



Ministry of

Fisheries

Te Tautiaki i nga tini a Tangaroa

Draft National Fisheries Plan for Inshore Shellfish

July 2011



New Zealand Government

Foreword

New Zealand's inshore shellfish fisheries are of great value to us all. They contribute to our cultural and social traditions, to our nation's economy, and to our sense of overall well-being. We need to work to ensure these valuable resources are managed in a way that ensures they can continue to be enjoyed and provide benefits to New Zealanders for many generations to come.

To this end, the Ministry of Fisheries has developed this draft National Fisheries Plan for Inshore Shellfish (the Plan). The Plan provides for transparent and accountable management of inshore shellfish fisheries by setting out our objectives for the fisheries, describing how we will monitor and measure performance against these objectives and indicating the management approach we will take to ensure they are met.

The Plan has not been finalised. It will be trialled for one to two years and feedback and input will be collected to improve and finalise the plan. This approach provides opportunities for the large number of widespread tangata whenua and stakeholder representative groups to test and contribute to, not just the Plan itself, but also its implementation processes.

I am confident the National Fisheries Plan for Inshore Shellfish will bring more certainty for everybody involved in shellfish fisheries and will make management more transparent, more accountable and more accessible.

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Ministry of Agriculture and Forestry/Ministry of Fisheries

1 July 2011

DRAFT

Ko Te Waiora

Ko te waiora	The tears of Ranginui
Na te Atua	Fall
Te waimaori	And fill the waterways
E rere ana	From the mountains
Mai te maunga ki te moana	To the sea
Na ko Marama	Marama
Pari mai te tai	Regulates
Whakamana nga	The flow of the tides
Uri o Tangaroa	Sustaining
Kei te ora tonu e	The children of Tangaroa
Ko te waitai	The breath of
I piki ai ki runga rawa e	Papatuanuku
Ka whano mai	Rises
Ka whangaia	Returning
Te whenua	To feed
	The land
Te Tautiaki	Te Tautiaki
I nga tini a Tangaroa	I nga tini a Tangaroa
Hei awhina	Will support
Hei whangaia	And replenish
Te moana	The sea
Hei awhina	Will support
Hei whangaia	And replenish
Te moana	The sea
Mo nga iwi	Together with the people
O te motu - HI! AUE HI!	Of this land – INDEED!

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Glossary of Terms

Annual Catch Entitlement (ACE)	Allocation of the TACC for a given fishing year. Initially distributed proportionally amongst quota owners, ACE can also be traded and transferred.
Associated or dependent species	Any non-harvested species taken or otherwise affected by the taking of any harvested species.
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.
Benthic	Relating to the seafloor.
Benthic impact	The interactions between fishing gear and the seafloor.
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 average catch of maximum sustainable yield under various types of harvest strategies.
Current Annual Yield (CAY)	A calculation made for a single fishing year that applies a fixed reference level of fish mortality to an estimate of the current fishable biomass . This may be used to inform the setting of a TAC within the current fishing year for stocks whose abundance is highly variable.
Ensuring 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 .
Fisheries Management Area (FMA)	New Zealand's fisheries waters (the 200 nautical mile Exclusive Economic Zone, Territorial and Internal waters) are divided into ten Fishery Management Areas. These FMAs also inform the boundaries of most Quota Management Areas (QMAs) .
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.
Habitat	Includes all aspects of the aquatic environment that 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.
Input controls	Controls on fishing effort, for example on how, when and where people can take fisheries resources.
Kaitiakitanga	The exercise of guardianship, and, in relation to any fisheries resources , includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori.
Long-term viability	In relation to the biomass level of a stock or species, means there is a low risk of collapse of the stock or species and the stock or species has the potential to recover to a higher biomass level.
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)	Management services provided for the purposes of fisheries management, including changes to catch limits and rules, education, enforcement, monitoring and research.
Maximum Constant Yield (MCY)	The greatest yield that can be produced over the long term by taking the same catch year-after-year, with little risk of stock collapse.
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.
Output controls	Direct controls on the quantity of fish harvested.

Protected species	As defined in the Wildlife Act 1953 and the Marine Mammals Protection Act 1978, including all NZ seabirds, all marine mammals, some marine reptiles, black coral, some red corals, giant and black-spotted grouper, deepwater nurse, whale and white-pointer sharks, manta rays and spinetail devil rays.
Quota	Individual transferable quota is a property right used to proportionally allocate the TACC . Each QMS stock has 100,000,000 tradable quota shares that determine the allocation of ACE amongst quota owners.
Quota Management Area (QMA)	The spatial boundaries for each QMS stock . These boundaries are aligned with FMAs , either directly or as a part or combination of FMA boundaries.
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, amateur interests and fishing-related mortality and set a TACC .
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 Measures	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.

Summary of the National Fisheries Plan for Inshore Shellfish

Fisheries 2030 Goal

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

Fisheries 2030 Outcomes

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 Approach

The National Fisheries Plan for Inshore Shellfish (the Plan) uses objective-based management to drive the delivery of Ministry of Fisheries' (the Ministry) services for inshore shellfish fisheries and help meet the Government's goal and outcomes for the fisheries sector.

Due to the large number of stocks in the Plan, inshore shellfish stocks have been grouped into five 'Groups' to facilitate multi-stock objective-setting to translate the *Fisheries 2030* goal and outcomes.

The following tables describe the management approach used for each Group in the areas of USE and ENVIRONMENT (Stock Sustainability). These two areas are closely entwined; without sustainable stock management, long-term use benefits will not be maintained. The management approach for ENVIRONMENT (Effects of Fishing and some aspects of Stock Sustainability) is generic across all Groups and listed at the end of this section.

Group 1			
USE	ENVIRONMENT (Stock sustainability)	Stocks:	Management approach:
		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)	Stocks in this Group are valuable to the inshore commercial sector, are taonga to many iwi and prized by amateur fishers. They tend, therefore, to be already fully utilised. Given the high desirability and the relatively high biological vulnerability of these stocks, the management approach for this Group is to monitor and manage these stocks closely to ensure that full utilisation can continue in a sustainable way. Opportunities to enable even greater benefits to be derived from stocks in this Group will continue to be explored, including removing any unnecessary barriers to access and economic profitability, and supporting value-add initiatives by stakeholders and tangata whenua.

Group 2			
USE	ENVIRONMENT (Stock Sustainability)	Stocks: Green-lipped mussel (GLM 7A, 9), Scallops (SCA 1, 7, CS)	Management approach: Stocks in this Group are valuable to the inshore commercial sector, and important to some customary and recreational fishers. Biologically, these stocks are fast-growing and have a highly variable abundance. The management approach for this Group enables responsiveness to changing abundance levels and ensures ongoing sustainability and increased benefits when abundance is high.

Group 3			
USE	ENVIRONMENT (Stock Sustainability)	Stocks: Cockles (COC 1A, 1B, 1C, 3), Deepwater tuatua (PDO 3), Dredge oyster (OYS 1), Green-lipped mussel (GLM 1), Kina (SUR 1A, 1B), Pipi (PPI 1A, 1B, 1C), Tuatua (TUA 1A, 1B)	Management approach: Stocks in this Group are important to customary and recreational fishers, with discrete areas also supporting commercial fisheries. Stocks are generally robust to fishing pressures, though localised pressures can require active management. The management approach for this Group supports ongoing benefits being derived from shellfish stocks by monitoring catch and effort and ensuring compliance with catch limits to avoid localised depletion.

Group 4			
USE	ENVIRONMENT (Stock Sustainability)	Stocks: Attached bladder kelp (KBB 3G, 4G), Cockles (COC 2, 3B, 4, 5, 7A, 7B, 7C, 8, 9), Deepwater (King) clam (geoduck) (PZL 1, 2, 3, 4, 5, 7, 8, 9), Deepwater tuatua (PDO 1, 2, 4, 5, 7, 8, 9), Dredge oysters (OYS 2A, 3, 4, 5A, 6, 7, 7A, 7B, 7C, 8A, 9), Frilled venus shell clam (BYA 1, 2, 3, 4, 5, 7, 8, 9), Green-lipped mussel (GLM 2, 3, 7B, 8), Horse mussel (HOR 1, 2, 3, 4, 5, 6, 7, 8, 9), Kina (SUR 2A, 2B, 3, 4, 5, 7A, 7B, 8, 9), Knobbled whelk (KWH 1, 2, 3, 4, 5, 6, 7A, 7B, 8, 9), Large trough shell clam (MMI 1, 2, 3, 4, 5, 7, 8, 9), Packhorse lobster (PHC 1), Paua (PAU 6), Paddle crab (PAD 1, 2, 3, 4, 5, 6, 7, 8, 9), Pipi (PPI 2, 3, 4, 5, 7, 8, 9), Queen scallop (QSC 3), Ringed Dosinia clam (DAN 1, 2, 3, 4, 5, 7, 8, 9), Scallops (SCA 1A, 2A, 3, 4, 5, 7A, 7B, 7C, 8A, 9A), Sea cucumber (SCC 1A, 1B, 2A, 2B, 3, 4, 5A, 5B, 6, 7A, 7B, 7D, 8, 9), Silky Dosinia clam (DSU 1, 2, 3, 4, 5, 7, 8, 9), Triangle shell clam (SAE 1, 2, 3, 4, 5, 7, 8, 9), Trough shell clam (MDI 1, 2, 3, 4, 5, 7, 8, 9), Tuatua (TUA 2, 3, 4, 5, 7, 8, 9)	Management approach: Stocks in this Group are sought after by some sectors, but fishing pressure is relatively low. Biological vulnerability of stocks in this Group is variable. The management approach for these stocks provides for development opportunities while minimising management costs and monitoring catch to ensure sustainability of the stocks.

