 April fishing year	Jun-Sept 2012 Jan-Mar 2013
3	Ensure completion of Ministerial communications	Legal peer review of final responses and information released through OIA	Ongoing
5	Ensure continued implementation of registration process and risk-based observer coverage for foreign charter vessels	Provide legal advice and input into vessel registration applications and assignment of risk status Provide advice on any conditions to be placed on a vessel registrations	Ongoing
7	Monitor management regime for SQU6T fishery to address interactions with sea lions	Legal peer review of SQU6T IPP and FAP if necessary	Dec 2012
13	Assist the wider Ministry in implementing the Cabinet decisions in response to the Ministerial Inquiry into the Use and Operation of FCVs	Provide legal advice and input as the Ministry works to implement recommendations from the FCV Inquiry	Jul-Dec 2012

B. Finance Directorate

The Finance Directorate is responsible for asset management, centralised purchasing, facilities and contracts management.

Table 19: Services required from the Finance Directorate in order to accomplish Deepwater Management Actions

#	Action	Service	Timeframe
20, 27	Multiple	Administration and implementation of cost recovery process Advice on budgets and contract monitoring	Ad hoc

C. Business Technology & Information Services Directorate

The Business Technology & Information Services Directorate is responsible for the information systems of the Ministry, ensuring effective collection of information, and the development of technology solutions. This includes Ministry software development and the Records and Data Management function. The Information Services team is also responsible for day-to-day IT support for the Deepwater Team and the Ministry as a whole.

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

3. Compliance & Response Branch

A. Compliance Directorate

The Compliance Directorate, within the Compliance & Response Branch, is responsible for providing the intervention services to achieve cost-effective compliance. It provides advice to fisheries managers on the most efficient and effective combination of intervention services to manage risks and achieve objectives. Compliance works with RMP through the Fisheries Management Directorate and Observer Services Unit.

Successfully delivering on the management objectives for deepwater fisheries is dependent upon high levels of compliance with various sustainability and environmental management measures, be they regulatory or non-regulatory. In deepwater fisheries areas of compliance concern relate to misreporting in terms of areas fished (known as “trucking”), species fished (falsifying returns and misidentification), and quantities taken (unreported discarding or slippage in systems used to record catch).

The Ministry’s compliance activities are based on education, monitoring, surveillance, audit, analysis, and enforcement through investigation and prosecution of offences. Since 2009, the Ministry has revised its compliance model, shifting the focus from enforcement of legal breaches to a Voluntary, Assisted, Directed, Enforced (VADE) model of compliance. While the enforcement and prosecution tools remain available (and continue to be used where appropriate) effort is also focussed on achieving compliance through a programme of educating and assisting the commercial sector to comply. For more information on how the VADE model is operating in deepwater fisheries please see section 5 of Part 1B of the National Deepwater Plan.

The specific compliance services required to support the successful delivery of 2012-13 management objectives are listed in Table 20. These service requirements are in addition to the general monitoring and surveillance activities undertaken by the Compliance Directorate.

Table 20: Services required from the Compliance Directorate in order to accomplish Management Actions

#	Action	Service	Timeframe
1	Review stocks for 1 October and for 1 April sustainability rounds, including deemed values	Review Advice Papers and provide feedback regarding compliance implications	Sep 2012 Mar 2013
5	Ensure continued implementation of registration process and risk-based observer coverage for foreign charter vessels	Participate in FCV registration process including assessment of risk to New Zealand fisheries posed by the vessel, and regular inspections of vessels to ensure compliance with observer standard and appropriate equipment to fish in New Zealand	Ongoing
6	Monitor management regime for SQU6T fishery to address interactions with sea lions	Implement monitoring regime in SQU6T fishery including ongoing SLED inspections	Jan-Jun 2013
9	Assess and manage the level of seabird interactions with deepwater fishing activity	Help monitor seabird interactions and adherence to regulatory measures and VMPs in deepwater fisheries	Ongoing
10	Assess and manage the level of marine mammal interactions with deepwater fishing activity	Help monitor marine mammal interactions and adherence to the MMOP in deepwater fisheries	Jan-Jun 2013
13	Assist the wider Ministry in implementing the Cabinet decisions in response to the Ministerial Inquiry into the Use and Operation of FCVs	Provide compliance information and input as the Ministry works to implement recommendations from the FCV Inquiry	Jul-Dec 2012
24	Ensure continued monitoring of fisher compliance against agreed benchmarks and non-regulatory management measures and ensure appropriate action is taken when compliance drops below these agreed benchmarks and non-regulatory measures	Monitor levels of compliance against benchmarks and report quarterly Continue to operate the VADE compliance model	Ongoing
25	Continue the risk profile process for hoki and begin other risk profile for further deepwater fishery	Complete risk profiles for southern blue whiting fisheries and selected ORH fisheries	Jul-Dec 2012 Jan-Jun 2013
32	Monitor sub-Antarctic MPAs	On enactment, monitor adherence to regulations relating to Sub-Antarctic MPAS	Ongoing

4. Policy Branch

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

- **International Policy Directorate**
- **Sector Policy Directorate**

A. International Policy Directorate

The Deepwater Team requires input from the International Policy Directorate on international engagement, trade, and market access. Furthermore, this Directorate ensures the quality of MPI's international engagement on international fisheries issues.

Table 21: Services required from the International Policy Directorate that will aid in the completion of management actions

#	Action	Service	Timeframe
3	Ensure completion of Ministerial communications	Provide peer review of any relevant matters	Ongoing
18	Whilst working to achieve credible third party certification, provide information and communication to maximise market access for New Zealand deepwater fisheries	Provide expert advice and review of selected information prior to circulation	Ongoing
33	Manage the development of the Patagonian toothfish fishery, including any applications for special permits	Provide advice on any relevant matters	Ongoing

B. Sector Policy Directorate

The Sector Policy Directorate is responsible for working with stakeholders and other Government agencies to develop and implement policy, including the various legislative and regulatory frameworks that support the development of New Zealand's primary industries. It is responsible for monitoring, reviewing and amending policy that relates to the primary sector.

Table 22: Services required from the Sector Policy Directorate which will aid in completing the following management actions

#	Action	Service	Timeframe
13	Assist the wider Ministry in implementing the Cabinet decisions made in response to the Ministerial Inquiry into the Use and Operation of FCVs	Aid in developing and implementing policy to give effect to government deliverables relating to FCVs	Jul-Dec 2012
22	Define "habitats of particular significance for fisheries management"	Provide policy advice in the development of the definition	Jul-Dec 2012
31	Assist the Ministry's Sector Policy Directorate	Lead the development of fisheries policy	Ongoing

5. Office of the Director General Branch

The Office of the Director General is responsible for monitoring the performance of the Ministry, external communications such as press releases, and all Ministerial communications. The two directorates within this Branch that will support the Deepwater Team in achieving the 2012-13 objectives are:

- **Ministerials and Business Support Directorate**
- **Communications and Channels Directorate**

A. Ministerials and Business Support Directorate

The Ministerial and Business Support Directorate is the point of contact between the Ministry and the Minister's Office. This Directorate is responsible for ensuring governance groups within the Ministry function effectively and ensure that the Ministerial process is managed effectively.

Table 23: Services required from the Ministerial and Business Support Directorate

#	Action	Service	Timeframe
3	Ensure completion of quality Ministerial communications including briefings, Ministerials, and Official Information Act requests within designated timeframes	Coordination of briefings, Ministerials and OIA requests	Ongoing

B. Communications and Channels Directorate

The Communications and Channels Directorate is responsible for providing strategic communications advice, to ensure that MPI communicates with internal and external stakeholders in an effective and efficient manner. This Directorate is also responsible for overseeing and developing the Ministry's communications channels (e.g. websites).

Table 24: Services required from the Communications and Channels Directorate

#	Action	Service	Timeframe
2, 15, 16	Multiple	Provide expert advice on media relations	Ongoing
18	Provide information and communications to maximise market access for New Zealand deepwater fisheries	Contribute to market access responses where necessary	Ad hoc

III. Deepwater Group Ltd. Services

The Deepwater Group Ltd (DWG) is a non-profit company that represents owners of deepwater fishing quota. The DWG works in partnership with the Ministry to ensure New Zealand gains the maximum economic yield from New Zealand's deepwater fisheries resources while ensuring fisheries remain sustainable and environmental effects are managed appropriately. A primary function of DWG is to represent the interests of quota owners and provide a communication channel between the Ministry and the deepwater fishing industry to facilitate full engagement on management of deepwater fisheries.

The Ministry signed a Memorandum of Understanding (MOU) with the Deepwater Group Ltd in 2006. This MOU was subsequently updated in 2008 and most recently in 2010. The MOU establishes a structured partnership that enables the Ministry and DWG to manage New Zealand's deepwater fisheries collectively. Because of this collaborative arrangement, the Deepwater Annual Operational Plan also specifies how the DWG will contribute to the delivery of Management Actions and in turn Management Objectives.

Table 25: Actions and services required from Deepwater Group Ltd.

