



Annual Operational Plan for Inshore Shellfish Fisheries

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2.0 Glossary of Terms

Aquatic environment	The natural and biological resources comprising any aquatic ecosystem including aquatic life. These environments can include: oceans, seas, coastal areas, inter-tidal areas, estuaries, rivers, lakes and other places.
Biological diversity	The variability among living organisms, including diversity within species, between species and of ecosystems
Biomass	The size of a stock in units of weight.
B_{MSY}	The average stock biomass (or size) that results from taking an average catch of maximum sustainable yield under various types of harvest strategies.
Fisheries resources	Any one or more stocks or species of fish, aquatic life or seaweed.
Fishstock or Stock	Any fish, aquatic life or seaweed of one or more species that are treated as a unit for the purpose of fisheries management.
Group	The grouping of fish stocks to facilitate multi-stock objective setting and service delivery. The grouping methodology categorises stocks according to their desirability to fishers, their biological vulnerability, and how management objectives and service strategies might differ across categories.
Habitat	Includes all aspects of the aquatic environment which fisheries resources depend on directly or indirectly in order to carry on their life processes.
Hard limit	A specified biomass (or proxy) reference level below which a fishery should be considered for closure.
Harvest strategy	Identifies target, soft and hard biomass reference points and management actions associated with achieving the target and avoiding the limits.
Management Action(s)	The key results that will be targeted for completion during the time period of the AOP that will contribute to the delivery of management objectives in the National Fisheries Plans for Inshore Fisheries.
Management Objective(s)	The high-level objectives set for inshore shellfish fisheries in the National Fisheries Plan for Inshore Shellfish.
Management Procedure	Tool used to guide the setting of catch limits. Specifies what data will be used, and how it will be used, to determine a catch limit.
Management Service(s)	The high-level tasks and resources required to ensure delivery of the Management Actions. These include services provided for the purposes of fisheries management, such as changes to catch limits and rules, education, enforcement, monitoring and research.

Maximum Sustainable Yield (MSY)	In relation to any stock , means the greatest yield that can be achieved over time while maintaining the stock's productive capacity, having regard to the population dynamics of the stock and any environmental factors that influence the stock.
Performance measure(s)	Assists the Ministry in determining whether the management objective(s) is/are being met. Performance measures may be direct or indirect depending on the information available. Assessment of the measure may provide a signal that there is a need to investigate further and to possibly take new action.
Protected species	As defined in the Wildlife Act 1953 and the Marine Mammals Protection Act 1978.
Quota Management System (QMS)	System of fisheries management for the main harvest species in New Zealand which includes the requirement to set a TAC , make allowances for customary Māori interests, recreational interests and fishing-related mortality and set a TACC .
Service Strategies	The Ministry's preferred approach (in general terms) where a management intervention or service is required to achieve the management objective(s).
Soft Limit	A specified biomass (or proxy) level that triggers a requirement for a formal, time constrained rebuilding plan.
Stock Status	A determination made about the current condition of the stock on the basis of stock assessment results.
Sustainability	Maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations and avoiding, remedying or mitigating any adverse effects of fishing on the aquatic environment .
Sustainability Measures	Means any measure or action taken for the purpose of ensuring sustainability.
Target biomass	Generally a biomass (or proxy) level that management actions are designed to achieve with at least 50% probability.
Total Allowable Catch (TAC)	The total quantity of fishing-related mortality allowed for a QMS stock in a given fishing year.
Total Allowable Commercial Catch (TACC)	The total quantity of commercial catch allowed for a QMS stock in a given fishing year.
Utilisation	Conserving, using, enhancing and developing fisheries resources to enable people to provide for their social, economic and cultural wellbeing.

3.0 Introduction

3.1 Purpose

The Annual Operational Plan describes the specific Management Actions relating to all fisheries managed under the National Fisheries Plan for Inshore Shellfish (the Shellfish Plan) that will be undertaken during the 2012/13 financial year. Completion of the Management Actions will contribute to meeting the Management Objectives, outcomes and goals described in the Shellfish Plan.

3.2 Context

The Annual Operational Plan is one of two annual companion documents to the Shellfish Plan. The Shellfish Plan provides the overarching framework for management of New Zealand's inshore shellfish fisheries and is implemented through an annual planning and service delivery cycle (refer Figure 1).

The Shellfish Plan guides the annual cycle by establishing the Management Objectives for the fisheries. The Annual Operational Plan sets out the specific stock, fishery and across-fishery Management Actions and Management Services that will contribute to the achievement of the Shellfish Plan Management Objectives.

This Annual Operational Plan is informed by an *Annual Review Report for Inshore Shellfish*. The *Annual Review Report* presents information on:

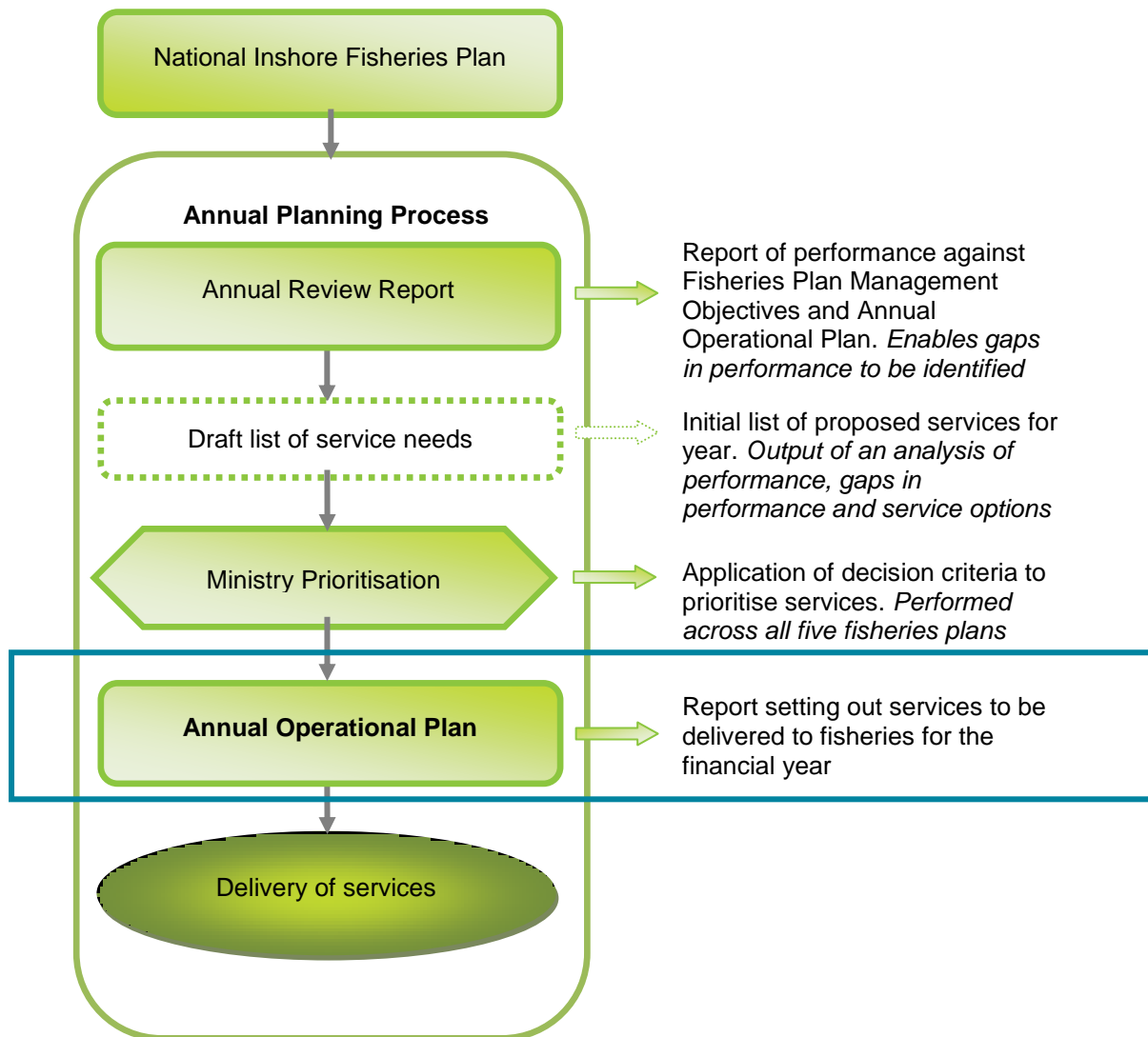
1. The status of shellfish fisheries relative to the performance measures set out in the Shellfish Plan (and associated stock-specific performance measures), and
2. Delivery of Management Actions and Services specified in the previous year's Annual Operational Plan [Note: the upcoming Annual Review Report will review last year's (i.e. the 2011/12) Annual Operational Plan].

Together, parts one and two of the Annual Review Report identify potential areas of focus when developing the Annual Operational Plan, which are analysed and discussed with tangata whenua and stakeholders to determine what, if any, management action is required.

Not all management actions are driven by performance gaps. Management Actions and Services are also applied to maintain a desired level of performance or to further enhance performance in a key result area.

The demand for Management Services is frequently greater than can be provided by the Ministry for Primary Industries (the Ministry). An internal prioritisation within the Ministry across draft Annual Operational Plans from the five different Fisheries Plans (Deepwater, Highly Migratory, Inshore Finfish, Inshore Shellfish, and Freshwater) seeks to address competing interests. Engagement with tangata whenua and stakeholders also provides opportunities to identify where these groups can provide needed or desired services.

Figure 1: Annual Planning and Service Delivery Cycle



3.3 Operational Plan ‘Components’

The terminology used in the Annual Operational Plan is further described below.

Stock Groups

The Shellfish Plan groups fish stocks to facilitate multi-stock objective setting and service delivery. The grouping methodology categorises stocks according to their desirability to fishers, their biological vulnerability, and how management objectives and service strategies might differ across categories. This Annual Operational Plan organises management actions by stock groups (defined in Appendix 1), but there are also a number of actions that relate to stocks in multiple groups.

Management Actions

Management Actions are the key results targeted for completion during the time period of the Annual Operational Plan. These actions will contribute to the successful delivery of the Management Objectives specified in the Plan. Each Management Action will provide a clear link to the relevant Management Objective(s) in the Shellfish Plan.

Management Actions are described at a high-level to provide a clear overview of what the Ministry is planning to achieve for that financial year. They may apply to a specific stock, fishery, group, or across the entire Shellfish Plan.

Management Services

Management Services are the high-level tasks and resources required to successfully deliver the Management Actions. Each Management Service will describe:

1. The task to be completed (nature of the service).
2. The organisation(s) responsible for delivery – the Ministry or external (if applicable).
3. Business group responsibilities for the Ministry or Ministry-led tasks.

Management Services will be detailed enough to allow business groups to plan and write their annual work programme. The description of each Management Service allows for flexibility in how individual business groups choose to provide that service. This flexibility gives business groups the ability to find the most practical and cost-effective way to deliver the service.

Core Services

There are a number of services provided by Ministry business groups that the Annual Operational Plan describes as ‘core’ services. Core services are defined as those that relate to the Ministry organisation as a whole, are delivered every year, and may be used by various business groups. This includes communications and Ministerial support provided by the Office of the Director General (business group), finance, data management and IT services, and legal services within Organisational Services (business group).

It also includes supporting processes that have been designed to achieve the governance conditions outlined in the Shellfish Plan. For example, services that support the operation of engagement forums like Iwi forums.

External Services

External services are services provided by tangata whenua and stakeholders, which contribute to the delivery of Management Actions. Some external services address a gap or maintain performance of a stock or fishery. In these cases if the external provider is unable to deliver the service, the Ministry may provide resourcing to ensure service delivery.

3.4 Structure

The Annual Operational Plan is set out in the following sections:

Chapter 2:	Management Actions Details the Management Actions that will be undertaken during the 2012/13 financial year. This section is organised by fishery groups.
Chapter 3:	Management Services Details the Management Services that will be required to deliver the Management Actions described in Chapter 2. This section is organised by “service provider”, for example Ministry Compliance & Response Directorate and External Providers.
Appendices:	Appendix 1: Stock Groups Sets out the stock groups as specified in the Shellfish Plan.

4.0 Management Actions

4.1 Introduction

The Ministry has set out 65 Management Actions to deliver in the 2012/13 financial year for inshore shellfish fisheries. Some of the Management Actions are stock or fishery specific, while others apply across all stocks in a group, all fisheries in the Shellfish Plan or all inshore fisheries.

The Management Action tables in this section explain the need for action and how these actions support the achievement of Management Objectives in the Shellfish Plan.

For each Management Action, the tables set out the:

- **Management Objectives** in the Shellfish Plan that the Management Action relates to.
- **Type of Action:**
 - *Carry-over Actions* that were progressed or initiated in 2011/12.
 - *Triggered Actions* that have arisen directly out of the review of the performance measures or have been identified as opportunities to improve current frameworks.
 - *Maintenance Actions* that are required to maintain performance of a stock, fishery, or the fisheries management framework (e.g. application of an approved management procedure).
- **Need for Action**, which describes the performance gap the Management Action seeks to fill or the reason for the Management Action.