Group 5			
USE	ENVIRONMENT (Stock Sustainability)	Stocks: All other inshore shellfish (for example, octopus and toheroa) and seaweed species.	Management approach: Stocks in this Group are managed outside the QMS as desirability and utilisation is low. The management approach for this Group is to monitor stocks and, where necessary, assess stocks against the QMS Introduction Process Standard. No action will be taken unless the non-QMS framework is not providing for utilisation or sustainability.

All Groups	
ENVIRONMENT (Effects of Fishing) (Stock Sustainability)	The management approach in the environmental area is the same for all Groups and involves minimising adverse effects of fishing on the aquatic environment by improving information, adopting voluntary or regulatory management measures, and incentivising compliance with those measures. It also involves identifying and managing habitats of particular significance for fisheries management. Because some impacts on fisheries habitats occur as a result of activities other than fishing, influencing others to better manage their impacts on habitats of particular significance for fisheries management is also part of the management approach.

Fisheries 2030 Governance Conditions

Governance Conditions: Sound governance arrangements that are well specified, transparent and which support cost-effective and accountable decision-making.

Meeting the Governance Conditions

The Plan does not explicitly set management objectives for governance conditions. Rather, the Plan and the supporting processes have been designed to achieve these conditions.

The governance tactics set out in the Plan seek to:

GOVERNANCE	<ul style="list-style-type: none"> > deliver on the Treaty partnership by providing avenues for input into how inshore shellfish fisheries will be managed. > provide clear information on how we plan to manage inshore shellfish fisheries, how they are performing and how we will prioritise and invest in these fisheries to improve their performance to meet objectives. > provide opportunities for tangata whenua and stakeholders to input into and link their planning processes to Ministry processes, and > demonstrate accountability through performance monitoring and focusing management activity towards rectifying gaps in performance where they arise and in a timely manner.
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1. Introduction

The National Fisheries Plan for Inshore Shellfish (the Plan) specifies objectives to guide management of New Zealand’s inshore shellfish fisheries. Management in this context includes managing inshore shellfish stocks and managing the environmental effects of fishing for these stocks.

When combined with its supporting processes, the Plan provides a transparent way of identifying and delivering management services to inshore shellfish fisheries, where “management services” are the activities undertaken to achieve objectives.

The Plan is the first plan developed for all inshore shellfish fisheries. This version of the Plan is a “baseline” and “draft” plan, in that it mostly represents current management of inshore shellfish fisheries. It will be tested, updated and improved over its first one to two years of operation using input from tangata whenua and stakeholders.

The Plan is one of five plans covering all of New Zealand’s wild fisheries (refer diagram in Appendix 2). The other plans are the National Fisheries Plans for Freshwater, Inshore Finfish, Highly Migratory Species, and National Deepwater and Middle-depths.¹ A separate strategy and plan setting objectives for farmed fisheries (aquaculture) are under development.

1.1 Scope

The Plan covers all inshore shellfish species managed within New Zealand’s Quota Management System (QMS) and those outside this system that are managed under the Fisheries Act 1996 (the Fisheries Act).

‘Inshore shellfish species’ means all molluscs, crustaceans, echinoderms (starfish and sea urchins), sponges and seaweeds found within the inshore area of New Zealand’s fisheries waters. Although not formally defined, the inshore area is taken to mean the area within a landward boundary of mean high water springs² and a seaward boundary of either the 12 nautical mile outer limit of the territorial seas or the 200m water depth contour.³

1.2 Approach

The Plan uses objective-based management to drive delivery of Ministry services for inshore shellfish fisheries so that the Plan’s objectives and the Government’s goals can be met (refer Figure 1).

The approach used to develop the Plan ensures its objectives:

- > link to, and directly assist achievement of, the Government’s goal and outcomes for the fisheries sector, which are set out in *Fisheries 2030*⁴

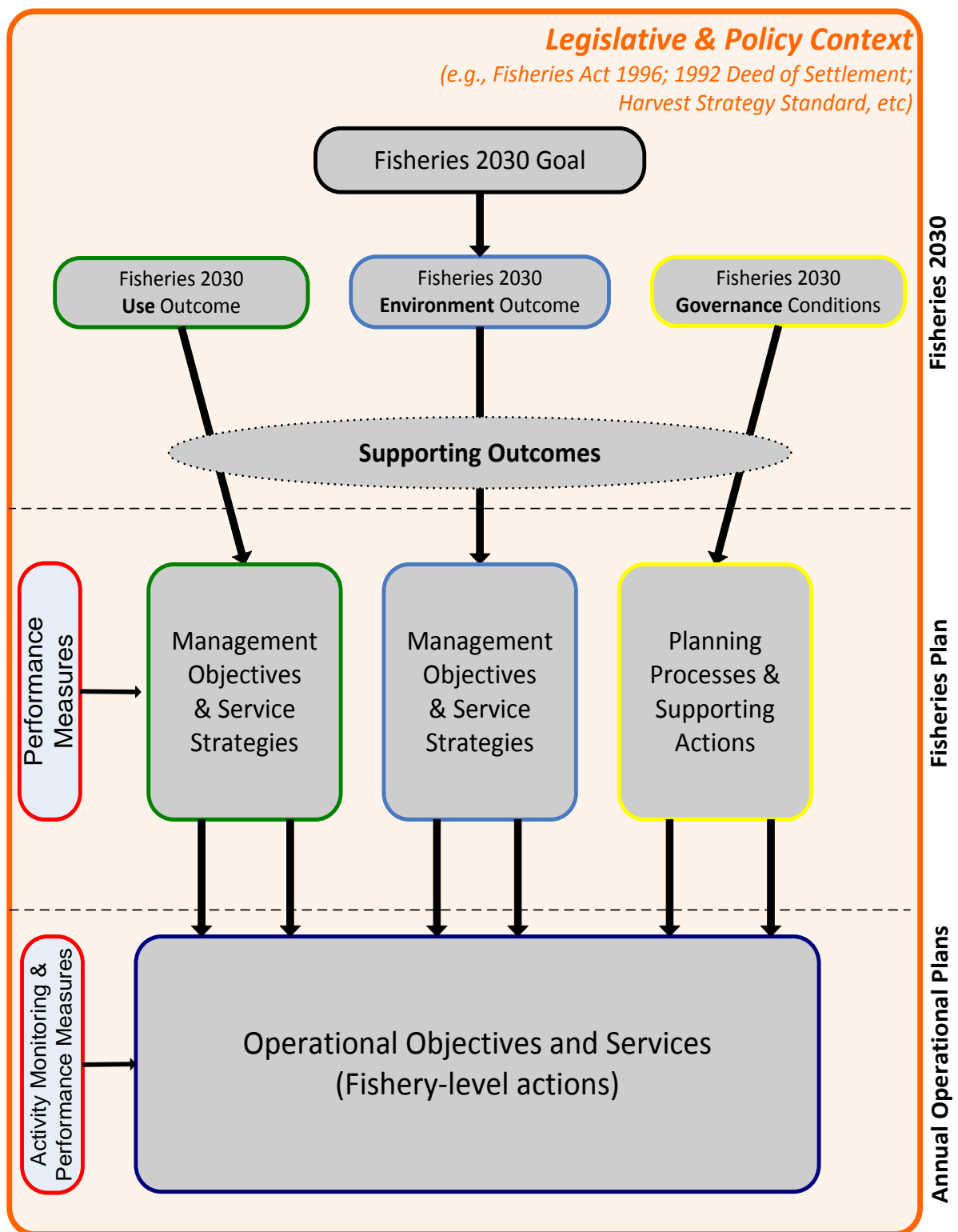
¹ Other national fisheries plans can be found on the Ministry of Fisheries website: www.fish.govt.nz.

² Mean High Water Spring (MHWS) is the average of the levels of each pair of successive high waters during that period of about 24 hours in each semi lunation (approximately every 14 days) when the range of tides is greatest.

³ Shellfish species that are primarily found in the deeper waters of New Zealand’s for example, squids, scampi and deepwater king and red crabs - are addressed in the National Fisheries Plan for Deepwater and Middle-depths Fisheries.

⁴ *Fisheries 2030* can be found on the Ministry of Fisheries website: www.fish.govt.nz.