#	Action	Service	Timeframe
2	Continue implementation of the National Deepwater Plan	Contribute to the development of fishery-specific chapters for HAK, OEO, JMA, and SCI Provide industry review for the 2011/12 ARR and 2013/14 AOP	Ongoing
5	Ensure continued implementation of registration processes and risk-based observer coverage for foreign charter vessels	Liaise with industry to minimise risks associated with foreign charter vessels operating in New Zealand	Ongoing
6	Monitor management regime for SQU6T fishery to address interactions with sea lions	Work with Deepwater Team to monitor the effort in the SQU6T fishery	Ongoing
8	Monitor non-regulatory management measures relating to Sub-QMA catch limits and Hoki Management Areas (HMAs)	Monitor adherence to non-regulatory measures including sub-QMA area catch reporting and protected species measures	Ongoing
9	Assess and manage the level of seabird interactions with deepwater fishing activity	Assist with audit of VMPs and provide information to the Deepwater Team Continue seabird education programme and distribution of learning resources Collaborate with the Deepwater Team to address at-sea issues related to seabird interactions in real-time	Ongoing
10	Assess and manage the level of marine mammal interactions with deepwater fishing activity	Assist with audit of MMOPs and provide information to Deepwater Team Collaborate with Deepwater Team to address at-sea issues relating to marine mammal interactions in real-time Continue to implement environmental education programme with a focus on the Cook Strait and smaller vessels	Ongoing
12	Develop and implement specific harvest strategies for Tier 1 species, which enable economically viable deepwater and middle-depth fisheries over the long-term	Engage on development of biological reference points and harvest strategies for orange roughy, southern blue whiting, and ling in the first instance Work with the Ministry to coordinate development of economic yield strategies	Ongoing

#	Action	Service	Timeframe
14	Facilitate continued MSC Certification of deepwater fisheries including CoCs and passing the annual surveillance audits	Coordinate the completion of any CoCs to ensure they are met within required timeframes Coordinate material for annual surveillance audit and re-certification process	Ongoing
15	Assist in finalising the NPOA Seabirds	Aid in reviewing and participating in the development and finalisation of the NPOA Seabirds	Jun-Dec 2012
16	Assess and manage the level of shark interactions with deepwater fishing activity and assist with the review of the NPOA Sharks	Liaise with Deepwater Team on potential measures to minimise interactions with sharks Work with Deepwater Team to develop a Shark Operational Plan for deepwater vessels	Ongoing
18	Whilst working to achieve credible third party certification, provide information and communication to maximise market access for New Zealand deepwater fisheries	Coordinate market access issues from an industry perspective	Ongoing
20	Develop and implement process for identifying additional research, including a formalised process for tender evaluations	Work with Deepwater Team to formalise a process for identifying and tendering additional research, including consultation with stakeholders	Jun-Sep 2012
21	Address outcomes of the risk based approach to seabird interactions in deepwater fisheries, focusing on the scampi fishery	Work with Deepwater Team and liaise with Industry to help implement measures that reduce seabird interactions in the scampi fishery	July-Dec 2012
22	Develop and implement management procedures for Tier 2 species	Work with Deepwater Team during development of management procedures using current Tier 2 characterisations	Ongoing
24	Ensure continued monitoring of fisher compliance against agreed benchmarks and non-regulatory management measures and ensure appropriate action is taken when compliance drops below these agreed benchmarks	Address any compliance breaches or unsatisfactory adherence with non-regulatory measures	Ongoing
26	When warranted, work with industry to change QMA boundaries distributions	Coordinate and lead proposal to amalgamate QMAs	Ad hoc
27	Deliver collaborative management of deepwater fisheries through implementation of the MOU	Coordinate and participate in the Deepwater Management Forum and Deepwater Secretariat	Ongoing
29	Finalise development of a framework for ERA	Provide feedback throughout the development of the ERA	Jan-Jun 2013

Part 2C: 2012 management overviews, key management settings and harvest strategies

Part 2C provides an overview of the current management approach and performance indicators for each Tier 1 species currently managed through the National Deepwater Plan. Details of species currently covered through the National Deepwater Plan are shown in Table 26. The harvest strategy for each species is summarised, together with details of any in-season management measures that are in place (where appropriate). Descriptions are also provided of the actions that will be taken if stocks fall below the management target and reach either the hard or soft limit.

Summary tables of key management settings and performance indicators are included for these Tier 1 species and the Tier 2 species in Appendix I. These tables will provide the basis for auditing the performance of each fishery against the performance indicators and review criteria in the National Deepwater Plan. The performance audit will be included in the Annual Review Report.

Table 26: Stocks currently included in the National Deepwater Plan

Tier 1	Tier 2
Hoki	Silver warehou: All Spiny dogfish: SPD4, SPD5 Frostfish: FRO3-FRO9 White warehou: All Lookdown dory: All
Orange roughy	Black cardinalfish: All
Southern Blue Whiting	None
Ling	Ribaldo: RIB3-RIB8 Patagonian toothfish: All

There are currently no specific biological reference points/management targets in place for key bycatch stocks (Tier 2). Until management procedures are specified, default targets from the Harvest Strategy Standard will be used. As harvest strategies and management procedures are developed, they will be included in subsequent AOPs and reported in ARRs.

Management overviews

Target fishery - Hoki

Management approach

The hoki fishery is managed as two distinct stocks under a single TACC, HOK1, which covers fisheries management areas 1-9. The two stocks consist of the following defined fishing areas:

1. Eastern hoki stock: Cook Strait, Chatham Rise, East Coast South Island (ECSI) and East Coast North Island (ECNI).
2. Western hoki stock: West Coast South Island (WCSI), Sub-Antarctic and Puysegur Bank

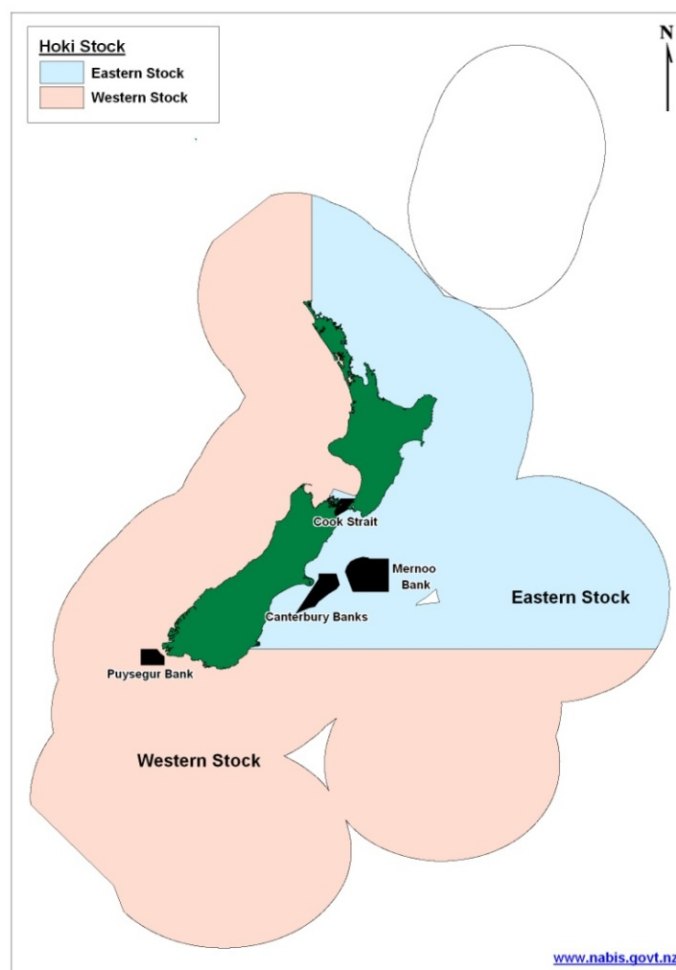


Figure 3: Boundaries between the eastern and western stocks and the four Hoki Management Areas (dark areas)

The management approach for hoki is assessment-based and leads to regular TAC and TACC reviews. The stock assessment is informed by the annual monitoring of the biomass of both stocks and provides estimates of stock status in line with the reference points described in the hoki harvest strategy, described below.

In 2001, quota owners implemented agreed catch limits within the TACC to manage catches from both the eastern and western stocks. The proportion of the TACC to be taken from each stock are set by the Ministry based on the annual stock assessments. Quota owners have also implemented an additional range of non-regulatory management measures to reduce catches of juvenile hoki. These measures focus on restricting target hoki fishing in areas of relatively high juvenile abundance; these areas are termed Hoki Management Areas (HMAs). For more information on HMAs please see the hoki fishery-specific chapter of the National Deepwater Plan.

In support of the assessment-based approach to managing hoki, both the eastern and western hoki stocks are monitored regularly through two fisheries independent wide area trawl surveys, one of the Chatham Rise, and the other of the sub-Antarctic. Both these trawl surveys take place during summer and represent an established time series of hoki abundance estimates.

Under the 10YP, a new survey on the west coast of the South Island has commenced to monitor the Western stock spawning stock and other associated fisheries. The Eastern stock spawning aggregations in Cook Strait are also surveyed acoustically every second year. Biomass estimates from all surveys are used in the hoki stock assessment.