4.2 Cross-Group Management Actions for Shellfish

Management Action	Type of Action(s)	Need for Action
Maximise/secure social, economic, and cultural benefits from each fishstock.		
<p>A1. Increase proportion of New Zealand fisheries waters covered by the customary regulations.*</p> <p>A2. Design initiatives to improve iwi and Tangata tiaki/Kaitiaki understanding of the importance and use of customary permit data and provide for easy reporting of data.*</p>	Triggered (Carry-over)	<p>Trends in the level of customary permit fulfilment are declining for some stocks, whereas for other stocks customary permit information is limited and/or highly uncertain.</p> <p>Customary authorisation and harvest reporting is low and/or reporting is not required (Regulation 27A¹ applies) in significant portions of many Fishery Management Areas.</p> <p>Improved customary reporting is important to help identify whether management objectives are being met.</p>
<p>A3. Complete large-scale multi-species survey to monitor recreational fisheries.*</p> <p>A4. Continue programmed research to integrate and improve estimates of recreational catch.*</p>	Triggered (Carry-over)	<p>Information available to assess trends in recreational participation rates is limited and not comparable across years.</p> <p>Available information on recreational fishing is highly uncertain and insufficient to determine trends over time. In general participation in recreational fishing activities is thought to have increased in the last decade.</p> <p>Improved information on recreational harvest and participation is an important first step to help identify whether management objectives are being met.</p>
<p>A5. Develop strategy for gathering information on non-commercial fisheries (including, but not limited to, catch and value).*</p>	Opportunity (Carry-over)	<p>The quality of non-commercial sector information used to monitor and inform stock status assessment and value assessment of fishstocks is poor relative to commercial sector information. The reduced information makes advising the Minister on non-commercial catches and values, in the context of informing his decisions on TAC and allowance setting, difficult.</p> <p>This action will consider how to support and provide direction to non-commercial representatives to collate and process information held by fishing clubs that can be used to inform Ministry processes. For example, delivering research that meets the Ministry's research standard, or being able to participate in research processes and activities.</p>

* Cross-fisheries plan management action – relevant to the National Fisheries Plans for Inshore Shellfish, Finfish, & Freshwater.

¹ Fisheries (Amateur Fishing) Regulations 1986.

Management Action	Type of Action(s)	Need for Action
<p>A6. Develop process to systematically scan regulations for opportunities to reduce regulatory costs.</p> <p>A7. Improve fisher awareness and understanding of fishing laws where current compliance levels are sub-optimal.</p> <p>A8. Increase deterrent activities where emerging or systemic illegal activities (or opportunities for illegal activity) are identified.</p>	Maintenance	<p>The Government and Ministry are committed to actively seeking opportunities to benefits and sustainable utilisation opportunities.</p> <p>Some regulations may inadvertently and unnecessarily constrain the benefits that can be attained from sustainable utilisation of shellfish fisheries. The development of a process to systematically scan for such constraints is intended to increase the timeliness by which unnecessary restrictions can be identified and removed or amended.</p> <p>Illegal fishing negatively impacts on the benefits that may be derived from legitimate shellfish fisheries across all sectors. Reducing illegal fishing may require fisheries management or compliance intervention services, or a combination of these, and calls for an adaptive framework to identify and respond to risks as they arise during the year.</p> <p>Ensuring high value shared fisheries (e.g. rock lobster and paua) are protected from illegal activities is important. Additionally, development opportunities for some Group 4 stocks may be at risk given the high market value of some species and emerging illegal catch and illegal trade (e.g. sea cucumber). The risk of illegal activities impinging on legitimate development opportunities in these fisheries needs to be actively managed.</p>
<p>A9. Develop a strategy to reduce the risk of localised depletion occurring in shellfish fisheries.</p>	Opportunity (Carry-over)	<p>The Ministry proposes to build on work that began in late 2011/12 to develop a strategy to reduce the risk of localised depletion occurring in shellfish fisheries.</p> <p>Popularity and accessibility of shellfish in some areas makes them susceptible to localised depletion, resulting in reduced sector benefits, conflict between sectors and applications for area closures or restrictions.</p> <p>Shellfish are generally sedentary or have a limited range compared to other marine species. Managing localised depletion avoids overfishing of local spawning populations and improves the benefits obtained by customary, recreational and commercial fishers.</p> <p>A number of areas and species were identified by the iwi and recreational forums to be subject to localised depletion effects. These species and locations will be examined to inform the development of a strategy to reduce the risk of the localised depletion occurring. Solutions to increase the benefits that could be attained from those fisheries or in those regions will be explored.</p>
<p>A10. Review the use of underwater breathing apparatus (UBA) for the commercial harvest of horse mussel, sea cucumber and kina.</p>	Triggered	<p>The Government and Ministry are committed to actively seeking opportunities to improve benefits and sustainable utilisation opportunities.</p> <p>Commercial stakeholders suggest allowing the use of UBA in the horse mussel, sea cucumber, and kina fisheries will provide a development opportunity for these potentially valuable target fisheries. For example, in the</p>

Management Action	Type of Action(s)	Need for Action
		horse mussel fishery the only feasible harvesting method is dredging, which damages the product.
Shellfish Groups 1-3: Maintain stocks at/above specified target reference levels.		
A11. Continue the implementation of a plan to establish harvest strategies for Group 1 – 3 shellfish stocks.	Triggered (Carry-over)	<p>For many Group1 – 3 shellfish stocks, stock-level targets and other reference points (e.g. soft and hard limits) have not been established to assess their performance against. A harvest strategy specifies a stock's management target and other reference points that will guide fisheries management decisions.</p> <p>Target levels and reference points will be based on suitable indicator series which are accepted by the Ministry's science working group's as an index of stock status or stock abundance. Some stocks do not have accepted stock status indicators. Others have indicators but are not supported by harvest strategies (i.e. target and limit reference levels).</p> <p>Harvest strategies will provide greater clarity to all fishery stakeholders about how we will manage stocks, as well as when and how we will propose management interventions (for example, TAC setting) to support a more responsive management framework.</p>
A12. Continue the review and development of the medium-term research plan(s) for Group 1 – 3 shellfish stocks.	Triggered (Carry-over)	<p>Current Medium-Term Research Plans that reflect the information requirements to monitor stock-level targets under harvest strategies are required. The development of these plans began in late 2012.</p> <p>The plans improve efficiency and certainty in research planning and support development/operation of harvest strategies. These plans also indirectly support the delivery of other initiatives to improve value derived from New Zealand's shellfish fisheries.</p>
A13. Review sustainability measures or other management controls for up to 10 shellfish species or stocks in the 1 April and 1 October sustainability rounds combined.	Maintenance	<p>Timely management intervention is important to both maximising value and ensuring sustainability. New information on the status for some stocks will become available during 2012-13.</p> <p>Catch limit reviews additional to stock-specific reviews specified in this Annual Operational Plan may be appropriate in the 1 April or 1 October sustainability rounds if:</p> <ul style="list-style-type: none"> • Operation of an agreed Management Procedure triggers a review; or, • New information on stock status supports a review.