Figure 1. National Fisheries Plan – Approach



- > support the Minister of Fisheries and Aquaculture (the Minister) to meet all relevant statutory obligations
- > enable performance to be comprehensively monitored and reported, and
- > provide for integrated management by engaging tangata whenua and stakeholders in the Ministry's planning processes and by creating opportunities to link to the planning processes operated by tangata whenua, stakeholders and other agencies.

The Plan supports identification of service needs, and design and delivery of Ministry (and potentially other sector) services, which are captured in operational plans. To ensure the Plan's objectives are met, an annual planning cycle⁵ provides for adaptation. Performance against objectives is checked and reported each year via an Annual Review Report, and adjustments to management services needed to address poor performance are captured and delivered via an Annual Operational Plan. Figure 2 illustrates the overall process with the outer circle representing the National Fisheries Plan development process, and the inner circle representing the annual planning cycle.

Figure 2: Fisheries Plan – Adaptive Approach



The Plan does not set stock-specific objectives for each shellfish stock. Rather, it establishes objectives for *groups of* shellfish stocks. Grouping stocks supports efficient administration of the large number of stocks covered by the Plan. Grouping stocks also supports cost-effective management by ensuring the objectives set, and the services delivered, are at a level that appropriately reflect the characteristics of the stock and its related fisheries.

⁵ The annual planning cycle is described in more detail in Chapter 4.

Some, but not all, of the objectives in the Plan do require performance measures to be set for individual stocks, however. Where established, these stock-specific performance measures are captured in Annual Review Reports. Where there are no stock-specific performance measures, services to establish these are captured in Annual Operational Plans as resources allow.

Some individual inshore shellfish species, stocks or fisheries may warrant development of targeted fisheries plans. Species-, stock-, or fishery-specific fisheries plans, when developed, will be included in the Plan as chapters.

A fisheries plan for the Foveaux Strait dredge oyster fishery has been approved under section 11A of the Fisheries Act 1996. The plan was developed as part of an earlier approach to fisheries planning and expires in 2013. Specific planning arrangements also exist for the rock lobster (spiny red and packhorse) and Challenger scallop (SCA 7) fisheries. These existing plans and arrangements were developed using a different approach and are not included as chapters to the Plan, but will stay in place as long as they remain current. Relevant service needs generated by the pre-existing plans and arrangements will be captured and incorporated into annual planning and service delivery processes.

1.3 Legal Status

Section 11A of the Fisheries Act provides for formal approval of fisheries plans such as the National Fisheries Plan for Inshore Shellfish. Where fisheries plans have been approved under s11A, the Minister must take the plans into account when making sustainability decisions.

The approval of fisheries plans under s11A does not diminish any legal requirements. If there are, or appear to be, conflicts between an approved plan and obligations set out in legislation, the statutory obligations unequivocally take priority. For example, nothing contained in a fisheries plan changes the Crown's obligations to Māori or the Fisheries Act requirement to consult with interested parties when making sustainability decisions.

This version of the Plan has not been approved under s11A of the Fisheries Act. Approval will be sought in the future after the Plan is further advanced with tangata whenua and stakeholder input.

1.4 Structure

The Plan is set out in the following sections:

- Chapter 2: **Context – Situating the Plan**
Describes the strategic, legislative and policy context within which the Plan operates.
- Chapter 3: **Management Objectives & Governance Tactics**
Sets out the management objectives for the stocks covered in the Plan. Performance measures, key default service strategies and governance tactics are also specified.

Chapter 4: **Implementing the Plan**

Describes the planning and service delivery processes the Plan drives, and sets out how the Ministry of Fisheries will engage with tangata whenua and stakeholders.

Appendix 1: **Profile of New Zealand's Inshore Shellfish and Seaweed Fisheries.**

Appendix 2: **Fisheries Planning for Wild New Zealand Fisheries.**

2. Context – Situating the Plan

In developing the Plan, the Ministry has been cognisant of the Government’s goal and outcomes for the fisheries sector, statutory obligations, and the desirability of working collaboratively with others in the fisheries and natural resource management sectors to secure a healthy aquatic environment and inshore shellfish fisheries that benefit all New Zealanders.

2.1 Government’s Goal and Outcomes

The Government’s goal and outcomes for the fisheries sector are set out in *Fisheries 2030*. By specifying a goal for the sector, *Fisheries 2030* provides increased certainty to interested parties about the Government’s strategic focus as it relates to fisheries resources.

Fisheries 2030 sets a long-term goal of:

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

This goal encapsulates the ideal or aspirational state for New Zealand’s fisheries. Two high-level outcomes, with an associated set of supporting outcomes, describe the goal in more detail. They are:

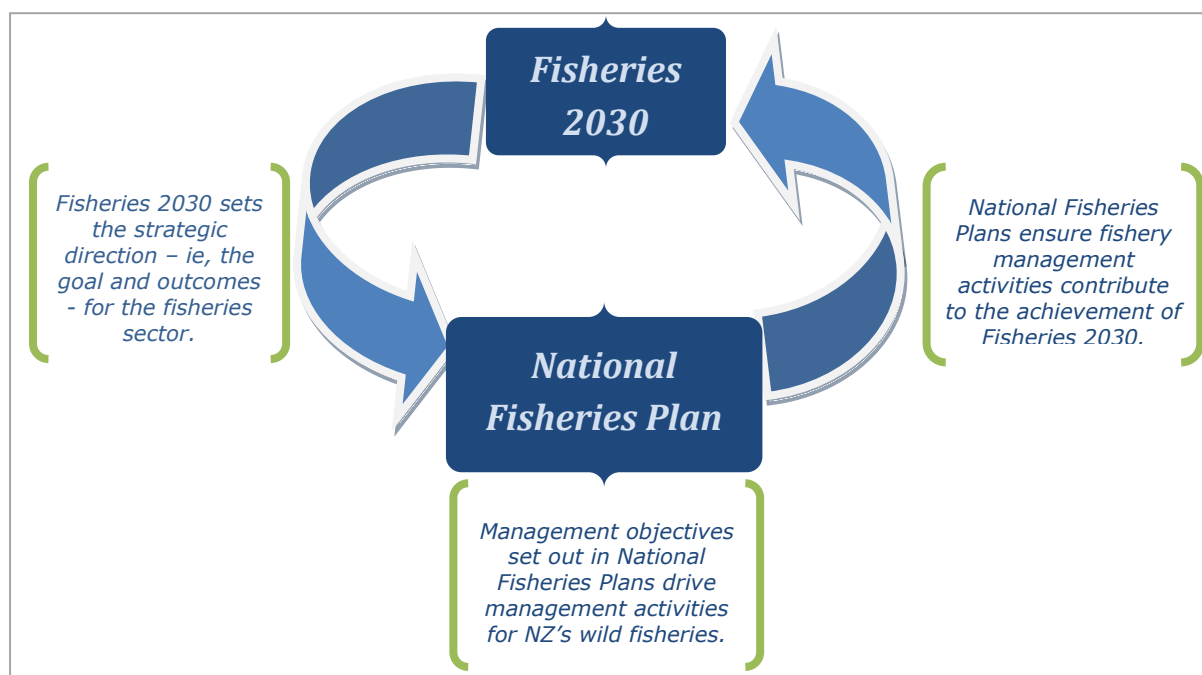
USE OUTCOME		Fisheries resources are used in a manner that provides greatest overall economic, social, and cultural benefit, including:
Supporting Use Outcomes	1	An internationally competitive and profitable seafood industry that makes a significant contribution to our economy.
	2	High-quality amateur fisheries that contribute to the social, cultural and economic well-being of all New Zealanders.
	3	Thriving customary fisheries managed in accordance with kaitiakitanga, supporting the cultural well-being of iwi and hapū.
	4	Healthy fisheries resources in their aquatic environment that reflect and provide for intrinsic and amenity value.

ENVIRONMENT OUTCOME		The capacity and integrity of the aquatic environment, habitats and species are sustained at levels that provide for current and future use, including:
Supporting Environment Outcomes	5	Biodiversity and the function of ecological systems, including trophic linkages, are conserved.
	6	Habitats of special significance to fisheries are protected.
	7	Adverse effects on protected species are reduced or avoided.
	8	Impacts, including cumulative impacts, of activities on land, air or water on aquatic ecosystems are addressed.

The *Fisheries 2030* goal, use and environment outcomes, and supporting outcomes are deliberately high level and are not intended to be used to determine management services for individual shellfish stocks directly. Rather, *Fisheries 2030* sets the broad framework that forms the basis for, and drives

management of, New Zealand's fisheries and aquaculture. Objectives-based management through fisheries plans is one way in which *Fisheries 2030* will be achieved (refer Figure 3).

Figure 3: Connection between *Fisheries 2030* and this Fisheries Plans



In addition to the Use and Environment outcomes, *Fisheries 2030* sets out governance conditions that are required to ensure the *Fisheries 2030* goal is achieved. Governance involves both the nature of organisations with an interest in fisheries and the nature of the relationship between those organisations. This aspect of *Fisheries 2030* is discussed more in the later section, *Working with Others* (section 2.2).