Harvest Strategy

The core elements of the harvest strategy in place for hoki are as follows:

Table 27: Harvest strategy for hoki

Harvest strategy components	Management response
Management target range of 35 - 50% B_0	Stock permitted to fluctuate within this management target to an acceptable level.
Soft limit of 20% B_0	A formal time constrained rebuilding plan should be implemented if this limit is reached.
Hard limit of 10% B_0	The limit below which fisheries should be considered for closure.
Rebuild strategy	Catch limit set to deliver half the rate of rebuild that would occur in the absence of fishing.
Harvest control rule	Management actions determined by the results of a series of forward projections under a range of catch assumptions, guided by the biological reference points

Biomass in the hoki fishery should be managed to fluctuate around the target reference range with an accepted probability of at least 50%.

If the results of the hoki stock assessment indicate the fishery is below the target level, and there is a greater than 50% probability the fishery has reached the soft limit, the hoki rebuild strategy will be implemented. TACC or other management regimes are likely to be implemented prior to this point being reached.

The hoki rebuild strategy requires that the TACC should be adjusted to allow a catch level that will ensure the stock biomass approaches at least 50% of the biomass that would have rebuilt in the absence of fishing, over five year biomass projections.

If the results of the hoki stock assessment show that the fishery is below the target and has breached the hard limit then more stringent management action is required. This will likely include setting a zero catch limit for a period until the fishery has rebuilt to a level where there is at least a 70% probability of being above the soft limit.

Under current management settings it is unlikely that the fishery will reach the soft or hard limits due to fishing activity alone. However, changes to stock recruitment levels or environmental factors that affect the fishery could lead to declines in stock size below the management target. Should this happen, management settings will be reviewed and the necessary changes will be made. Changes could include setting lower catch limits, altering the harvest strategy, implementing a stock rebuild and, in cases where the hard limit has been breached, possibly closing the fishery. For more information see the 2012 Stock Assessment Plenary.

Associated species

Management Approach

Key bycatch (Tier 2) stocks managed in conjunction with the hoki fishery include:

- Silver warehou: SWA1, SWA3, and SWA4
- Frostfish: FRO3, FRO4, FRO5, FRO6, FRO7, FRO8, and FRO9
- Spiny dogfish: SPD4 and SPD5
- White warehou: WWA3, WWA4, WWA5B, WWA7, WWA8, and WWA9
- Lookdown dory: LDO1 and LDO3

All Tier 2 species will undergo characterisations at three year intervals to determine potential approaches for monitoring. Additional stock monitoring for bycatch species is based on information availability and varies by species as described in Table 28.

Table 28: Monitoring approach for Tier 2 key bycatch stocks

Stock	Monitoring approach
Silver warehou	<ul style="list-style-type: none"> • CPUE in SWA1 • Work will continue to establish CPUE for SWA3 & 4 • Otoliths will be collected in SWA1, 3 and 4 for catch-at-age information
Frostfish	<ul style="list-style-type: none"> • Characterisation to determine if CPUE might be a useful index of abundance • Otoliths will be collected in FRO7 & 8 for catch-at-age information
Spiny dogfish	<ul style="list-style-type: none"> • Characterisations will be used to determine if CPUE can be used as an index of abundance
White warehou	<ul style="list-style-type: none"> • CPUE will be investigated as a tool to monitor abundance • Otoliths will be collected in WWA5 & 6 for catch-at-age information
Lookdown dory	<ul style="list-style-type: none"> • Relative abundance is monitored in annual hoki trawl surveys of the Chatham Rise and Sub-Antarctic • Otoliths will be collected in LDO3 for catch-at-age information

Harvest strategy

The harvest strategy for all the Tier 2 stocks is based on the following generic reference points (Table 29) and corresponding management responses detailed in the Ministry's Harvest Strategy Standard.

Table 29: Harvest strategy for the Tier 2 key bycatch stocks of the hoki fishery

Reference point	Management response
Management target of 40% B ₀	Stock permitted to fluctuate around this management target. TAC changes will be employed to move stock toward or above target.
Soft limit of 20% B ₀	A formal time constrained rebuilding plan will be implemented if this limit is reached.
Hard limit of 10% B ₀	The limit below which fisheries should be considered for closure.
Rebuild strategy	To be determined.*
Harvest control rule	To be determined.*

*As information becomes available, further management responses will be determined for Tier 2 fisheries

Target fishery – Orange roughy

Management approach

The orange roughy fishery is divided into eight quota management areas (QMAs) which are divided into 10 discrete management sub-areas. These sub-areas are managed separately with each having an agreed catch limit. Where a sub-area boundary aligns with the boundaries of a single QMA the catch limit is the TACC (e.g. ORH7A). Catch limits for the orange roughy stocks which are not delineated by QMS boundaries are set by agreement between the industry and Government via the splitting of TACCs into area limits (e.g. ORH3B) or amalgamating QMAs to set fishery limits (e.g. ORH MEC).

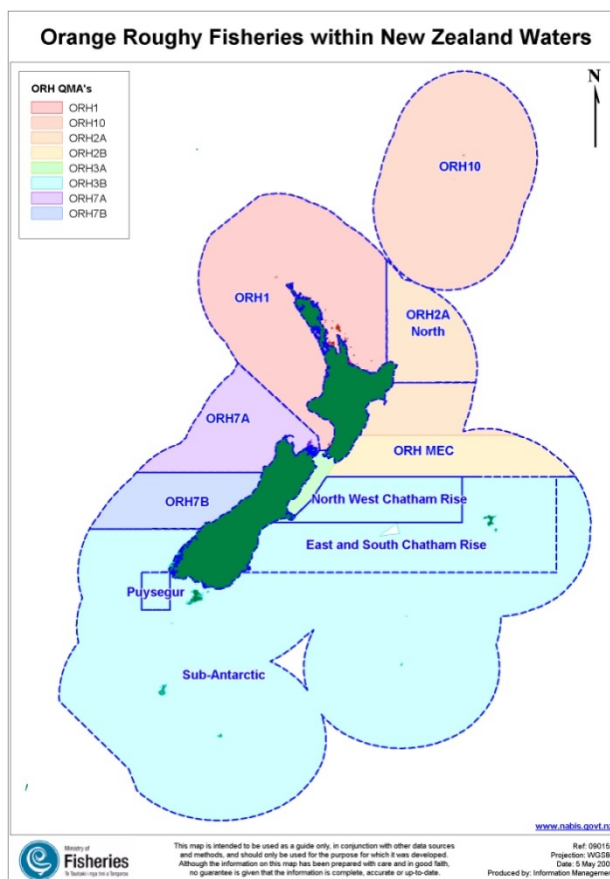


Figure 4: Orange roughy QMAs and management sub-areas

The current management approach differs among the eight stocks as summarised in Table 30. Table 30 also lists the monitoring methodology used for each stock and details which orange roughy stocks are assessed as Tier 1 stocks for management purposes, and which stocks are assessed as Tier 2 stocks.

Three of the Tier 1 orange roughy stocks are currently managed using an F_{MSY} approach. This approach is based on applying the fishing mortality rate (F) that, if applied constantly, would result in an average catch corresponding to the Maximum Sustainable Yield (MSY) and an average biomass corresponding to B_{MSY} . F_{MSY} is currently set at the rate of natural mortality (M) of orange roughy, which is estimated to be 0.045, or 4.5% of the current stock.

For those stocks which utilise this approach, the fishing mortality rate (F) is applied to the estimate of biomass that is derived from the monitoring approach listed for each stock in Table 30.

Table 30: Overview of the current management and monitoring approaches for orange roughy stocks and sub-stocks

Tier	Stock	Current Management Approach	Monitoring
Tier 1 orange roughy stocks	ORH3B (E&S Chatham Rise)	F_{MSY} approach	Acoustic survey of spawning plumes
	ORH3B (Puysegur)	F_{MSY} approach	Acoustic survey
	ORH3B (NW Chatham Rise)	Model-based approach	Acoustic/trawl survey
	ORH7A	F_{MSY} approach	Acoustic survey
	ORHMEC	Assessment model biomass and outputs used as basis for F_{MSY} approach	To be determined
	ORH1	Subject to proposed ORH management strategy evaluation	
Tier 2 orange roughy stocks	ORH1 (Mercury-Colville)	Subject to proposed ORH management strategy evaluation	
	ORH2A North	CPUE monitoring and other information derived from characterisation	Observer sampling
	ORH3B (Sub-Antarctic)	CPUE monitoring and other information derived from characterisation	Observer sampling
	ORH7B	Apply ORH7A approach in time with possible addition of trawl survey	Currently closed

Harvest strategy

The following reference points and corresponding management responses were derived from the Harvest Strategy Standard and apply to all orange roughy stocks. The F_{MSY} approach, that partially specifies how catch limits are set, is based on the reference points described in Table 31.

The F_{MSY} management approach has been adopted for the major Tier 1 stocks, to give effect to the reference points described in Table 31. To date, this approach has been adopted for the ORH3B (E&S Chatham Rise and Puysegur), ORH7A, and the MEC fishery.