Management Action	Type of Action(s)	Need for Action
<i>Protect, maintain and enhance habitats of particular significance for fisheries management.</i>		
A14. Implement an agreed definition of habitats of particular significance for shellfish fisheries management.*	Triggered	A working definition of habitats of particular significance for fisheries management was developed in 2012. This definition will be used to assist in informing fisheries management decision-making. Where habitats of particular significance for fisheries management are identified efforts can be made to protect and/or mitigate negative impacts on those habitats or areas that contribute to fishstock sustainability and ensure their long term use.
A15. Improve information to identify (locate) habitats of particular significance for fisheries management.	Opportunity	Although some habitats/areas that contribute to fishstock wellbeing have been protected, action and performance is difficult to plan and monitor, respectively. Implementation of the policy definition will assist in informing fisheries management decision-making to improve the information available to support identification of such areas.
A16. Develop "peer networks" in natural resource management agencies to share information where non-fishing activities may impact on the health of inshore shellfish fisheries.*	Triggered (Carry-over)	<p>The concept of habitats of particular significant for fisheries management are only captured under high-level policies and objectives in most resource policy and planning documents. There are few operational objectives or policies that would support protection of such habitats.</p> <p>With the development of a working policy definition the Ministry is in a better position to improve the dialogue on such habitats both internally and externally (e.g. with the Department of Conservation (DOC) and local council counterparts) at the operational level. The purpose of these networks will be to grow levels of understanding, monitoring and mitigation of non-fishing activities that may impact habitats of particular significance for fisheries management.</p>
<i>Minimise adverse effects of fishing on the aquatic environment, including on biological diversity.</i>		
A17. Improve information to monitor and manage impacts of shellfish fishing on benthic habitats.	Triggered (Carry-over)	<p>Many shellfish are taken by hand-gathering, diving or potting. These methods are considered to have few adverse effects on the benthos.</p> <p>Interactions with the benthos in shellfish fisheries have been estimated by examining dredging hours reported. Dredging is used to gather some shellfish species found on soft sediments but the nature and/or permanency of its impact is not well understood. Dredging hours have decreased in recent times (last 5 years) but translation of effort to footprint is not possible at this time.</p> <p>The specified Management Action is focused on providing a better understanding of the nature of dredging impacts to better inform management.</p>

4.3 Management Actions for Group 1 Shellfish Stocks

Management Actions	Type of Action(s)	Need for Action
Maximise/secure social, economic, and cultural benefits from each fishstock.		
A18. Develop and implement a national compliance strategy for rock lobster.	Opportunity (Carry-over)	<p>Illegal harvest of rock lobster and paua impacts on customary, recreational and commercial rights and interests, and undermines the fisheries management framework</p> <p>Compliance information indicates the ability to maximise overall value in the rock lobster and paua fisheries, across all sectors, is likely eroded by poaching and black market activities. A comprehensive assessment of all available field operations and fisheries management intervention services/tools will improve our ability to address illegal activities by implementing those tools that are most effective.</p>
A19. Develop and implement a national compliance strategy for paua.	Opportunity (Carry-over)	<p>The development of compliance strategy for rock lobster began in 2012. This work is likely to be completed in the 2012-13 financial year.</p> <p>For paua, work will begin this year to investigate available information for estimating illegal take in the paua fishery. An inability to account for illegal take at a minimum level can affect the reliability of the stock assessment processes and our ability to provide for maximum sustainable use of New Zealand's paua fisheries.</p>
A20. Review catch reporting requirements in charter boat regulations, to include CRA 1 and 2 rock lobster fisheries.	Triggered	<p>A major source of uncertainty in rock lobster stock assessment models is non-commercial harvest levels. Improved information on amateur harvest is required for future stock assessments, harvest strategy work and to consequently inform TAC and sector allowance setting.</p>
A21. Undertake programmed research to improve recreational harvest estimates in the CRA 1 rock lobster fishery.	Triggered	<p>Best available information suggests CRA 1 (Northland) and CRA 5 (Canterbury/Marlborough) stock abundance is above the established target biomass level, but it is unknown if CRA 2 (Bay of Plenty) is above the target.</p> <p>For CRA 1 there is insufficient information on amateur participation and associated harvest from amateur fishers. A future CRA 1 research programme is likely to provide an estimate of amateur harvest for the east coast portion of CRA 1 only.</p>
A22. Undertake programmed research to improve recreational harvest estimates in the CRA 2 rock lobster fishery.	Triggered	<p>For CRA 2 a research programme is currently underway on rock lobster amateur harvest in a portion of the fishery; Coromandel to Maketu. For CRA 5 a research programme is scheduled to start in 2012 on rock lobster amateur harvest in the Kaikoura/Motunau area of the fishery. Information from this research will provide partial</p>