Fisheries 2030 also sets out strategic objectives and actions. These objectives and actions do not determine services for individual fishstocks directly. However, many of the management objectives and service strategies set out in the Plan directly reflect *Fisheries 2030* strategic objectives – for example, ensuring cost-effective management and services, ensuring sustainability of stocks and managing the impacts of fishing and aquaculture.

Fisheries 2030 recognises that it will take the whole sector, as well as the whole of Government, to deliver on the goal. The Ministry has captured its role in delivering on the *Fisheries 2030* Use and Environment outcomes in the following Ministry two outcomes:

- > New Zealand is able to optimise the social, cultural and economic benefits from fisheries and aquaculture.
- > Fishing is managed to support the health of the aquatic environment.

These outcomes reflect the scope of the Ministry's role and accountabilities. Although currently focused within the scope of the Ministry's role, this Plan links its objectives directly to *Fisheries 2030* rather than Ministry outcomes. Linking to *Fisheries 2030* provides explicit opportunities for others in the fisheries and natural resource sectors to discuss and link in their management activities when fisheries planning processes are undertaken. This supports achievement of *Fisheries 2030* and is

likely to increase management efficiency by reducing or avoiding duplication of management activity and providing for complementary services to be aligned.

How *Fisheries 2030* Outcomes Drive Management of Inshore Shellfish Fisheries

The *Fisheries 2030* goal and outcomes acknowledge that New Zealanders benefit from the various uses of fisheries resources in different ways and recognise that we are constrained by the environmental impact fishing activities have on stocks and the aquatic environment.

Use

Achieving the Use Outcome means managing stocks and the aquatic environment in a manner that enables people to provide for their various use benefits, including social, economic and cultural benefits, and ensures that intrinsic values are maintained.

Securing benefits from the use of inshore shellfish fisheries is a key focus of the Plan objectives. The Plan objectives reflect the need to consider all benefits; inshore shellfish fisheries are shared fisheries and meeting the aspirations of all fishing sector interests to maximise overall benefit is not always simple. Information on benefits differs in quality and quantity across sectors and is rarely directly comparable. The information processes used to review performance against objectives uses best available information.

Intrinsic benefits are captured by objectives linked to the Environment Outcome. This outcome recognises the need to secure long-term sustainability of fishstocks and a healthy aquatic environment.

Environment

Achieving the Environment Outcome means managing fishstocks sustainably and protecting fishstock habitat, including from the adverse impacts of fishing. Without managing stocks sustainably and protecting habitats there is no long-term opportunity to realise use benefits from stocks.

Managing fishstocks sustainably means ensuring they are harvested in a manner that maintains their potential to meet the reasonably foreseeable needs of future generations. The Plan sets objectives to ensure all inshore shellfish stocks are monitored and harvested sustainably.

Protecting the environment in which fishstocks live means managing the impacts of fishing and non-fishing activities on biodiversity, associated or dependent species and habitats of significance to fisheries management. When managing the environmental effects of fishing, it is important to look not only at the direct effects arising from fishing for a single fishstock, but also at the cumulative effects that result from fishing across multiple fishstocks and areas. The objectives set out in this fisheries plan reflect the need to consider environmental impacts broadly. The supporting annual planning and service delivery processes provide for consideration of how best to manage the adverse effects of fishing, including assessing risk and identifying contributing fisheries across all New Zealand fisheries waters to allow targeting of management activity. The information processes used to review performance against objectives and to identify contributing fisheries are set out in policies and standards or, where no policy or standard exists, the best available information is used.

Non-fishing activities, such as land use activities, also affect the health of fishstocks and fish habitat. While the Ministry has no direct accountability for managing non-fishing activities, working with other government agencies – for example through the Natural Resource Sector Network – provides opportunities to contribute effectively to processes that manage non-fishing impacts and these opportunities are captured by the objectives set out in the Plan.

2.2 Governance

To be effective, management of inshore shellfish fisheries needs to be well informed and collaborative, with all those in the sector demonstrating stewardship – that is, supporting and contributing to management and being accountable for their actions.

Fisheries 2030 Governance Conditions

The *Fisheries 2030* governance conditions are a statement about how fisheries sector participants will act to deliver on the high level goal and outcomes. They encompass both the nature of organisations and the nature of relationships between those organisations. The former acknowledges the wide range of institutions and participants involved in the delivery of *Fisheries 2030* outcomes, including government, Treaty partners, private companies, non-government organisations and other stakeholder groups. The nature of relationships between organisations refers to the particular forms of coordination. This recognises that governance involves relationships through networks and partnerships that result in complementary responses to fisheries management issues by the Ministry, our Treaty partners and stakeholders.

Governance Conditions		Sound governance arrangements that are well specified, transparent and which support cost-effective and accountable decision-making
Supporting Governance conditions	9	The Treaty partnership is realised through the Crown and Māori clearly defining their respective rights and responsibilities in terms of governance and management of fisheries resources.
	10	The public have confidence and trust in the effectiveness and integrity of the fisheries and aquaculture management regimes.
	11	All stakeholders have rights and responsibilities related to the use and management of fisheries resources that are understood and for which people can be held individually and collectively accountable.
	12	We have an enabling framework that allows stakeholders to create optimal economic, social and cultural value from their rights and interests.
	13	We have an accountable, responsive, dynamic and transparent system of management.

The Ministry has captured its role in delivering on the *Fisheries 2030* Use and Environment outcomes in the following two Ministry outcomes:

- > The Crown's fisheries and aquaculture obligations to Māori are delivered.
- > There is increasing trust and confidence in our management of fisheries and aquaculture.

How the Governance Conditions Affect Management of Inshore Shellfish Fisheries

How the Plan is finalised, implemented and reviewed supports achievement of the *Fisheries 2030* governance conditions. The governance tactics set out in this fisheries plan seek to:

- > deliver on the Treaty partnership by providing avenues for input into how inshore shellfish fisheries will be managed
- > provide clear information on how we plan to manage inshore shellfish fisheries, how they are performing, and how we will prioritise and invest in these fisheries to improve their performance to meet objectives
- > provide opportunities for tangata whenua and stakeholders to input into and link their planning processes to Ministry processes, and
- > demonstrate accountability through performance monitoring and focusing management activity towards rectifying gaps in performance in a timely manner.

2.3 Legislation and Policy

The fisheries management framework includes legislation, regulations, policies and standards. The fisheries planning process is an articulation of how shellfish fisheries management will be undertaken within this framework.

The key pieces of legislation relating to inshore shellfish fisheries are:

- > Fisheries Act 1996, and
- > Treaty of Waitangi (Fisheries Claims) Settlement Act 1992

The Ministry also administers the Fisheries (Quota Operations Validation) Act 1997 and the Māori Fisheries Act 2004, which have more of a supportive function and are not discussed here.

The Fisheries Act 1996

The Fisheries Act states the law relating to fisheries resources and how they should be managed, and recognises New Zealand's international obligations relating to fishing. Parts 2 and 3 of the Fisheries Act are of particular relevance to the Plan as they provide the legal context to the Use and Environment objectives set out in the Plan. Part 2 sets out the broad purpose and principles of the Fisheries Act:

- > Purpose:
 - to provide for the utilisation of fisheries resources while ensuring sustainability.
- > Environmental Principles:
 - Associated or dependent species should be maintained above a level that ensures their long-term viability.
 - Biological diversity of the aquatic environment should be maintained.
 - Habitat of particular significance for fisheries management should be protected.
- > Information Principles:
 - Decisions should be based on the best available information.

- Decision-makers should consider any uncertainty in the information available in any case.
- Decision-makers should be cautious when information is uncertain, unreliable or inadequate.
- The absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of the Fisheries Act.

Part 3 of the Fisheries Act outlines the measures the Minister may take to ensure sustainability, including:

- > Setting total allowable catches (TACs) for quota management stocks in each quota management area as outlined in section 13
- > Making of regulations, for example relating to the size, sex or biological state of fish that can be taken, where or when fishing can occur, and the fishing methods that can be used
- > Taking measures considered necessary to avoid, remedy, or mitigate any adverse effects of fishing on the relevant protected species.

Other parts of the Fisheries Act generally support, or relate to the application of, the QMS, excepting Part 7, which provides for resolution of disputes between fishery users,⁶ and Parts 9 and 9A which provide for marine areas to be managed to recognise rangatiratanga or used for aquaculture.

The Plan is underpinned by, and operates in a way that is consistent with, the intent of the Fisheries Act. However, annual planning and service delivery processes may result in services that investigate changes to legislation to better allow the Plan's objectives and the goals reflected in *Fisheries 2030*, to be met.

Treaty of Waitangi (Fisheries Claims) Settlement Act 1992

The Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (the Settlement Act) gives effect to the settlement of claims relating to Maori fishing rights. It makes better provision for Maori non-commercial traditional and customary fishing rights and interests, and for Maori participation in the management and conservation of New Zealand's fisheries. Obligations under the Settlement Act can be considered in two broad categories:

- > Specific obligations relating to use (both commercial and non-commercial), and
- > More general obligations relating to the right of tangata whenua to participate in fisheries management decisions and have particular regard given to their kaitiakitanga.