Management is based on a fishing mortality approach where:

- If $B_{CURRENT}$ is above the soft limit then F is set at F_{MSY} (assumed to be M or $4.5\% B_{CURRENT}$)
- If $B_{CURRENT}$ is below the soft limit but above the hard limit a lower catch limit may be considered to increase the speed and certainty of the rebuild
- If $B_{CURRENT}$ is below the hard limit then closure of the fishery is considered (F set to zero)

Table 31: Harvest strategy for orange roughy

Reference point	Management response
Management target of 30% B_0	Stock permitted to fluctuate around this management target. TAC changes will be employed to move stock toward or above target.
Soft limit of 20% B_0	For stocks with model-based assessments, a formal time-constrained rebuilding plan may be implemented if this limit is reached.
	For stocks with F_{MSY} approaches, a lower catch limit may be considered if this limit is reached.
Hard limit of 10% B_0	The limit below which fisheries will be considered for closure.
Rebuild strategy	Partially specified in F_{MSY} approach, to be determined for other stocks.
Harvest control rule	Partially specified in F_{MSY} approach, to be determined for other stocks.

Information on the current status of orange roughy stocks can be found in Appendix I, or for more information see the 2012 Stock Assessment Plenary.

Associated species

Black cardinalfish

Management Approach

All cardinalfish stocks are Tier 2 stocks. The abundance of cardinalfish will be monitored using CPUE in the trawl fisheries. All stocks will undergo CPUE standardisation and characterisation at three year intervals using information gathered during trawl surveys and length frequency information from trawl surveys and observers on commercial fishing vessels.

Harvest strategy

The harvest strategy for all black cardinalfish stocks is based on the generic reference points detailed in Table 29 and corresponding management responses that are derived from the Ministry Harvest Strategy Standard. Under the National Deepwater Plan it is intended to develop a specific harvest strategy for black cardinalfish as information becomes available.

The research programme will seek, where possible, to provide an estimate of $B_{CURRENT}$ and B_{MSY} to manage to the generic reference points. However, higher CVs on estimates will be expected and accepted. This increased uncertainty may require a more cautious management response.

Information on the current status of black cardinalfish stocks can be found in Appendix I, or for more information see the 2012 Stock Assessment Plenary.

Target fishery – Southern blue whiting

Management approach

The southern blue whiting fishery is managed as four separate stocks within the quota management system (QMS), each of which has been assigned a quota management area (QMA). All four QMAs are located within the sub-Antarctic fisheries management area, FMA6 (see Figure 5). The four QMAs are based on four known spawning locations, and are designated as follows:

1. Bounty Platform (SBW6B)
2. Auckland Islands (SBW6A) (Tier 2)
3. Campbell Islands Rise (SBW6I)
4. Pukaki Rise (SBW6R)

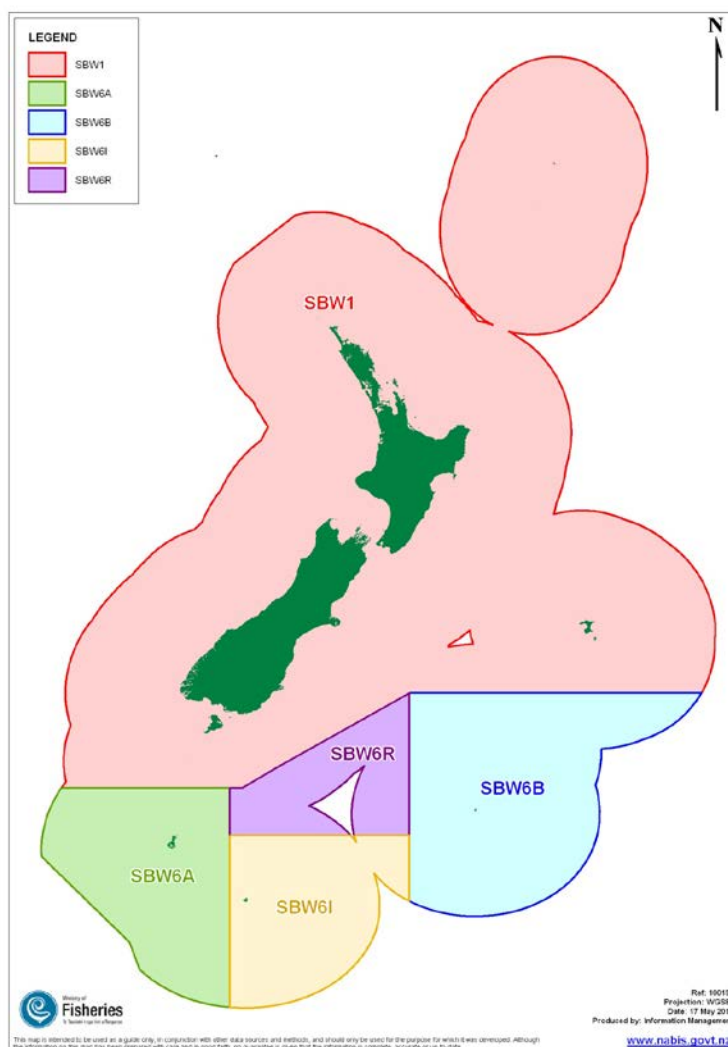


Figure 5: Southern blue whiting QMAs

The remainder of the EEZ, outside FMA6, is managed under an administrative QMA, SBW1. This area is not part of the natural distribution of southern blue whiting in New Zealand, and no target southern blue whiting fishing takes place in this QMA. A nominal total allowable commercial catch (TACC) of eight tonnes is set to account for southern blue whiting taken as bycatch. On average, seven tonnes of SBW1 is taken per year, the majority as bycatch in target hoki and silver warehou fishing.

The southern blue whiting fisheries are managed by April fishing year (1 April – 31 March), due to the timing of the fishing season. The current management approach for the Tier 1 southern blue

whiting stocks (SBW6I, SBW6B and SBW6R) is assessment-based and leads to regular TAC/TACC reviews.

The Tier 2 stock SBW6A, which is a bycatch only fishery, will be managed using information utilising observer sampling and catch at age data, and will be subject to regular fishery characterisations. Although no evidence indicates an increase in fishing effort is likely at this time, effort in SBW6A will be monitored and if an increase is apparent in the future the stock will likely be elevated to Tier 1 status. A management approach for SBW1 is not described given this QMA is administrative only.

The three Tier 1 stocks are monitored regularly using acoustic survey techniques, which work well for assessing the biomass of single-species aggregations. Surveys are carried out regularly because significant recruitment-driven biomass changes are characteristic of these fisheries.

The three Tier 1 stocks are managed under a constant fishing mortality strategy, whereby TACs are reviewed based on an estimate of the current annual yield (CAY).⁷ This approach provides a dynamic interpretation of the maximum sustainable yield, as it explicitly recognises that these fish populations fluctuate in size from year to year.

Where possible, the CAY is generated through an accepted stock assessment model, which combines all available information on each stock to assess its status. Stock assessment models have been used to assess all three Tier 1 stocks in the past. At present, an accepted stock assessment model is available for SBW6I.

In the absence of an accepted stock assessment model, as is the case for SBW6B and SBW6R, an appropriate CAY can also be calculated using the most recent estimate of available biomass. This method is less data inclusive than running a full stock assessment, so it is important that management decisions are made with this in mind.

Harvest Strategy

Specific harvest strategies for southern blue whiting stocks will be developed during the term of this Annual Operational Plan. In the interim, default reference points from the Harvest Strategy Standard will be used to make management decisions.

Table 32: Interim harvest strategy for southern blue whiting

Reference point	Management response
Management target of 40% B_0	Stock permitted to fluctuate around this management target. TAC changes will be employed to move stock toward or above target.
Soft limit of 20% B_0	A formal time constrained rebuilding plan will be implemented if this limit is reached.
Hard limit of 10% B_0	The limit below which fisheries will be considered for closure.
Rebuild strategy	To be determined.
Harvest control rule	Management actions determined by the results of a series of forward projections under a range of catch assumptions, guided by the biological reference points

Information on the current status of southern blue whiting stocks can be found in Appendix I, or for more information see the 2012 Stock Assessment Plenary.

Associated Species

There are no bycatch stocks managed in association with southern blue whiting.

⁷ The CAY is the one year catch calculated by applying a constant fishing mortality rate, or exploitation rate, to a current estimate of the vulnerable biomass.