Management Actions	Type of Action(s)	Need for Action
A23. Undertake programmed research to improve recreational harvest estimates in the CRA 5 rock lobster fishery.	Triggered	estimates of amateur harvest in CRA 2 and 5.
A24. Review of rock lobster Concession Area regulations – Phase 2.	Opportunity	<p>The Minister recently decided to retain all rock lobster concession area minimum legal size regulations. Phase 2 of the review offers an opportunity to look at what efficiencies and improvements can be made to the currently regulatory framework to improve the benefits that can be derived by industry.</p> <p>The Government and Ministry are committed to actively seeking opportunities to improve benefits and sustainable utilisation opportunities. The review of the regulatory framework will include (but is not limited to) those covering domestic sale, labelling, packaging and export requirements.</p>
A25. Provide support to CRAMAC 5 for an audit of the CRA 5 Friends of the Sea Certification, if required.	Opportunity	<p>The Ministry is committed to supporting initiatives of commercial stakeholders to maintain/improve market access.</p> <p>There is an increasing demand internationally for assurance that seafood has been harvested in a sustainable manner. Failure to respond to that demand may affect the benefits obtained currently and in the future from some of our stocks in the export market. If required, the Ministry will provide information to support an audit of the CRA 5 Friends of the Sea Certification.</p>
A26. For the Fiordland Marine Area (CRA 8) review the rock lobster amateur bag limit and accumulation limit, and consider a proposal to require identification of individual amateur catch within a holding pot.	Opportunity	<p>Under the Fiordland Marine Guardians integrated management approach, recreational fishers agreed to a series of measures for rock lobster that were more restrictive in the inner fiords than elsewhere in the CRA 8 (Southern) rock lobster fishery. The Guardians now recommend that the recreational daily bag and accumulation limits for rock lobster are increased within the inner waters due to an increase in CRA 8 abundance.</p> <p>The Guardians are also concerned that it is difficult for recreational fishers to comply with current regulations in relation to multiple recreational fishers using the same holding pot over a number of days. The Ministry is open to exploring ways for individual fishers to identify their catch to ensure compliance with the fishing rules.</p>
A27. Review the OYU 5 Fisheries Plan.	Triggered	In 2009 the Foveaux Strait Dredge Oyster (OYU 5) Fisheries Plan was approved under s11 of the Fisheries Act 1996. This Fisheries Plan acts as an operational manual for management of the fishery. The Ministry will undertake a full review of the plan in 2012-13.

Management Actions	Type of Action(s)	Need for Action
A28. Undertake a review of the minimum legal size for paua and opportunities and implications of paua concession fisheries. (<i>Multi-year action</i>)	Opportunity	<p>The minimum legal size (MLS) for paua for recreational and commercial fishers is 125mm (excluding a defined area around Taranaki where the recreational MLS is 80mm). There is a general school of thought that a paua MLS should be set at a size equivalent to “maturity plus 2 years” to ensure paua have an opportunity to reproduce prior to harvest.</p> <p>In general, paua found in colder water seem to grow much larger before they become mature. Anecdotal evidence suggests that a minimum harvest size or MLS larger than 125mm in parts of the South Island (e.g. Stewart Island) may be more appropriate. That is, paua may be being harvested before they become mature and have an opportunity to reproduce. Conversely, the current MLS may be too large in parts of the North Island where paua don't reach 125mm and are never harvested.</p> <p>Research is underway to better understand at what size paua become mature in various regions around the country. Investigation into how a variable MLS regime may operate in practice will begin this year.</p>
A29. Review access restrictions in the paua commercial fishery (joint review for PAU 2 and 5D).	Opportunity	<p>The Government and Ministry are committed to actively seeking opportunities to improve benefits and sustainable utilisation opportunities.</p> <p>The review of paua access restrictions may enable some areas currently closed to commercial fishing to be opened and provided for increased economic opportunity. Specific areas subject to a review would likely be contingent on industry engagement with tangata whenua and sufficient information to support such a review.</p>
A30. Review method restrictions in the PAU 4 fishery based on the outcomes of the gear trials special permit.	Opportunity	<p>The Government and Ministry are committed to ensuring that the methods available to harvest our fisheries resources do not unnecessarily risk the healthy and safety of those who participate in the activities.</p> <p>The purpose of the trials under this special permit in PAU 4 (Chatham Islands) is to subjectively evaluate the use of different types of gear when harvesting paua that could improve diver safety from shark attacks. The results of the work to date will be reviewed to evaluate any legislative or voluntary management framework requirements that may arise from the use of such apparatus.</p> <p>The outcomes of the trials will likely include a regulatory and management review for the use of underwater breathing apparatus for harvesting paua off the Chatham Islands only.</p>
Maintain stock size at or above B_{MSY} (or agreed proxy)		
A31. Undertake programmed research in CRA 3, 4, 5, 7 and 8 to estimate monthly and annual indices of puerulus settlement at key sites	Maintenance	<p>The Government and Ministry are committed to actively seeking opportunities to improve benefits and sustainable utilisation opportunities. The management actions outlined here support the use and stock sustainability objectives for rock lobster stocks.</p> <p>The research includes the collection of puerulus settlement data and biological data from commercial logbook</p>

Management Actions	Type of Action(s)	Need for Action
<p>within these fisheries.</p> <p>A32. Undertake programmed stock assessment research of rock lobster.</p>		<p>and catch sampling programmes, tagging projects to measure growth rates of rock lobster, estimating biomass and sustainable yields as well as the operation of current management procedures and the evaluation of new or revised procedures.</p>
<p>A33. Operate the approved CRA 3, 4, and 5 Management Procedures to guide TAC setting for 1 April 2013</p>	Maintenance	<p>CRA 3 (Gisborne) stock size was below the target biomass level in 2008. However, current information suggests the stock could now be above the target level. A reliable indicator of relative stock size (catch-per-unit-effort or CPUE) has increased since 2008, with a 59% increase in 2011.</p> <p>A rebuilding strategy has already been put in place for CRA 3 through the use of an approved CRA 3 Management Procedure. Application of the results of the procedure is likely to improve the current utilisation benefit of the fishery for all sectors through an increase in the stock size.</p> <p>CRA 4 (Wellington/Hawke's Bay) and CRA 5 (Canterbury/Marlborough) stock sizes are currently above their agreed target biomass levels. Ongoing application of the approved CRA 4 and 5 Management Procedures are required to maintain the stocks at or above the targets and consequently maintain or improve the current utilisation benefits of the fisheries for all sectors.</p>
<p>A34. Update the CRA 7 and 8 stock assessments.</p> <p>A35. Review and revise the CRA 7 and 8 Management Procedures to guide TAC setting from 1 April 2013.</p>	Maintenance	<p>CRA 7 (Otago) stock size is currently unknown but was above the target biomass level in 2006. CPUE (a stock size indicator) decreased by 56% in 2009, recovered slightly and declined by 31% in 2011. The CRA 7 fishery is experiencing a cyclical period of low abundance but is considered to be fluctuating around the target biomass level.</p> <p>CRA 8 (Southern) stock size was assessed as been above the target biomass level in 2006 and is likely to be still above this level. CPUE increased between 2006 and 2009, but decreased by 17% in 2010 and 3% in 2011.</p> <p>Both CRA 7 and 8 are currently managed using approved Management Procedures, which will be reviewed this year. Application of the results of the revised CRA 7 and 8 Management Procedures are required to maintain the stocks at or above the target levels and consequently maintain or improve the current utilisation benefit of the fishery for all sectors.</p>