Fisheries management decisions provide the mechanism for the exercise of the specific rights.

The specific and general obligations relating to capture fisheries⁷ arising from the Settlement Act are reflected in the Fisheries Act, which provides for the commercial elements of the settlement (through 20% of quota as new species enter the QMS) and the non-commercial elements (through regulations providing for customary use). The more general obligation to provide for tangata

⁶ Specifically, Part 7 "...applies to disputes about the effects of fishing (excluding fish farming) on the fishing activities of any person who has a current interest provided for or authorised by or under..." the Fisheries Act. (s 114(a) of the Fisheries Act).

⁷ Meaning 'wild', as distinct from 'farmed' fisheries.

whenua input and participation in the setting of sustainability measures and to have particular regard to kaitiakitanga⁸ requires systems and processes to allow:

- > tangata whenua to express kaitiakitanga, particularly as it relates to fisheries management, and
- > tangata whenua expressions of kaitiakitanga to be given particular regard when making decisions on sustainability measures for the fisheries.

In 2010, the Ministry decided it would support tangata whenua to develop Iwi and Forum Fisheries Plans as a vehicle for them to express their kaitiakitanga aspirations and objectives relating to fisheries. The Plan uses the Iwi Forums, and the Iwi and Forum Fisheries Plans, as the key vehicles for providing Māori opportunities to engage in fisheries management processes and to acknowledge and give regard to tangata whenua kaitiakitanga aspirations and objectives when making decisions on sustainability measures for the fisheries.

International Obligations

Under international law, New Zealand has sovereignty over its territorial sea and internal waters. New Zealand's right to exploit marine resources comes with a range of obligations. These include the obligations to ensure sustainability, to promote optimum utilisation, and to balance the rights and obligations of other States. The Plan seeks to deliver on New Zealand's international obligations with regard to shellfish fisheries.

Policies and Standards

The Ministry's policies and standards provide further direction on how the Ministry will apply relevant legal obligations. Existing examples of policies and standards relevant to the management of inshore shellfish fisheries are the *Harvest Strategy Standard for New Zealand Fisheries* and the *QMS Introduction Process Standard*.⁹

These policies and standards are incorporated into the Plan objectives and/or into annual planning and service delivery processes. New policies and standards will be incorporated as they are developed.

⁸ This obligation is contained in s12(1)(b) of the Fisheries Act 1996. The Ministry considers that this obligation to "provide for the input and participation" is a more active duty than consultation generally requiring earlier engagement with tangata whenua (at the option definition stage, rather than the evaluation of options).

⁹ The *Harvest Strategy Standard for New Zealand Fisheries* and the *QMS Introduction Process Standard* can be found at www.fish.govt.nz.

3. Management Approach

The Plan contains:

- > management objectives that describe how Fisheries 2030 will be met for inshore shellfish stocks
- > performance measures that help to identify when the management objectives are or are not being met, and
- > the set of default service strategies that will guide management activity for inshore shellfish stocks over the life of the Plan.

3.1 Management Approach "Components"

Management Objectives

As noted above, management objectives are recorded in the Plan, and describe how the high level goal in *Fisheries 2030* will be achieved for a particular set of inshore shellfish stocks (Group). In line with *Fisheries 2030* outcomes, separate management objectives recognise different aims for use and environment, the latter comprising objectives relating to inshore shellfish stock sustainability and management of the environmental effects of fishing.

The objectives in the Plan are not written using the language of relevant legal obligations, however all relevant legal obligation are *assumed* in the objective. For example, the stock sustainability objective for stocks in Group 4 is stated as, "Catch is at a level that is sustainable." The objective reflects that, for many of the stocks in this Group, catch is the only information available to monitor and manage the stock. If the assumed Fisheries Act obligation was made explicit in the objective, it would read, "Catch is at a level that is sustainable and is at a level that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above a level that can produce the maximum sustainable yield" (s13(2A) of the Fisheries Act).

Performance Measures

Performance measures have been developed for each management objective to assist the Ministry in determining whether the management objective is being met. These performance measures are more than a 'pass/fail' test. They provide a signal that there is a need to investigate further and to possibly take new action. For example, a fall in quota value for an inshore shellfish stock is a prompt for the Ministry to investigate further whether this decline is within the Ministry's control (for example, a sustainability issue) or whether other unrelated factors are influencing the fall in quota value, such as unfavourable exchange rates.

Performance measures may be direct (for example, a stock's quota value as a measure of commercial value) or indirect (for example, customary permit fulfilment as a measure of the benefits of customary fishing) depending on the type of information available.

Where performance measures are lacking or poor, services to establish measures will be captured in the AOP as resources allow.

Service Strategies

In addition to management objectives and performance measures, each Group has a set of service strategies to signal the Ministry's preferred approach where an intervention or service is required. These describe, in general terms rather than in the operational terms that will be used in the AOP, the appropriate strategy for application or implementation of services, given the inshore shellfish fishery characteristics and management imperatives for stocks in that Group.

Service strategies do not comprehensively cover all services that will be applied to achieve management objectives. Rather, they provide high level direction for the key services that are driven by the Plan. It is implicit that generic services, such as those that support management of all stocks (for example, maintenance of the QMS), are required.

Summary

Read together, the management objectives, performance measures, and service strategies provide the management approach for each Group of inshore shellfish stocks.

3.2 The Fishstock Groups

Inshore shellfish fisheries comprise over 200 QMS stocks and over 5,000 non-QMS stocks. This makes it impractical to translate *Fisheries 2030* goals and outcomes into stock-specific management objectives for each individual inshore stock covered in the Plan. Instead, stocks have been grouped into 'Groups' to facilitate multi-stock objective-setting and service delivery.

The grouping of fishstocks has been informed by initial application of a standardised categorisation methodology across all inshore fisheries.¹⁰ The methodology categorises stocks according to their desirability to fishers (ie, potential level of fishing pressure) and their biological vulnerability. Following this, Ministry managers and scientists assessed the initial categorisation of stocks and applied their judgement to move stocks that sat awkwardly in their category. For example, where desirability to one sector group was particularly high a stock may be moved to a group that better reflected their characteristics.¹¹

The categorisation was done on a stock rather than species basis due to regional differences in desirability to fishers. For example, all deepwater tuatua (PDO) stocks are moderately vulnerable biologically, but PDO 3 is more desirable than other PDO stocks because of its proximity to urban centres and the high level of fishing pressure applied by customary and amateur fishers.

Consideration was then given to how and when management objectives and service strategies might differ across categories. Some categories were considered to require the same or very similar management objectives and service strategies and, therefore, able to be grouped together. For example, two categories comprised a combination of rock lobster, paua, kina and dredge oyster stocks as a result of small differences in desirability. The categories were grouped together to form one "group" because the management objectives and service strategies were considered likely to be largely the same due to the level of fishing pressure and the high biological vulnerability of all the stocks.

¹⁰The methodology is described in *Categorisation of Inshore Fishstocks* (MFish 2010).

¹¹ The steps that resulted in the final stock Groups are documented in the Appendices of *Categorisation of Inshore Fishstocks* (MFish 2010)

Figure 4 sets out the resulting fishstock Groups. The Group hierarchy, as presented, is driven firstly by desirability, and secondly by biological vulnerability. This is because a stock's biological vulnerability is an "exacerbator" of risk. Biological vulnerability does not affect management of fisheries unless the stock is fished, whereas fishing affects management irrespective of the biological vulnerability of the stock.

Figure 4: Groups for Inshore Shellfish Stocks.

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

A few shellfish fisheries are mixed species fisheries that may comprise a number of shellfish stocks that reside in different Groups. Some shellfish stocks are also taken in more than one fishery. Good management of individual stocks requires consideration of the relevant fishery or fisheries, and this is reflected in the service strategies.

Moving Stocks Across Groups

Stocks are not constrained to groups indefinitely and this approach does not preclude consideration of unique stock-, species- or fishery-specific management objectives and service strategies.

Development pathways are provided so that, where there is demonstrable benefit in doing so, stocks can move into a different Group. Reasons for moving stocks across Groups might include:

- > to support development or exploration of development opportunities in fisheries that currently have low levels of utilisation
- > to reduce the costs of managing a stock whose value is low or has decreased
- > to enable increased sustainable utilisation of a stock whose value has increased, and
- > to enable increased sustainable utilisation of a stock that is constraining harvest of a target species.

Development pathways make explicit the processes for, and consequences of, moving stocks across Groups. For example, moving a stock to a new Group to enable increased sustainable utilisation of the stock may require a change to the research strategy to increase certainty in stock status or to support an adaptive or more responsive approach to TAC setting. Tangata whenua or stakeholders may choose to contract the research directly or request the Ministry to fund it through Ministry processes. If contracting directly, they will need to meet research standard requirements set out in the *Research and Science Information Standard for New Zealand Fisheries (MFish 2011)*.