Target fishery - Ling

Management approach

The National Deepwater Plan covers five of the eight ling QMAs (LIN3-7). In this plan, references to ling stocks will only refer to LIN3-7. Within the National Deepwater Plan ling is assessed as five main stocks within the QMS. The five stocks do not align with the quota management areas, and are assessed as follows:

- LIN3 and 4 combined (Chatham Rise)
- LIN5 and 6 combined (Sub Antarctic)
- LIN7 (West Coast South Island)
- Cook Strait (part of both LIN2 and 7)
- Bounty Platform (LIN6B)

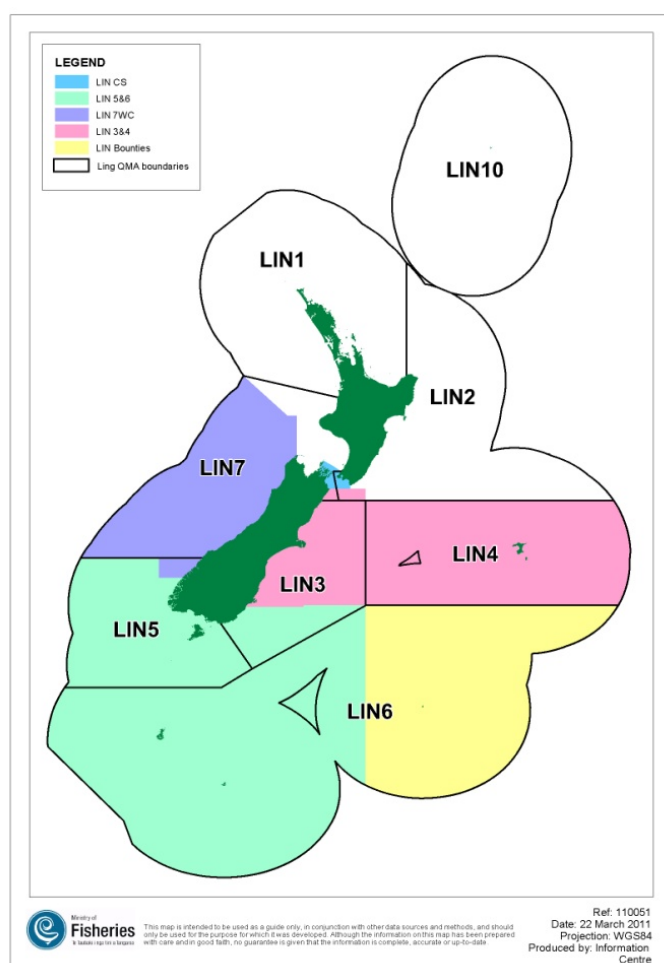


Figure 6: Details of ling fisheries and QMAs

The management approaches for ling differ by stock, but all are based on stock assessments every 3-4 years. Stock assessments for the Chatham Rise and Sub-Antarctic stocks are based on trawl surveys, proportions at age from the commercial fishing and trawl surveys, CPUE in the longline fisheries, and biological parameters. Assessments for other stocks are based on proportion at age, CPUE of the main fishing method fleet, and estimates of biological parameters. All assessments provide estimates of current biomass that can be compared to the ling harvest strategy.

During the term of this AOP, it is planned to discuss with the DWG a mechanism to manage ling based on biological stocks.

Harvest Strategy

Currently there is no stock-specific harvest strategy in place for ling fisheries. This work is expected to commence during the term of this AOP. In the interim, default reference points from the Harvest Strategy Standard will be used to make management decisions. Information on the current status of ling stocks can be found in Appendix I, or for more information see the 2012 Stock Assessment Plenary.

Associated species

Tier 2 stocks managed in conjunction with the ling fishery include:

- Patagonian toothfish: PTO1
- Ribaldo: RIB3-RIB8

Patagonian toothfish

Management approach

Patagonian toothfish was introduced to the QMS in 2010 with a nominal and conservative TAC of 50 tonnes. Fishing for toothfish has been very limited in the past, providing little history to inform a management approach. For 2012-13, the management focus is on developing a management programme that will increase our knowledge of the toothfish stock within the New Zealand EEZ and provide a better understanding of the fishery to allow the setting of an appropriate TAC. This is expected to be carried out through an exploratory fishery, possibly under a special permit, that will provide the necessary information while also supporting the commercial development of the toothfish fishery.

Patagonian toothfish is a trans-boundary straddling stock with Australia's Macquarie Island toothfish fishery. Management of Patagonian toothfish will require communication and cooperation with the Australian Fisheries Management Authority.

Harvest strategy

Because of its status as a straddling stock and the shared responsibility, Patagonian toothfish was introduced to the QMS with a agreed harvest strategy to be implemented once sufficient information is available. This harvest strategy is based on that of the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), the agency responsible for the management of toothfish in Antarctic waters. The Australian agency responsible for management of the Macquarie Island toothfish stock has also adopted the CCAMLR harvest strategy.

The CCAMLR harvest strategy contains decision rules that are more stringent than the defaults for targets and hard limits defined in the New Zealand Harvest Strategy Standard (essentially B_{MSY} or proxy and 10% of the unfished level, respectively). In essence the CCAMLR harvest strategy sets a target for the stock so that over a period of 35 years the size of the spawning stock remains at least half of what it would have been in the absence of fishing. In addition a hard limit is established such that if the stock size was at, or projected to fall below 20% of what it would have been in the absence of fishing, the fishery would be closed.

Information on the current status of Patagonian toothfish stocks can be found in Appendix I, or for more information see the 2012 Stock Assessment Plenary.

Ribaldo

Management approach

Only ribaldo stocks RIB3-8 are managed through the National Deepwater Plan. As a Tier 2 species, there are no stock assessments for ribaldo. The fishery will be managed through regular monitoring of CPUE, sampling by observers, and the Chatham Rise trawl survey for RIB4. Stock characterisations and CPUE standardisations will be undertaken every three years.

Harvest strategy

The harvest strategy for all the Tier 2 stocks is based on the following generic reference points (Table 29) and corresponding management responses detailed in the Ministry's Harvest Strategy Standard. Within the National Deepwater Plan, the intention is to develop specific management procedures for Tier 2 stocks as information becomes available.

Information on the current status of ribaldo stocks can be found in Appendix I, or for more information see the 2012 Stock Assessment Plenary.

APPENDIX I: Management Settings and Current Status of species currently covered by the National Deepwater Plan

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HOK: Hoki (Tier 1)



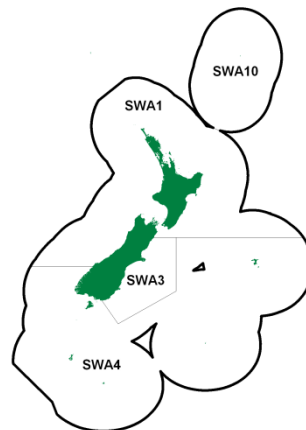
Catch limits and Allowances (tonnes)						
Stock	1 Oct 2011 TAC		1 Oct 2011 TACC	Recreational	Customary	Other Mortality
HOK 1	131,340		130,000	20	20	1,300
2011-12 Planned Catch split						
Eastern stock			60,000 tonnes			
Western stock			70,000 tonnes			
Reference points and Current Status						
Metric			Status			
Target range		35-50% B ₀				
B _{MSY}	Eastern stock	24% B ₀		B ₂₀₁₁ : 53% B ₀		
	Western stock	25% B ₀		B ₂₀₁₁ : 41% B ₀		
Soft limit		20% B ₀		Both stocks 'Exceptionally Unlikely' (< 1%) to be below limit		
Hard limit		10% B ₀		Both stocks 'Exceptionally Unlikely' (< 1%) to be below limit		
Exploitation rate (F)		10-25% of target biomass				
Deemed value rates						
Stock		Interim		Annual		Differential
HOK 1		\$0.45 per kg		\$0.90 per kg		\$1.30 @ catch >102% of ACE
Environmental indicators						
Seabirds		2010-11: 53 observed captures ⁸				
Marine mammals		2010-11: 23 observed captures				
Benthic interactions		2008-09: 0.44% of EEZ		Total from 1989-90 to 2008-09: 4.0% of EEZ		
Economic indicators (calendar year)						
Quota value 2009		\$815m ⁹				
Export earnings 2011		\$183.6m ¹⁰				

⁸ From <http://bycatch.dragonfly.co.nz/>, which can be accessed through an MPI issued password- where estimated captures have not been calculated observed captures are reported.

⁹ Statistics New Zealand as not quantified annual quota values since 2009 subsequently all values in Appendix I are still 2009 values.

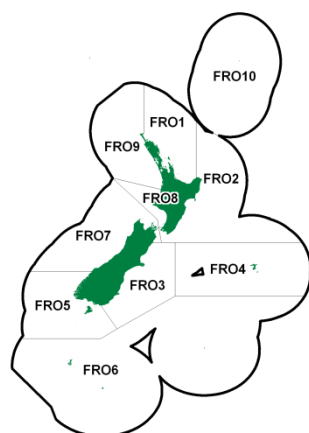
¹⁰ MAF Quarterly Report : Fisheries and Aquaculture Production and Trade period ending December 2011

SWA: Silver warehou (Tier 2)



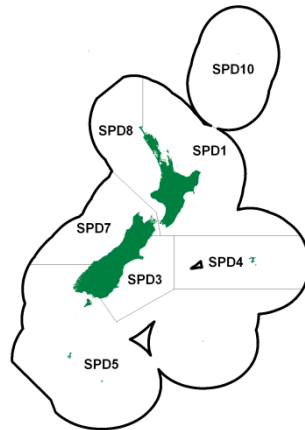
Catch limits and Allowances (tonnes)				
Stock	1 Oct 2011 TAC	1 Oct 2011 TACC	Recreational	Customary
SWA 1	3,003	3,000	2	1
SWA 3	3,280	3,280	0	0
SWA 4	4,090	4,090	0	0
Reference Points and Current Status				
Metric		Status		
MCY – SWA 1		650 -1400		
Deemed value rates				
Stock	Interim	Annual	Differential	
SWA 1 SWA 3 SWA 4	\$0.50 per kg	\$1.22 per kg	\$1.74 @ 110-130% \$3.00 @ >130%	
Economic Indicators (calendar year)				
Quota value 2009	\$83m			
Export earnings 2009	\$21.2m (may include some white warehou exports)			