Management Actions	Type of Action(s)	Need for Action
A36. Develop and propose the use of a CRA 9 Management Procedure to guide TAC setting from 1 April 2013.	Triggered	<p>Because no formal stock assessment has been done for CRA 9 (Westland/Taranaki) it is unknown where current stock size is in relation to the target biomass level. However, CPUE (a stock size indicator) declined from 2006 to 2008 but has since increased.</p> <p>Use of a CRA 9 Management Procedure will provide a responsive management regime for the CRA 9 fishery and will ensure the stock is moved to, or maintained at or above the established target biomass level (or agreed proxy). Doing so will maintain or improve the current utilisation benefit of the fishery for all sectors.</p>
A37. Undertake programmed research to update OYU 5 stock status.	Maintenance	<p>No target biomass has been established for Foveaux dredge oyster (OYU 5), but the development of a harvest strategy for this stock is currently underway. A stock assessment can provide accurate estimates of the biomass of the fishery, which will help establish and inform a reference level as part of a harvest strategy.</p> <p>As recruit-sized stock abundance and future benefits from the fishery (harvest levels) are mainly determined by <i>Bonamia</i> mortality, it is important to monitor the status of disease. In 2012-13 the annual <i>Bonamia</i> survey, commercial catch sampling and tagging programmes for OYU 5 will be undertaken. This work is required to assist in the reporting of the OYU 5 stock status with respect to B_{MSY} or accepted proxy.</p>
A38. Undertake programmed research to improve information that can be used as inputs to assess the stock status of PAU 2, 3 and 4.	Triggered	<p>The stock status of PAU 2 (Central), PAU 3 (Kaikoura Coast) and PAU 4 (Chatham Islands) in relation to B_{MSY} or accepted proxy is unknown. One of the limitations in the models used to produce estimates of paua stock size and spawning stock biomass is the lack of information on maturity at length/age and spatial variation of maturity data.</p>
A39. Undertake programmed research to support development of a robust stock monitoring approach for paua.	Triggered	<p>Paua are known to experience differences in growth rates, sizes of maturity at various spatial scales (100s metres to kilometres). This variance is important to discern as it can affect recruitment to both the population and fishery. In 2012/13 research on the length of paua in these areas when they become mature will begin.</p> <p>An improved monitoring approach is needed in each of these fisheries to better assess distribution of commercial effort, fishery abundance, and stock structure to inform future sustainability measures (e.g. stock assessment, TAC reviews, and other industry proposals).</p> <p>The paua stock monitoring framework needs to support development of stock-specific harvest strategies and a more responsive management approach. The analysis of commercial data loggers will provide a more comprehensive understand of the distribution and level of commercial effort that may be used in future stock assessments.</p>

Management Actions	Type of Action(s)	Need for Action
<p>A40. Undertake programmed research for PAU 5D to update stock status.</p> <p>A41. Establish a stock-specific harvest strategy for PAU 5D.</p>	Triggered	<p>No target biomass has been established for PAU 5D (Southland and Otago). However, standardised catch-per-unit-effort generally declined until the early 2000s followed by a steady increase until 2006, and then remained relatively stable to 2008.</p> <p>The undertaking of a stock assessment for PAU 5D will support the development of a harvest strategy and a more responsive management approach going forward.</p>
<i>Minimise adverse effects of fishing on the aquatic environment, including on biological diversity.</i>		
<p>A42. Prohibit recreational potting in the Seymour Island vicinity (located in the Fiordland Marine Area, CRA 8) to protect significant biodiversity.</p>	Opportunity	<p>The Fiordland Marine Guardians wish to introduce protection measures for the inner fiord sill communities (e.g. corals, sea pens and gorgonians) that have been discovered in the vicinity of Seymour Island at the junction of Doubtful and Thompson Sounds. These communities are potentially threatened by cruise ship anchors and amateur rock lobster potting (no commercial potting occurs in the inner fiords).</p> <p>The Ministry supports the protection of this fragile benthic community.</p>

4.4 Management Actions for Group 2 Shellfish Stocks

Management Actions	Type of Action(s)	Need for Action
Maximise social, economic and cultural benefits obtained from each stock by enabling annual yield to be maximised.		
A43. Undertake in-season TAC review for SCA CS in 2012.	Maintenance	Best available information on the performance of the fishery is used to determine whether there is sufficient information to support in-season reviews for SCA CS (Coromandel scallops). At this time in-season research data on abundance supports an in-season review of the TAC/TACC for SCA CS in the current 1 April 2012/13 fishing year. Research outputs in 2013, if the work is undertaken, will be used to determine whether there is sufficient information to support an in-season review for SCA CS in the April 2013 fishing year. In addition to in-season reviews the fishery is currently managed with a low 'baseline' TAC. In SCA CS in-season current annual yield estimates are consistently above the harvest levels and TACC. In response, industry has requested a review of the baseline TAC to one that is more in line with current annual yield estimates. Industry has also implemented a 'CPUE-limit' approach to support sustainable use of the fishery. This approach would support the fishery to operate on a 'rotational' basis. A formal shift to enable the SCA CS to be rotationally managed would require SCA CS to be added to Third Schedule which is a legislative process approved by cabinet. The Ministry will consult on whether this listing is appropriate for SCA CS.
A44. Undertake research to inform in-season TAC review for SCA CS in 2013, if required.	Maintenance	
A45. Undertake TAC ('baseline TAC) review of SCA CS for 1 April 2013.	Opportunity	
A46. Review the possible listing of SCA CS under the 3 rd Schedule (s14) of the Fisheries Act 1996.	Opportunity	
Maintain stock size at or above an established minimum reference level.		
A47. Support delivery of an industry-led biomass survey in SCA 1 if undertaken in 2012 or 2013 to ensure it supports harvest strategy development.	Opportunity	The stock status of SCA 1 (Northland) is uncertain and there is no set minimum reference level. There are potential stock sustainability concerns in SCA 1. Commercial fishers ceased to fish in SCA 1 and specific research or information is required to better determine stock status and whether measures are required to rebuild the stock. Improved monitoring frameworks are required to supports development of stock-specific harvest strategies and provide the basis for a more responsive management approach. Work is underway to establish a harvest strategy for SCA 1. If industry undertakes a biomass survey in 2012/13, the Ministry will ensure the information gathered will support and inform harvest strategy development.
A48. Undertake a TAC review for SCA 1 in 2013 if supported by information from an industry-led biomass survey.		