In the case of moving a stock with low current levels of utilisation to a higher Group, one potential development pathway is applying for a special permit to take fish from stocks with a nominal TAC in conjunction with a research programme that is likely to provide sufficient information to establish commercial catch limits in accordance with statutory requirements.

Before putting a stock on a development pathway and moving stocks into different Groups, consideration will need to be given to the potential benefits and impacts across all sector interests. Also, where Ministry services are required to support development, timing of service delivery will depend on competing priorities (refer Section 4, *Implementing the Plan*).

Unique stock-, species- or fishery-specific objectives and service strategies can be achieved through development of a fisheries plan “chapter”. A fisheries plan chapter would describe fishery-, species- or stock-specific objectives and services, and the performance measures used to assess progress towards those objectives. Stock-, species- or fishery-specific chapters would be developed only if there were a significant and demonstrable benefit to be derived from doing so.

Note that this is different to applying a unique or alternative approach or service to achieve the management objectives of a particular Group. The services required to achieve the management objectives associated with a particular Group are expected to vary between stocks in the Group.

3.3 Group 1 Stock Objectives

Group 1 is comprised of New Zealand's most sought after shellfish fisheries. It includes our two most valuable inshore commercial fisheries, paua and rock lobster, which are also taonga (highly prized) to many iwi and prized by amateur fishers. Given the high level of benefits flowing from the stocks, the management approach for Group 1 has a strong focus on ensuring that each stock is healthy and can continue to provide benefits over the long term. The stocks in this group already tend to be fully utilised, therefore, opportunities to increase benefits come from minimising illegal and incidental fishing mortality, and supporting tangata whenua and stakeholders to identify and progress value-add initiatives (for example, environmental certification). The high biological vulnerability of the stocks and their easy accessibility requires close monitoring to secure benefits by establishing a responsive management approach.

USE:		Maximise the overall social, economic, and cultural benefit obtained from each stock.
ENVIRONMENT (Stock Sustainability):		Maintain biomass of each stock at or above B_{MSY} (or accepted proxy).
Performance Measures		Service Strategies
USE	<p>Trends in:</p> <ul style="list-style-type: none"> fulfilment¹² of customary permits amateur participation rates real quota value,¹³ and overall benefits, where these can be determined cost effectively <p>are stable or increasing.</p> <p>Rolling 5-yr average Cost Recovery Levies (CRL)/Annual Catch Entitlement (ACE) value is not increasing.</p>	<p>a) Reflect overall and relative sector benefits in how:</p> <ul style="list-style-type: none"> harvest strategies are defined, and catch limits are adjusted and allocated. <p>b) Establish stock-specific management procedures for a stock where this increases benefits.</p> <p>c) Where there is no management procedure, a stock will be put forward for catch limit review when stock assessment projections indicate the stock will increase and/or remain above the target biomass under current catch with greater than 50% probability.</p> <p>d) Develop and implement a compliance strategy to minimise illegal catch and illegal trade.</p> <p>e) Incentivise compliance with specified catch, size and state constraints.</p> <p>f) Support and/or lead initiatives that reduce incidental fishing mortality in each fishery.</p> <p>g) Remove regulations that unnecessarily restrict sector access to each fishery.</p> <p>h) Remove unnecessary administrative and regulatory barriers to the economic profitability of each commercial fishery.</p> <p>i) Support and/or participate in value-adding initiatives of tangata whenua and stakeholders that increase overall benefits derived from a stock.</p> <p>j) Evaluate alternative management approaches to optimise the fishery benefit/ management cost ratio.</p> <p>k) Incentivise sector groups to develop coordinated and collaborative responses to potential spatial or access conflicts.</p> <p>l) Investigate and, where beneficial, establish more direct/higher quality performance measures.</p>

¹² Fulfilment of customary permits refers to the amount of fish authorised to be taken that is actually taken.

¹³ Real quota value is quota value adjusted to account for the effects of inflation.

<p>ENVIRONMENT (Stock Sustainability)</p>	<p>Stock size is at or above the established target biomass with at least 50% probability</p>	<ul style="list-style-type: none"> a) Establish stock-specific harvest strategies¹⁴ that are consistent with the <i>Harvest Strategy Standard for New Zealand Fisheries</i>.¹⁵ b) Where there is no management procedure, a stock will be put forward for catch limit review when stock assessment projections indicate the stock will decline and/or remain below the target biomass under current catch with greater than 50% probability. c) Establish medium-term research programs to support harvest strategy and management procedure implementation. d) Improve the reliability of non-commercial catch estimates and mandatorily reported information used in stock assessments.
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¹⁴ Harvest strategies specify target soft and hard limit reference points and management actions associated with achieving the targets and avoiding the limits.

¹⁵ The *Harvest Strategy Standard for New Zealand Fisheries* can be found at: <http://fs.fish.govt.nz/Doc/16543/harveststrategyfinal.pdf.ashx>

3.4 Group 2 Stock Objectives

Group 2 is comprised of shellfish stocks that are valuable commercial fisheries and are an important food source for some customary Māori and amateur fishers. Within Group 2, the scallop (SCA 1 and CS) fisheries are listed on the Second Schedule of the Act because of their highly variable abundance. The remaining stocks are listed on the Third Schedule of the Act because it is either not possible to estimate B_{MSY} based on their biological characteristics (GLM 7A and 9) or they rely on a rotational fishing or enhancement management approach (SCA 7). The fast-growing nature and highly variable abundance of all of the stocks in this group means a more flexible management approach is required to enable access to these fisheries and increased benefits when abundance is high. Utilisation benefits across all sectors are protected by ensuring that size limits are complied with to ensure the reproductive potential of the stocks is maintained.

USE:		Maximise social, economic and cultural benefits obtained from each stock by enabling annual yield to be maximised.
ENVIRONMENT (Stock Sustainability):		Maintain stock size at or above an established minimum reference level.
Performance Measures		Service Strategies
USE	Trends in: <ul style="list-style-type: none"> fulfilment of customary permits amateur participation rates, and real quota value are stable or increasing.	a) Adopt management approaches that enable annual yield to be maximised. b) Where there is no management procedure, a stock will be put forward for review of the baseline catch limit if there is a greater than 50% probability that stock size is above the minimum reference level. c) Incentivise compliance with specified catch limits. d) Support and/or lead initiatives that reduce incidental fishing mortality in each fishery. e) Remove regulations that unnecessarily restrict sector access to each fishery. f) Remove unnecessary administrative and regulatory barriers to the economic profitability of each commercial fishery. g) Support and/or participate in value-adding initiatives of tangata whenua and stakeholders that increase overall benefits derived from a stock. h) Incentivise sector groups to develop coordinated and collaborative responses to potential spatial or access conflicts. i) Investigate and, where beneficial, establish more direct/higher quality performance measures.
	Rolling 5-yr average CRL/ACE value is not increasing.	
ENVIRONMENT (Stock Sustainability)	Stock size is at or above the established minimum reference level with at least 50% probability.	a) Establish stock- or fishery- specific harvest strategies that are consistent with the <i>Harvest Strategy Standard for New Zealand Fisheries</i> . b) Establish stock- or fishery-specific management procedures for a stock where this increases benefits. c) Where there is no management procedure, a stock will be put forward for review of the baseline catch limit if there is a greater than 50% probability that stock size is below the minimum reference level. d) Establish medium-term research programs to support harvest strategy and/or management procedure implementation. e) Incentivise compliance with specified size limits. f) Secure accurate reporting of required catch and effort data important for stock monitoring.

3.5 Group 3 Stock Objectives

Group 3 includes some of New Zealand's most important customary and amateur shellfish fisheries (including green-lipped mussels, pipi, dredge oyster, cockles and tuatua), with discrete areas supporting commercially important cockle fisheries. These stocks are generally robust to fishing pressure, although they can be susceptible to localised depletion when located near urban areas.

As filter-feeding bivalves, these species are vulnerable to land-use effects, which can cause mortality and/or make them unsafe for human consumption. Additionally, the discrete nature of their populations means these stocks already tend to be fully utilised. Opportunities to increase benefits across sectors come from incentivising compliance with catch limits to prevent localised depletion, providing for value-adding initiatives of tangata whenua and stakeholders, and minimising associated management costs.