FRO: Frostfish (Tier 2)



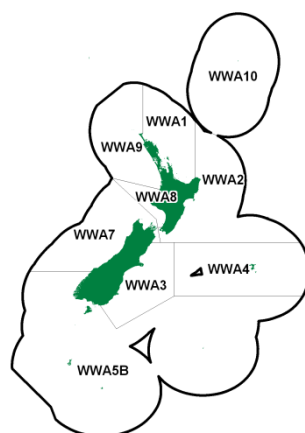
Catch limits and Allowances (tonnes)				
Stock	1 Oct 2011 TAC	1 Oct 2011 TACC	Recreational	Customary
FRO 1	151	149	1	1
FRO 2	112	110	1	1
FRO 3	176	176	0	0
FRO 4	28	28	0	0
FRO 5	135	135	0	0
FRO 6	11	11	0	0
FRO 7	2,625	2,623	1	1
FRO 8	649	649	0	0
FRO 9	140	138	1	1
Reference Points and Current Status				
Metric		Status		
MCY/CAY/B _{MSY}		Unknown		
Deemed value rates				
Stock	Interim	Annual	Differential	
FRO 1	\$0.02 per kg	\$0.04 per kg	na	
FRO 2	\$0.13 per kg	\$0.26 per kg	na	
FRO 3	\$0.17 per kg	\$0.34 per kg	na	
FRO 4	\$0.12 per kg	\$0.24 per kg	na	
FRO 5 FRO 6 FRO 7 FRO 8 FRO 9	\$0.08 per kg	\$0.15 per kg	na	
Economic Indicators (calendar year)				
Quota value 2010	\$2.8m			
Export earnings 2010	No export information specific to frostfish is currently available			

SPD: Spiny dogfish (Tier 2)



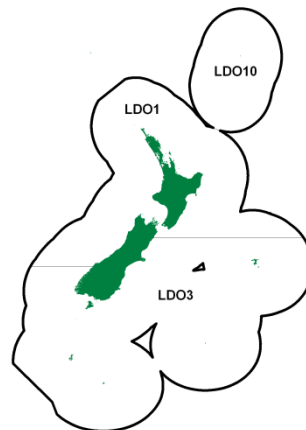
Catch limits and Allowances (tonnes)					
Stock	1 Oct 2011 TAC	1 Oct 2011 TACC	Recreational	Customary	Other Mortality
SPD 4	1,662	1,626	10	10	16
SPD 5	3,753	3,700	8	8	37
Reference points and Current Status					
Metric			Status		
MCY/CAY/B _{MSY}			Unknown		
Deemed value rates					
Stock		Interim	Annual	Differential	
SPD 4 SPD 5		\$0.05 per kg	\$0.10 per kg	na	
Economic Indicators (calendar year)					
Quota value 2009		\$6.1m			
Export earnings 2009		\$2.5m			

WWA: White warehou (Tier 2)



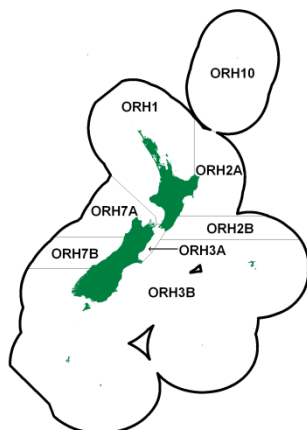
Catch limits and Allowances (tonnes) 2011				
Stock	TAC	TACC	Recreational	Customary
WWA 3	585	583	1	1
WWA 4	332	330	1	1
WWA 5B	2,621	2,617	2	2
WWA 7	129	127	1	1
WWA 8	1	1	0	0
WWA 9	0	0	0	0
Reference Points and Current Status				
Metric		Status		
MCY/CAY/B _{MSY}		Unknown		
Deemed value rates				
Stock	Interim	Annual	Differential	
WWA 3 WWA 4 WWA 7 WWA 5B	\$0.52 per kg	\$1.03 per kg	\$2.00 @ >110%	
WWA 8 WWA 9	\$0.27 per kg	\$0.54 per kg	na	
Economic Indicators (calendar year)				
Quota value 2009	\$16.8m			
Export earnings 2009	No export information specific to white warehou is currently available			

LDO: Lookdown dory (Tier 2)



Catch limits and Allowances (tonnes) 2011					
Stock	TAC		TACC	Recreational	Customary
LDO 1	168		168	0	0
LDO 3	614		614	0	0
Reference Points and Current Status					
Metric			Status		
Target	40% B ₀		Both stocks are Unknown		
Soft Limit	20% B ₀		Both stocks are Unknown		
Hard limit	10% B ₀	LDO 1	Unknown		
		LDO 3	B ₂₀₁₁ Unlikely (<40%) to be below the Hard Limit		
Exploitation rate (F)					
Deemed value rates					
Stock		Interim	Annual	Differential	
LDO 1		\$0.21 per kg	\$0.42 per kg	na	
LDO 3		\$0.21 per kg	\$0.42 per kg	na	
Economic Indicators (calendar year)					
Quota value 2011		\$0.9m			
Export earnings 2011		Primarily sold domestically and does not feature in export statistics			

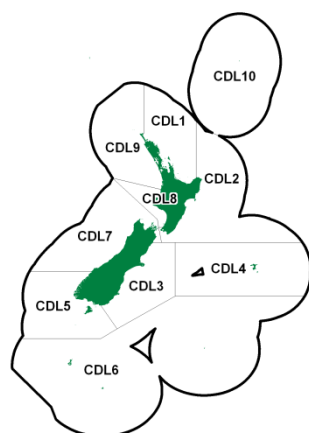
ORH: Orange roughy (Tier 1)



Catch limits and Allowances (tonnes) 2011					
Stock	TAC	TACC	Recreational	Customary	Other Mortality
ORH 1	1,470	1,400	0	0	70
ORH 2A	919	875	0	0	44
ORH 2B	194	185	0	0	9
ORH 3A	436	415	0	0	21
ORH 3B	3,780	3,600	0	0	180
ORH 7A	525	500	0	0	25
ORH 7B	1	1	0	0	0
Catch splits (in tonnes)					
Stock		Sub-stock	Agreed catch limit		
ORH 1		Area A	200		
		Area B	500		
		Area C	500		
		Area D	200 (incl. 30 tonnes bycatch limit in the Mercury-Colville Box)		
ORH 2A North		ORH 2A North	200		
ORH 2A South, 2B and 3A		MEC	1,230		
ORH 3B		NW Chatham Rise	750		
		E and S Chatham Rise	1,950		
		Puysegur	150		
		Sub-Antarctic	500		
Reference Points and Current Status					
Metric			Status		
Target	B _{MSY} is currently used as a default target level: 30% B ₀	ORH 1 (Mercury-Colville Box)	Unknown (B ₂₀₀₁ : 10-15% B ₀)		
		ORH 2A North	B ₂₀₀₃ : 24% B ₀		
		ORH 2A, 2B, 3A (MEC)	B ₂₀₁₁ : 9 or 23% B ₀		
		ORH 3B NW Chatham Rise	B ₂₀₀₆ : 9-11% B ₀		
		ORH 3B E & S Chatham Rise	B ₂₀₁₁ : 15-38% B ₀ Mean: 24% B ₀		
		ORH 3B Puysegur	Reopened in 2010-11 - unknown		
		ORH 3B Sub-Antarctic	-		
		ORH 7A	B ₂₀₁₁ : 25%B ₀		
		ORH 7B	B ₂₀₀₄ : 17% B ₀		

Soft limit	20%B ₀	ORH 1	Unknown
		ORH 2A North	Unlikely (<40%) below
		ORH 2A South, 2B, 3A (MEC)	Likely (>60%) to be below
		ORH 3B NW Chatham Rise	Very Likely (>90%) to be below
		ORH 3B E & S Chatham Rise	About as Likely As Not (40-60%) below
		ORH 3B Puysegur	Unknown
		ORH 3B Sub-Antarctic	-
		ORH7A	Unlikely (<40%) below
		ORH7B	Likely (>60%) below
Hard limit	10%B ₀	ORH 1	Unknown
		ORH 2A North	Very Unlikely (<10%) to be below
		ORH 2A, 2B, 3A (MEC)	Unlikely (<40%) below
		ORH 3B NW Chatham Rise	About as Likely As Not (40-60%) below
		ORH 3B E & S Chatham Rise	Unlikely (<40%) below
		ORH 3B Puysegur	Unknown
		ORH 3B Sub-Antarctic	-
		ORH7A	Very Unlikely (<10%) below
		ORH7B	Unlikely (<40%) below
Harvest strategy			
Exploitation rate (F)			4.5% of target biomass
Deemed value rates			
Stock	Interim	Annual	Differential
ORH 1	\$1.70 per kg	\$3.40 per kg	\$5.00 @ > 110%
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%
ORH 3B	\$2.50 per kg	\$5.00 per kg	\$6.25 @ > 110%
ORH 7A	\$1.60 per kg	\$3.20 per kg	\$3.84 @ 120-140% \$4.48 @ 140-160% \$5.12 @ 160-180% \$5.76 @ 180-200% \$6.40 @ > 200%
ORH 7B	\$1.60 per kg	\$3.20 per kg	\$5.00 @ > 110%
Environmental Indicators			
Seabirds	Under development		
Marine mammals	Under development		
EEZ trawled	2008-09: 0.06%		Total from 1989-90: 0.82%
Economic Indicators (calendar year)			
Quota value 2009	\$282m		
Export earnings 2011	\$37M		