4.5 Management Actions for Group 3 Shellfish Stocks

Management Actions	Type of Action(s)	Need for Action
Secure social, cultural and economic benefits from each stock.		
A49. Review stock monitoring for cost-effectiveness and explore alternative management strategy approaches for COC 3.	Triggered	COC 3 (Otago) has insufficient information to assess trends in real quota value, and the cost-recovery levy is considered to be high. Value of the fishery is considered depressed due to water quality affecting consistent market supply. Opportunities to develop cost-effective monitoring tools and support industry-driven value-adding initiatives for COC 3 have been identified.
A50. Review Otago Harbour cockle special permit research to provide ministerial advice on options for harvest.	Opportunity	<p>This fishery is currently subject to a special permit allowing harvesting. Review of the special permit research will determine whether regulation change should be initiated to allow commercial harvesting in specified parts of Otago Harbour.</p> <p>The outcomes of the special permit research will also inform stakeholders concerns about the fishery with respect to cockle harvesting methods and its impacts on the benthic and aquatic environment in COC 3.</p>
Maintain stock size at or above target reference level.		
A51. Establish a stock-specific harvest strategy for COC 1A.	Triggered	<p>No target reference level has been established for the stock size or biomass of COC 1A (Whangarei Harbour). However, current annual yield estimates suggest the stock size is at or above a sustainable level. Commercial catch trends likely to be due to market/water quality issues.</p> <p>The Ministry considers there is sufficient information available for this fishery to establish a harvest strategy, which will provide clarity as to how we will manage this stock, and when and how we are likely to propose management interventions.</p>
A52. Undertake programmed research for cockle (COC 1B and 1C), and pipi (PPI 1B and 1C) as part of the Auckland intertidal shellfish survey series.	Maintenance	<p>Monitoring of local abundance and population size of COC 1B and 1C and PPI 1B and 1C (East Northland and Hauraki Gulf) has occurred regularly since 1992. The continuation of this program is important in order to enable and inform a responsive management framework.</p> <p>Continuation of the survey will ensure that up to date information can inform management of the fishery and ensure that the benefits from the fishery are secure. The survey assists by identifying trends in the fishery, and enables management to respond if required.</p> <p>This stock is of high importance to the recreational and customary sectors, with negligible commercial interest.</p>

Management Actions	Type of Action(s)	Need for Action
		The unique characteristics of this fishery include the proximity to densely populated urban areas, and require a monitoring presence because of the speed at which localised depletion may occur.
A53. Create an inventory of research undertaken that relates to the oyster herpes virus affecting OYS 1 and 9.	Opportunity	<p>Te Hiku o Te Ika Fisheries Forum requested the creation of a research inventory for oysters in the North (OYS 1 and 9). The forum noted that 60% of the country's oyster spat comes from the north and that it would be beneficial to learn more about existing research and oyster management in general to better inform future management direction.</p> <p>In particular, the forum requested information on what research has been undertaken with respect to the herpes virus as a first step in terms of working out a strategy to manage the virus.</p>
A54. Review regulations in the Maketu Taiapure (Bay of Plenty) with regards to green-lipped mussel minimum legal size, daily bag limits, and closed seasons.	Triggered	<p>Under s185 of the Fisheries Act 1996, a management committee appointed for a taiapure-local fishery may recommend to the Minister the making of regulation for the conservation and management of the fish or aquatic life in the Taiapure-local fishery.</p> <p>The management committee for the Maketu Taiapure is concerned about mussel and shellfish resources within the taiapure, and consider the area is suffering from localised depletion caused by harvesting pressures. They have requested a review of proposed regulations they believe will improve the sustainability of the resource. The proposed regulatory measures include imposing a minimum legal size for mussels, a reduced daily bag limit and temporary closures of the taiapure.</p> <p>The regulatory review will provide an opportunity to consider whether measures are needed to increase or secure benefits for users, as well as conform to the governance element of the Fisheries 2030 strategy.</p>
A55. Review the closure on shellfish harvesting in Whangateau (north of Auckland).	Opportunity	<p>In 2010, a three-year closure of Whangateau Harbour to the harvest of cockles and pipi was implemented. The closure followed a rapid decline in the cockle population caused by a naturally occurring parasite and a bacterial infection. The harvest closure also covered pipi because there was concern that when the cockle beds were closed, fishers would target pipi and that this increased pressure may affect the sustainability of the pipi beds.</p> <p>The lifting of the closure is approaching, which would result in the area returning to normal Auckland harvesting rules. A review of the closure will take into account the current rebuild of the stock (unclear) and potential exposure to overharvesting, and sustainability concerns to inform whether the closure should be renewed for sustainability reasons, or lifted for utilisation benefits.</p>

4.6 Management Actions for Group 4 Shellfish Stocks

Management Actions	Type of Action(s)	Need for Action
Secure social, cultural and economic benefits from each stock.		
A56. Assess the effectiveness of the regulations implemented to monitor and manage the bladder kelp fishery.	Opportunity	Attached bladder kelp (KBB 3G and 4G) entered the QMS in October 2010 and has been available for commercial harvest for almost 2 years. A number of regulations were implemented to ensure that catch is at a level that is sustainable while allowing for development of the fishery. It would be timely to review the spatial distribution of the catch and method restrictions to assess their effectiveness and to additional identify any requirements to promote sustainable use.
A57. Support and provide guidance on removing barriers to commercial utilisation of the OYS 4 fishery.	Opportunity	Information received from the Chatham Islands Iwi Fisheries Forum suggested the OYS 4 fishery is underutilised and a number of barriers are preventing its development. The forum requested support to develop research programs that determine the cadmium and other heavy metal concentrations in the stock. The Ministry and Government are committed to actively seeking opportunities to improve proving-up underutilised fisheries and will assist the forum in identifying the best avenues for developing this fishery.
A58. Support industry initiatives to obtain certification of the surf clam fishery.	Opportunity	The Ministry is committed to supporting initiatives of commercial stakeholders to maintain/improve market access. There is an increasing demand internationally for assurance that seafood has been harvested in a sustainable manner. Failure to respond to that demand may affect the benefits obtained currently and in the future from some of our stocks in the export market.
A59. Support delivery of an industry-led biomass survey or other research to prove up the OYS 7C fishery if undertaken. A60. If supported by biomass survey results or other information,	Opportunity	The Government and Ministry are committed to actively seeking opportunities to improve benefits and sustainable utilisation opportunities. The commercial sector recently obtained an increase in the TACC for the OYS 7C (Clarence Point to West Head, Tory Channel) oyster fishery (from 43 to 63 tonnes). Industry has suggested the fishery could support a greater TAC based on current biomass availability. In order to undertake a sustainability review, a biomass survey or other research tool needs to be undertaken to substantiate the potential harvest level that the fishery could support.