USE:		Secure social, cultural and economic benefits from each stock.	
ENVIRONMENT (Stock Sustainability):		Maintain stock size at or above target reference level.	
Performance Measures		Service Strategies	
USE	<p>Trends in:</p> <ul style="list-style-type: none"> fulfilment of customary permits amateur participation rates, and real quota value <p>are stable or increasing.</p> <p>Rolling 5-yr average CRL/ACE value is not increasing.</p>	<p>a) Investigate, trial, and where beneficial, adopt management procedure and management strategy evaluation approaches for medium-low knowledge stocks.</p> <p>b) Where there is no management procedure, a stock will be put forward for catch limit review where there is a greater than 50% probability that stock size is above the target reference level.</p> <p>c) Incentivise compliance with specified catch limits.</p> <p>d) Support initiatives to minimise incidental fishing mortality in each fishery.</p> <p>e) Remove regulations that unnecessarily restrict sector access to each fishery.</p> <p>f) Remove unnecessary administrative and regulatory barriers to the economic profitability of each commercial fishery.</p> <p>g) Provide for value-adding initiatives of tangata whenua and stakeholders that increase overall benefits of a stock.</p> <p>h) Investigate and, where beneficial, establish more direct/higher quality performance measures.</p>	
	<p>Stock size is at or above an established target reference level with at least a 50% probability.</p>	<p>a) Establish stock- or fishery-specific harvest strategies that are consistent with the <i>Harvest Strategy Standard for New Zealand Fisheries</i>.</p> <p>b) Where there is no management procedure, a stock will be put forward for catch limit review where there is a greater than 50% probability that stock size is below the soft limit reference level.</p> <p>c) Establish medium-term research programs to support harvest strategy and/or management procedure implementation.</p> <p>d) Secure accurate reporting of required catch and effort data important for stock monitoring.</p>	
ENVIRONMENT (Stock Sustainability)			

3.6 Group 4 Stock Objectives

Group 4 is comprised of many ‘developing’ shellfish and seaweed stocks (for example, surf clams, horse mussel, sea cucumber, and bladder kelp) that are considered to have commercial market potential. The majority of stocks in Group 4 are currently sought after by only one or two sectors, while some stocks only have nominal catch limits in place.

The management approach for Group 4 is focused on providing for development opportunities of the resource for customary, amateur and commercial while minimising management costs and unnecessary constraints to sector access. As additional information becomes available greater utilisation opportunities may be provided for (for example, via development pathways) but those opportunities will be guided by the biological vulnerability of the species or stock given the range of vulnerabilities in this group.

USE:		Enable utilisation of each stock.
ENVIRONMENT (Stock Sustainability):		Ensure catch is at a level that is sustainable.
Performance Measures		Service Strategies
USE	Rolling 5-yr average CRL/ACE value is not increasing.	<ul style="list-style-type: none"> a) Investigate, trial, and where beneficial, adopt management procedure and management strategy evaluation approaches for low knowledge stocks. b) Remove regulations that unnecessarily restrict sector access to each fishery. c) Provide opportunities for tangata whenua and stakeholders to develop fisheries. d) Minimise management costs.
ENVIRONMENT (Stock Sustainability)	Catch is stable or fluctuates without trend.	<ul style="list-style-type: none"> a) Where there is no management procedure, consider a stock for catch limit review if catch declines over three consecutive observations. b) Secure accurate reporting of catch.

3.7 Group 5 (Non-QMS) Species Objectives

Group 5 comprises all remaining shellfish and seaweed stocks (ie, over 5000 shellfish and seaweed species), including toheroa, a taonga species to customary Māori. Stocks in this group generally require little management intervention as utilisation is low and are, therefore, currently managed outside the QMS. Included in this group are a number of shellfish and seaweed species listed on Schedule 4C of the Act, which are currently subject to a fishing permit moratorium because of potential sustainability or utilisation concerns if managed as an open access fishery. Group 5 stocks and species will be monitored and, if necessary, assessed against the criteria set out in the *QMS Introduction Process Standard*. The management approach for these stocks will be not to act unless the non-QMS framework is not providing for utilisation and sustainability.

USE:		Enable utilisation of each stock.
ENVIRONMENT (Stock Sustainability):		Ensure catch is at a level that is sustainable.
Performance Measures		Service Strategies
USE	Management costs are stable or decreasing	<ul style="list-style-type: none"> a) Minimise constraints on sector access to fisheries. b) Minimise management costs.
ENVIRONMENT (Stock Sustainability)	Catch is stable or fluctuates without trend Catch does not exceed or fluctuate beyond the QMS Introduction Process Standard thresholds.	<ul style="list-style-type: none"> a) Apply the <i>QMS Introduction Process Standard</i>. b) Improve monitoring of non-QMS species if an explicit risk or a fisheries management need is identified.

3.8 Environment Objectives for All Groups

The management of environmental effects on shellfish and seaweed fisheries, and mitigating fishing effects on the aquatic environment, are important components across all Groups of this Plan. For all Groups, a healthy aquatic environment is necessary for ensuring long-term sustainability and increased utilisation benefits of these fisheries. The management approach seeks to reduce adverse effects of fishing on the aquatic environment. As shellfish fisheries are particularly vulnerable to land-use effects and environmental change, habitats of particular significance for fisheries management must be protected.

ENVIRONMENT (Stock Sustainability):		Protect, maintain and enhance habitats of significance for fisheries management.
ENVIRONMENT (Effects of Fishing):		Minimise adverse effects of fishing on the aquatic environment, including on biological diversity.
Performance Measures		Service Strategies
ENVIRONMENT (Stock Sustainability)	<p>Policy objectives for habitats of significance for fisheries management are met.</p> <p>Where there are no policy objectives, fishing effects on identified habitats of significance for fisheries management are not increasing.</p> <p>Relevant resource management policy and planning documents include objectives, policies, and rules that protect habitats of significance for fisheries management.</p>	<p>a) Improve the quality of information available to assist identification and management of habitats of particular significance for fisheries management.</p> <p>b) Adopt management measures to protect habitats of significance for fisheries management where required or it increases benefit.</p> <p>c) Engage with relevant authorities to ensure impacts from non-fishing activities on habitats of significance for fisheries management are identified and managed.</p>
ENVIRONMENT (Effects of Fishing)	<p>Policy objectives for managing fishing effects on the aquatic environment and biodiversity are met.</p> <p>Where there are no policy objectives, interactions with the benthos and protected species are not increasing.</p>	<p>a) Improve the information and methodologies available to assist management of the environmental effects of fishing.</p> <p>b) Adopt management measures (regulatory and voluntary) to manage environmental effects of fishing where required.</p> <p>c) Incentivise compliance with management measures (regulatory and voluntary) specifically designed to avoid, reduce or minimise environmental effects from fishing.</p> <p>d) Investigate and, where beneficial, establish more direct/high quality performance measures.</p>

3.9 Governance Tactics

The Plan does not explicitly set management objectives for governance conditions. Rather, the Plan and the supporting processes have been designed to achieve these conditions. By specifying management objectives, performance measures and service strategies, the Plan supports clear accountability and transparency in decision-making. The Plan's supporting processes also contribute to accountability and transparency and provide for meaningful engagement and effective communication.

The table below summarises the fisheries planning processes, actions and tasks that assist achievement of the governance conditions in *Fisheries 2030*.

Governance Condition	Governance Tactic
The Treaty partnership is realised through the Crown and Māori clearly defining their respective rights and responsibilities in terms of governance and management of fisheries resources.	<ul style="list-style-type: none"> > Iwi forums are established in a manner that enables iwi to engage meaningfully in fisheries planning and decision-making. > Iwi are supported to develop Iwi Fisheries Plans and Iwi Forum Fisheries Plans that link to Ministry Fisheries Plans easily. > Iwi Forums are engaged in shellfish fisheries planning processes (refer section 4). > Iwi have opportunities to input and participate in sustainability measure decisions. > Regard is given to kaitiakitanga, as set out in Iwi and Forum Fisheries Plans or otherwise, in advice to the Minister on sustainability measures.
The public have confidence and trust in the effectiveness and integrity of the fisheries and aquaculture management regimes.	<ul style="list-style-type: none"> > The effectiveness of management actions is demonstrated through annual monitoring and reporting on performance (the Annual Review Report). > Fisheries planning and decision-making processes are clearly specified and transparent. > Tangata whenua and Stakeholder forums enable tangata whenua and stakeholders to engage meaningfully in fisheries decision-making. > Tangata whenua and stakeholders have opportunities to contribute to sustainability measure decisions.
All stakeholders have rights and responsibilities related to the use and management of fisheries resources that are understood and for which people can be held individually and collectively accountable.	<ul style="list-style-type: none"> > Tangata whenua and Stakeholder forums are established to support good sector governance. > Fisheries planning and decision-making processes are clearly specified and transparent. > Opportunities for tangata whenua and stakeholders to contribute to priority setting, service specification and service delivery are provided. > Annual monitoring and reporting on performance supports identification of drivers of non-performance.
We have an enabling framework that allows stakeholders to create optimal economic, social and cultural value from their rights and interests.	<ul style="list-style-type: none"> > Opportunities for tangata whenua and stakeholders to optimise benefits are provided through clear and transparent development pathways. > Management objectives, performance measures and service strategies provide greater certainty for stakeholders. > Opportunities for tangata whenua and stakeholders to contribute to priority setting, service specification and service delivery are provided.
We have an accountable, responsive, dynamic and transparent system of management.	<ul style="list-style-type: none"> > The effectiveness of management actions are demonstrated through annual monitoring and reporting on performance. > The annual planning cycle provides for timely management intervention in response to change. > Fisheries planning processes and decision-making are clearly specified and transparent. > Engagement processes provide for the sharing of information about the state of fisheries.