CDL: Black cardinalfish (Tier 2)



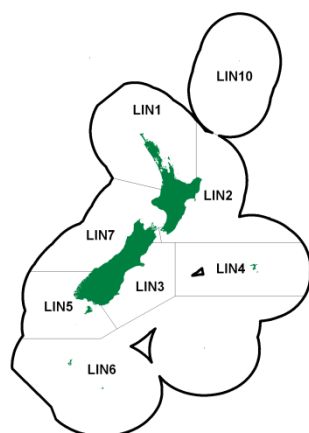
Catch limits and Allowances (tonnes) 2011					
Stock	TAC	TACC	Recreational	Customary	Other Mortality
CDL 1	1,320	1,200	0	0	120
CDL 2	460	440	0	0	20
CDL 3	196	196	0	0	0
CDL 4	66	66	0	0	0
CDL 5	22	22	0	0	0
CDL 6	1	1	0	0	0
CDL 7	39	39	0	0	0
CDL 8 & 10	0	0	0	0	0
CDL 9	4	4	0	0	0
Reference Points and Current Status					
Target	40% B ₀	CDL 2, 3 & 4	B ₂₀₀₉ : 12-24% B ₀ (based off two model runs) Very Unlikely (<10%) at or above		
Soft Limit	20% B ₀	CDL 2, 3 & 4	Likely (>60%) – About as likely as not (40-60%) below		
Hard Limit	10% B ₀	CDL 2, 3 & 4	About as Likely as Not (40-60%) – Unlikely (<40%) below		
Deemed value rates					
Stock		Interim	Annual	Differential	
CDL 1 CDL 6 CDL 7 CDL 8 CDL 9 CDL 10		\$0.15 per kg	\$0.30 per kg	na	
CDL 2		\$0.30 per kg	\$0.60 per kg	\$0.69 @ > 120%	
CDL 3 CDL 4		\$0.26 per kg	\$0.52 per kg	\$0.60 @ > 120%	
CDL 5		\$0.26 per kg	\$0.52 per kg	na	
Economic Indicators (calendar year)					
Quota value 2009		\$4.2M			
Export earnings 2009		\$1.7M			

SBW: Southern blue whiting (Tier 1)



Catch limits and Allowances (tonnes) 2011					
Stock	TAC	TACC	Recreational	Customary	Other Mortality
SBW 1	8,000	8,000	0	0	
SBW 6A	1,640	1,640	0	0	0
SBW 6B	7,000	6,860	0	0	140
SBW 6I	30,000	29,400	0	0	600
SBW 6R	5,500	5,500	0	0	
Reference Points and Current Status					
Target	40% B ₀	SBW 6A	Unknown		
		SBW 6B	Unknown		
		SBW 6I	B ₂₀₁₁ : 50% B ₀		
		SBW 6R	Unknown for all		
Soft limit	20% B ₀	SBW 6A	Unknown		
		SBW 6B	Unknown		
		SBW 6I	B ₂₀₁₁ Exceptionally Unlikely (<1%) to be below		
Hard limit	10% B ₀	SBW 6A	Unknown		
		SBW 6B	Unknown		
		SBW 6I	B ₂₀₁₁ Exceptionally Unlikely (<1%) to be below		
Deemed value rates					
Stock	Interim		Annual	Differential	
SBW1	\$0.41 per kg		\$0.46per kg	\$0.55 @ >120 – 140%	
\$0.64 @ >140 – 160%					
\$0.74 @ >160 – 180%					
\$0.83 @ >180 – 200%					
\$0.90 @ >200%					
SBW 6A SBW 6B SBW 6I SBW 6R				\$0.60 @ >102 – 150%	
			\$0.92 @ > 150%		
Environmental indicators					
Seabirds	2010-11: 16 observed captures ¹				
Marine mammals	2010-11: 36 observed fur seal captures, and 6 observed sea lion captures ¹				
Benthic interactions	2008-09: 0.02% of EEZ		Total from 1989-90: 0.43% of EEZ		
Economic indicators (calendar year)					
Quota value 2009	\$74.3m				
Export earnings 2011	\$36m				

LIN: Ling (Tier 1)



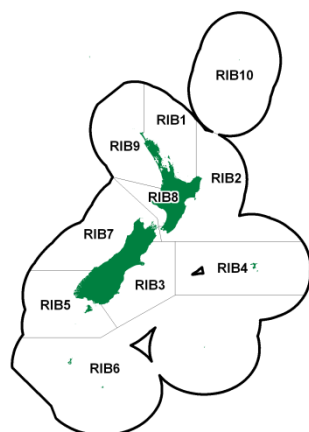
Catch limits and Allowances (tonnes) 2011					
Stock	TAC	TACC	Recreational	Customary	Other Mortality
LIN 3	2,060	2,060	0	0	0
LIN 4	4,200	4,200	0	0	0
LIN 5	3,633	3,595	1	1	36
LIN 6	8,590	8,505	0	0	85
LIN 7	2,501	2,474	1	1	25
Reference Points and Current Status					
Metric				Status	
Target	40% B ₀	LIN 3&4		B ₂₀₀₇ : 45% B ₀	
		LIN 5&6		B ₂₀₀₇ : 55 – 95% B ₀	
		LIN 6B		B ₂₀₀₆ : 61% B ₀	
		LIN7WC		B ₂₀₀₈ : 69% B ₀	
		LIN CS		B ₂₀₁₀ : 54% B ₀	
Soft limit	20% B ₀	LIN (all stocks)		Very Unlikely (<10%) to be below	
Hard limit	10% B ₀	LIN (all stocks)		Exceptionally Unlikely (<1%) to be below	
Deemed value rates					
Stock	Interim		Annual < 102%		Differentials
LIN 3 LIN 4 LIN 5 LIN 6 LIN 7	\$1.20 per kg		\$2.38 per kg		\$3.40 @ 102-120% \$6.00 @ >120%
Environmental Indicators					
Seabirds	2009-10: 40 est. captures (trawl) 589 est. captures (long-line) ¹				
Marine mammals	2009-10: 6 observed captures ¹				
Benthic interactions	2008-09: 0.02% of EEZ		Total from 1989-90: 0.31% of EEZ		
Economic Indicators (calendar year)					
Quota value 2009			\$246.2m		
Export earnings 2011			\$43.5m		

PTO: Patagonian toothfish (Tier 2)



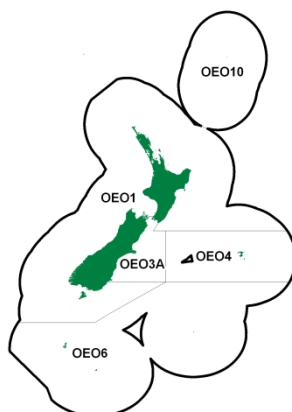
Catch limits and Allowances (tonnes) 2011				
Stock	1 Oct 2010 TAC	1 Oct 2010 TACC	Recreational	Customary
PTO 1	50	49.5	0	0
Reference Points and Current Status				
Metric		Status		
Default harvest strategy		Unknown		
Deemed value rates				
Stock	Interim	Annual 100-110%	Differential	
PTO 1	\$13.50 per kg	\$15.00 per kg	\$25.00 @ > 110%	
Economic Indicators (calendar year)				
Quota value 2009		\$N/A		
Export earnings 2011		\$1.6m		

RIB: Ribaldo (Tier 2)



Catch limits and Allowances (tonnes) 2011								
Stock	TAC		TACC		Recreational		Customary	
RIB 3	394		394		0		0	
RIB 4	357		357		0		0	
RIB 5	52		52		0		0	
RIB 6	231		231		0		0	
RIB 7	330		330		0		0	
RIB 8	1		1		0		0	
Reference Points and Current Status								
Metric				Status				
Target	40% B ₀		RIB 3&4, RIB 5&6		Unknown			
Soft Limit	20% B ₀		RIB 3&4, RIB 5&6		Unlikely (< 40%) to be below			
Hard Limit	10% B ₀		RIB 3&4, RIB 5&6		Unlikely (< 40%) to be below			
Deemed value rates (per kg)								
Stock	Interim	100-120%		120-140%	140-160%	160-180%	180-200%	200%+
RIB 3 RIB 4 RIB 5 RIB 8	\$0.40	\$0.30		\$0.36	\$0.42	\$0.48	\$0.54	\$0.60
RIB 6	\$0.40	\$0.80		\$0.96	\$1.12	\$1.28	\$1.44	\$1.60
RIB 7	\$0.40	\$0.80	\$1.20	\$2.00				
Economic indicators (calendar year)								
Quota value 2009				\$N/A				
Export earnings 2009				\$N/A				

Oreos (Tier 1)