Management Actions	Type of Action(s)	Need for Action
undertake a review of the TAC for OYS 7C.		
A61. Review the regulatory framework around processing kina (SUR) at sea.	Triggered	<p>The Government and Ministry are committed to actively seeking opportunities to improve benefits and sustainable utilisation opportunities.</p> <p>Commercial stakeholders consider the costs associated with transporting large volumes of kina from remote areas such as Fiordland to shore-based processing facilities are reducing the potential value that can be derived from the fishery. A review will consider best practice and framework to protect the sustainability of the stocks while increasing the economic return in the fishery.</p>
Maintain stock size at or above target reference level.		
A62. Undertake a biomass survey of COC 7A, or fishery dependent monitoring (depending on results of COC 3 study), to support a review of the TAC.	Opportunity	<p>The COC 7A (Nelson Bays cockle fishery) fishery is primarily a commercial fishery with the TAC, and TACC, remaining unchanged since its introduction to the QMS in 2002. Since the introduction, commercial catch has been well below the TACC every year.</p> <p>The reasons for the under-catch are not clear and may be some combination of market access and stock size. The results of a biomass survey will provide the necessary information to support a sustainability review of the fishery.</p>
A63. Support industry development of biomass survey methodologies for surf clams.	Opportunity	<p>There is currently limited fishing activity involving surf clams in most fishery management areas, and insufficient information available to provide any immediate development opportunities. The Government and Ministry are committed to actively seeking opportunities to improve benefits and sustainable utilisation opportunities.</p> <p>There is work underway by industry to examine and improve biomass survey design. Supporting industry in this work is considered a positive means of contributing to the development of this fishery. This may be best achieved in the first instance by supporting the development and review of biomass survey methodologies and the review of the outputs of such surveys to support future TAC reviews.</p>
A64. Review the potential use, effectiveness and costs associated with fine-scale catch-effort reporting tools in the kina (SUR) fishery.	Triggered	<p>In 2011 a characterisation of New Zealand's kina fisheries was produced. One of the conclusions of this report was that the commercial kina fishery should be monitored at a smaller spatial scale than currently occurs. A finer-spatial scale or reporting would allow more reliable monitoring of changes in commercial catch-per-unit-effort (CPUE) than is possible with data currently collected at the statistical area level.</p> <p>The means of improving fine-scale reporting could take a number of forms. One suggestion has been to require reporting forms that match the format of the Paua Catch Effort Landing Return (PCELR), which would allow catch and effort to be recorded at the individual diver level. This is important for interpreting any patterns in CPUE.</p> <p>Fine-scale catch effort reporting would improve fishery-dependent monitoring, and enhance the Ministry's ability</p>

Management Actions	Type of Action(s)	Need for Action
		to manage these fisheries. A review would consider various means of improving the reporting scale in terms of improved information, associated costs, and any other implications.

4.7 Management Actions for Group 5 Shellfish Stocks

Management Actions	Type of Action(s)	Need for Action
<i>Secure social, cultural and economic benefits from each stock.</i>		
<i>Maintain stock size at or above target reference level.</i>		
A65. Review the QMS Introduction Standard for shellfish fisheries.	Triggered	<p>The current QMS Introduction Standard uses catch thresholds that are larger than the levels of non-QMS shellfish harvest observed but may require consideration for introduction to the QMS.</p> <p>There is uncertainty over whether stock monitoring in the current non-QMS Introduction Standard is appropriate for shellfish fisheries. The focus of the review is to ensure the current framework enables sustainable development opportunities for non-QMS shellfish fisheries to be realised.</p>

5.0 Appendix 1: Stock Groupings

QMS stocks	Group 1	
	Spiny rock lobster (CRA 1, 2, 3, 4, 5, 6, 7, 8, 9)	Dredge oyster (OYU 5)
	Paua (PAU 1, 2, 3, 4, 5A, 5B, 5D, 7)	
	Group 2	
	Green-lipped mussel (GLM 7A, 9)	Scallops (SCA 1, 7, CS)
	Group 3	
	Cockles (COC 1A, 1B, 1C, 3)	Kina (SUR 1A, 1B)
	Deepwater tuatua (PDO 3)	Pipi (PPI 1A, 1B, 1C)
	Dredge oyster (OYS 1)	Tuatua (TUA 1A, 1B)
	Green-lipped mussel (GLM 1)	
	Group 4	
	Attached bladder kelp (KBB 3G, 4G)	Paddle crab (PAD 1, 2, 3, 4, 5, 6, 7, 8, 9)
	Cockles (COC 2, COC 3B, COC4, 5, 7A, 7B, 7C, 8, 9)	Paua (PAU 6)
	Deepwater clam (geoduck) (PZL 1, 2, 3, 4, 5, 7, 8, 9)	Pipi (PPI 2, 3, 4, 5, 7, 8, 9)
	Deepwater tuatua (PDO 1, 2, 4, 5, 7, 8, 9)	Queen scallop (QSC 3)
	Dredge oysters (OYS 2A, 3, 4, 5A, 7, 7A, 7B, 7C, 8A, 9)	Ringed Dosinia clam (DAN 1, 2, 3, 4, 5, 7, 8, 9)
	Friiled venus shell clam (BYA 1, 2, 3, 4, 5, 7, 8, 9)	Scallops (SCA 1A, 2A, 3, 4, 5, 7A, 7B, 7C, 8A, 9A)
	Green-lipped mussel (GLM 2, 3, 7B, 8)	Sea cucumber (SCC 1A, 1B, 2A, 2B, 3, 4, 5A, 5B, 6, 7A, 7B, 7D, 8, 9)
	Horse mussel (HOR 1, 2, 3, 4, 5, 6, 7, 8, 9)	Silky Dosinia clam (DSU 1, 2, 3, 4, 5, 7, 8, 9)
	Kina (SUR 2A, 2B, 3, 4, 5, 7A, 7B, 8, 9)	Trough shell clam (MDI 1, 2, 3, 4, 5, 7, 8, 9)
	Knobbed whelk (KWH 1, 2, 3, 4, 5, 6, 7A, 7B, 8, 9)	Triangle shell clam (SAE 1, 2, 3, 4, 5, 7, 8, 9)
	Large trough shell clam (MMI 1, 2, 3, 4, 5, 7, 8, 9)	Tuatua (TUA 2, 3, 4, 5, 7, 8, 9)
	Packhorse lobster (PHC 1)	
	Group 5	
Non-QMS stocks	All other inshore shellfish (for example, octopus and toheroa) and seaweed species.	