2010/11 Landings, Catch limits and Allowances (tonnes)								
Stock	TAC	TACC	Recreational	Customary	Other mortality			
OEO 1	2,500	2,500	0	0	0			
OEO 3A	3,518	3,350	0	0	168			
OEO 4	7,000	7,000	0	0	0			
OEO 6	N/A	6,000	N/A	N/A	N/A			
Harvest strategy – as per the Harvest Strategy Standard								
Target	40% B ₀	OEO 1						
		OEO 3A	Black oreo: Unlikely to be at or above target					
			Smooth oreo: About As Likely As Not to be at or above target					
		OEO 4	Black oreo: Unknown					
			Smooth oreo: Likely to be at or above target					
OEO 6								
Soft Limit	20% B ₀	OEO 1						
		OEO 3A	Black oreo: Unlikely to be below the soft limit					
			Smooth oreo: Unlikely to be below the soft limit					
		OEO 4	Black oreo: Unknown					
			Smooth oreo: Very Unlikely to be below the soft limit					
OEO 6								
Hard Limit	10% B ₀	OEO 1						
		OEO 3A	Black oreo: Unlikely to be below the hard limit					
			Smooth oreo: Very Unlikely to be below the hard limit					
		OEO 4	Black oreo: Unknown					
			Smooth oreo: Very Unlikely to be below the hard limit					
OEO 6								
2010/11 Deemed value rates (per kg) and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2010/11 Actual
OEO 1	\$0.39	\$0.78	\$0.936	\$1.092	\$1.248	\$1.404	\$1.56	\$2,403
OEO 4								\$14,528
OEO 6								0
OEO 3A	\$0.38	\$0.76	\$0.912	\$1.064	\$1.216	\$1.368	\$1.52	0
Current environmental indicators								
Seabirds		2009-10: 19 observed captures; 43 estimated total captures ¹¹						
Marine mammals		2009-10: 0 observed captures; 0 estimated total captures						
Benthic interactions (area trawled)		2009-10: 0.02% of EEZ				Cumulative from 1989-90: 0.43% of EEZ		
Economic Indicators (calendar year)								
Quota value 2009		\$N/A						
Export earnings 2011		\$19.0m						

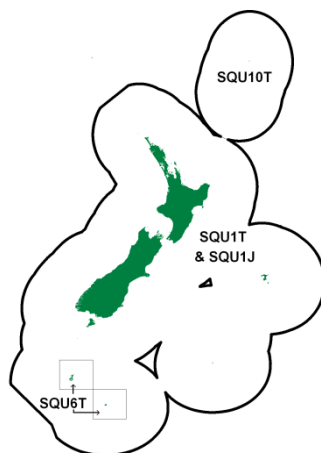
¹¹ Capture information is based on all fishing activity targeting both oreo and orange roughy.

HAK: Hake (Tier 1)



Catch limits and Allowances (tonnes) 2011					
Stock	TAC	TACC	Recreational	Customary	Other Mortality
HAK 1	-	3,701	-	-	-
HAK 4	1,818	1,800	0	0	18
HAK 7	7,777	7,700	0	0	77
Reference Points and Current Status					
Metric			Status		
Target	40% B ₀	HAK 1	B ₂₀₀₇ : 64% B ₀		
		HAK 4	B ₂₀₀₉ : 47% B ₀		
		HAK 7	Unknown		
Soft Limit	20% B ₀	HAK 1	Exceptionally Unlikely (<1%) to be below		
		HAK 4	Very Unlikely (<10%) to be below		
		HAK 7	Unknown		
Hard Limit	10% B ₀	HAK 1	Exceptionally Unlikely (<1%) to be below		
		HAK 4	Exceptionally Unlikely (<1%) to be below		
		HAK 7	Unknown		
Deemed value rates					
Stock		Interim	Annual	Differential	
HAK 1 HAK 4 HAK 7		\$0.50 per kg	\$1.22 per kg	\$1.74 @ 110-130% \$3.00 @ >130%	
Current environmental indicators					
Seabirds		2010-11: 1 white-shinned petrel observed captured			
Marine mammals		2010-11: 1 NZ sea lions observed captured			
Benthic interactions		2008-09		Total	
Economic Indicators (calendar year)					
Quota value 2009		\$246.2M			
Export earnings 2011		\$15.7M (calendar year)			

Squid (Tier 1)

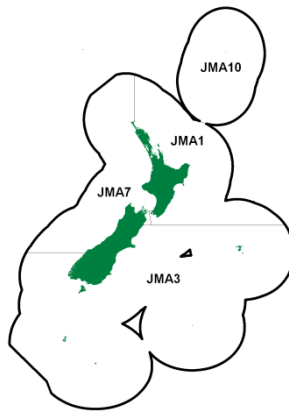


2010/11 Landings, Catch limits and Allowances (tonnes)								
Stock	TAC	TACC	Recreational		Customary	Other mortality		
SQU 1J	N/A	50,212	N/A		N/A	N/A		
SQU 1T	44,741	44,741	0		0	0		
SQU 6T	N/A	32,369	N/A		N/A	N/A		
Harvest strategy – as per the Harvest Strategy Standard								
2010/11 Deemed value rates (per kg) and charges								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2010/11 Actual
SQU 1J	\$0.44	\$0.88	\$1.056	\$1.232	\$1.408	\$1.584	\$1.76	\$180
SQU 1T								\$493
SQU 6T								0
Current environmental indicators								
Seabirds		2009-10: 92 observed captures; 385 estimated total captures						
Marine mammals		Fur seals	2009-10: 8 observed captures; 35 estimated total captures					
		NZ sea lion	2009-10: 4 observed captures; 85 estimated total captures					
Benthic interactions (area trawled)		2008-09: 0.02% of EEZ				Total from 1989-90: 0.31% of EEZ		
Economic Indicators (calendar year)								
Quota value 2009		\$N/A						
Export earnings 2009		\$N/A						

Squid Operational Plan

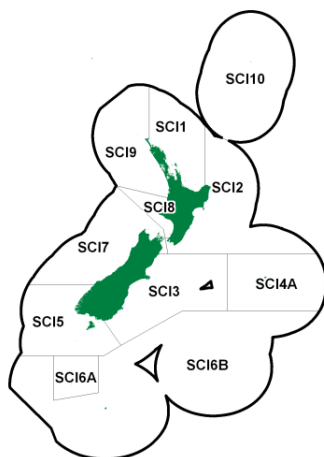
2011 FRML and NZ sea lion interactions						
Stock	FRML	Completed tows	Observer coverage	Observed captures	Estimated captures	% of FRML
SQU 6T	68	1,573	33%	0	58	85

Jack mackerel (Tier 1)



Catch limits and Allowances for 1 October 2010 (tonnes)								
Stock	TAC		TACC	Recreational	Customary		Other Mortality	
JMA 3	NA		18,000	NA	NA		NA	
JMA 7	NA		32,537	NA	NA		NA	
Harvest strategy – as per the Harvest Strategy Standard								
2010-11 Deemed value rates (per kg)								
Stock	Interim	100-120%	120-140%	140-160%	160-180%	180-200%	200%+	2010-11 Actual
JMA 3	\$0.08	\$0.09	\$0.108	\$0.126	\$0.144	\$0.162	\$0.18	\$163
JMA 7	\$0.08	\$0.15	\$0.18	\$0.21	\$0.24	\$0.27	\$0.30	\$104
Current environmental indicators								
Seabirds		2010-11: 7 observed captures						
Marine mammals		2010-11: 0 observed captures						
Benthic interactions		2008-09: 0.02% of EEZ				Total from 1989-90: 0.31% of EEZ		
Economic Indicators (calendar year)								
Quota value 2009			\$53.6M					
Export earnings 2011			\$41.7M					

SCI: Scampi (Tier 1)



Catch limits and Allowances (tonnes)					
Stock	1 Oct 2011 TAC	1 Oct 2011 TACC	Recreational	Customary	Other Mortality
SCI 1	126	120	0	0	6
SCI 2	105	100	0	0	5
SCI 3	357	340	0	0	17
SCI 4A	126	120	0	0	6
SCI 5	42	40	0	0	2
SCI 6A	321	306	0	0	15
SCI 7	79	75	0	0	4
Reference Points and Current Status					
Metric			Status		
Target	40% B ₀	SCI 1	B ₂₀₁₁ : Likely (> 60%) to be above		
		SCI 2	B ₂₀₁₁ : Likely (> 60%) to be above		
		SCI 3 & 6A	Unknown		
Soft Limit	20% B ₀	SCI 1	Very Unlikely (<10%)		
		SCI 2			
Hard Limit	10% B ₀	SCI 1 SCI 2	Very Unlikely (< 10%)		
Deemed value rates					
Stock		Interim	Annual	Differential	
SCI 1		\$26.65 per kg	\$51.30 per kg		
SCI 2					
SCI 3					
SCI 4A					
SCI 6A					
Current environmental indicators					
Seabirds		2010-11: 86 observed seabird captures			
Marine mammals		2010-11: No observed marine mammal captures			
Benthic interactions					Total
Economic Indicators (calendar year)					
Quota value 2009		\$132.3M			
Export earnings 2011		\$22.4M (calendar year)			
Port Price 2011		\$11.08M			