In addition to the processes, actions and tasks set out above, the following activities support the achievement of governance conditions:

- > To support continuous improvement, structured feedback will be sought from tangata whenua and stakeholders annually on how effectively the plans and processes are operating and what adjustments could be made to improve their operation. Adjustments will be made to better meet governance conditions where cost-effective opportunities to do so are identified.
- > Overall performance against governance conditions will also be reported on through *Fisheries 2030* monitoring. Information from this process will also be used to identify continuous improvement opportunities.

4. Implementing the Plan

The Plan is implemented through an annual planning and service delivery cycle. The Plan drives the annual cycle by establishing the management objectives, performance measures and service strategies that guide management activity over the life of the plan.

4.1 Annual Planning and Service Delivery Cycle

The annual cycle is illustrated in Figure 4; it generates two key documents:

- > the Annual Review Report, and
- > the Annual Operational Plan.

These are “implementation” focused documents. The Annual Review Report enables gaps in performance to be identified and acted upon. The Annual Operational Plan sets out the services that will be provided to meet objectives, including the services needed to address gaps in performance. The specified services are then delivered by service providers.

Figure 4: Annual Planning Cycle



Annual Review Report

The Annual Review Report is made up of two parts:

- > **Part One** records performance against the Plan objectives and any associated stock-specific performance measures (for example, target stock sizes or reference points).
- > **Part Two** records performance in delivering the previous year's Annual Operational Plan.¹⁶

Together, Parts One and Two identify gaps in performance for further analysis. An analysis of performance, gaps in performance, and potential service options, in turn, enables new management actions and services, and necessary adjustments to existing services to be identified, for inclusion in the next Annual Operational Plan.

Annual Operational Plan

The Annual Operational Plan sets out the stock, fishery, and cross-fishery management actions and services to be provided in the next financial year.

The services specified in the Annual Operational Plan are consistent with the high-level service strategies outlined in the Plan and are specified at a level that guides service delivery appropriately.

Prioritisation

Due to the need to operate within available resources, a prioritisation of proposed Ministry services occurs across all five national fisheries plans (that is, the Inshore Shellfish, Inshore Finfish, Inshore Freshwater, Highly Migratory Species and Deepwater & Middle-depth fisheries plans) before the Annual Operational Plan for the National Fisheries Plan for Inshore Shellfish is finalised each year. The process for prioritising uses specified decision criteria.¹⁷

Service Delivery

Identified services are delivered by the Ministry and external service providers. For example, the Ministry Field Operations Business Group would deliver compliance and enforcement services identified, whereas a research service may be delivered by an independent research provider or stakeholder entity.

4.2 Engaging with Others

Tangata whenua and stakeholders have opportunities to contribute to, and link their planning processes into, the annual planning cycle.

Primary engagement occurs through formal structures (tangata whenua and stakeholder “forums”) and focuses on:

- > In the national planning cycle: identification of management objectives, performance measures and service strategies for stock groupings. (These first National Inshore Plans are baseline, draft plans developed by the Ministry. They are being used to trial the new planning approach. At the end of the annual planning cycle, both the plans and the

¹⁶ The first Annual Review Report will only consist only of Part One, as there will be no Annual Operational Plan for the previous year to report against.

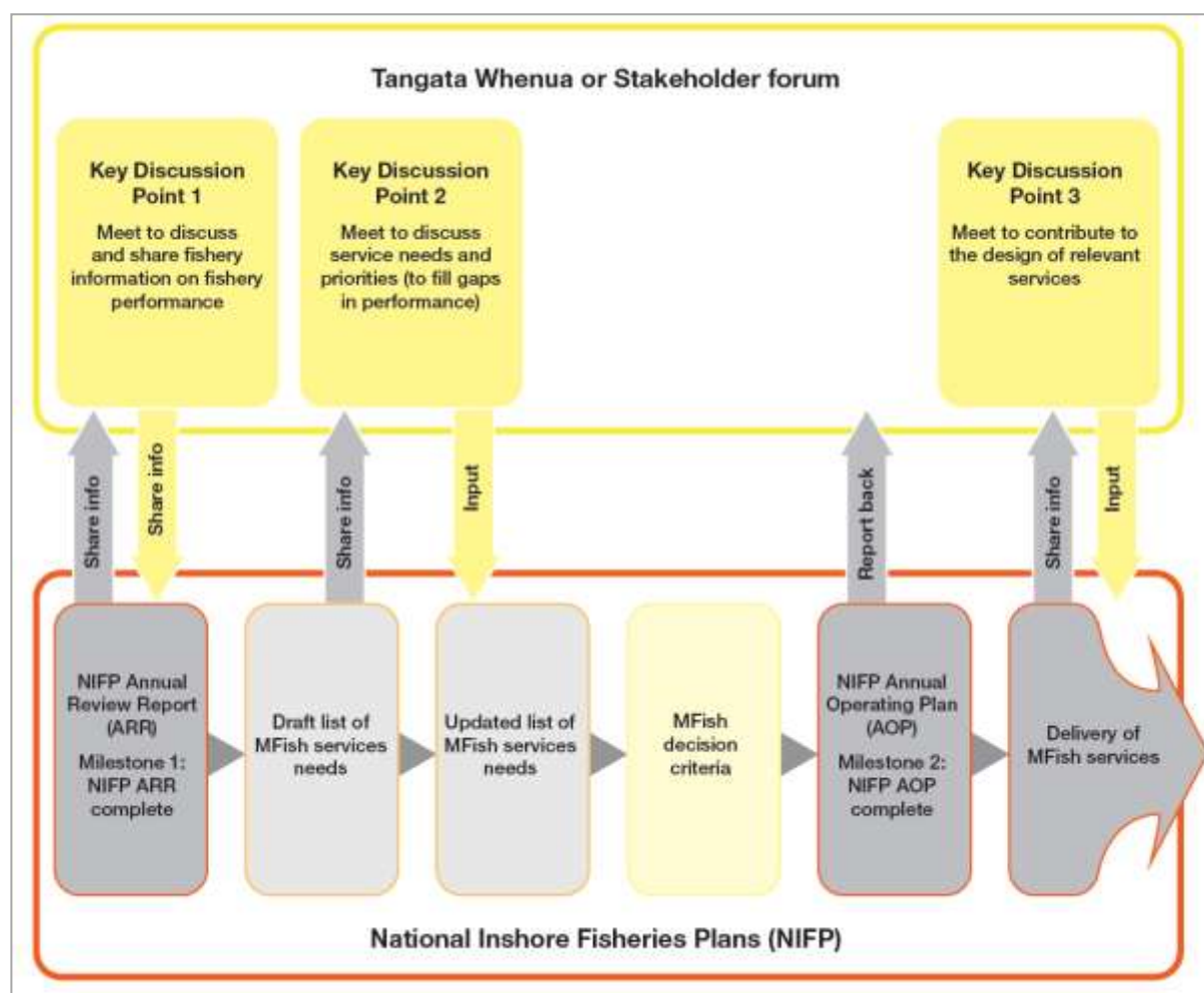
¹⁷ Currently under development.

planning cycle will be reviewed, updated, and improved with input from tangata whenua and stakeholders.)

- > In the annual planning and service delivery cycle: (i) information sharing to inform performance reporting; (ii) discussions to support identification of services; and (iii) subsequent design of the services.

The key engagement points in the annual planning process are illustrated in Figure 5.

Figure 5: Engagement Model for Working with Others



None of the discussion points set out in Figure 5 replace, or are a substitute for, statutory consultation, where it is required by the Fisheries Act or other relevant legislation.

Secondary engagement occurs through less formal mechanisms. This engagement is focused towards gathering expert information and input to support the annual cycle and on working with other agencies to aid integrated management and secure efficient delivery of government services.

4.3 Tangata Whenua and Stakeholder “Forums”

The use of formal tangata whenua and stakeholder forums for primary engagement recognises that engagement should be efficient, focused and meaningful. The forum structures used are listed and described below.

Tangata Whenua: ‘Tier 1’ Iwi Forums

The formal engagement structures for tangata whenua are Tier 1 Iwi Forums. Tier 1 Iwi Forums comprise representatives from Iwi:

- > who each have robust governance structures in place to manage the full range of their fisheries interests
- > whose combined rohe encompasses one or more Fisheries Management Areas (or an area of a scale similar to a Fisheries Management Area), and
- > who have developed an Iwi Forum Fisheries Plan.

An Iwi Forum Fisheries Plan sets out the fisheries goals of the forum in a way that can contribute to the fisheries plan annual planning cycle and can inform fisheries management decision-making.

Tier 1 Iwi forums are engaged at all the key discussion points shown in Figure 5 above.

Iwi that are not part of a Tier 1 Forum receive Ministry services to help them meet Tier 1 governance criteria and join a Tier 1 Forum, if they wish to do so. All Iwi receive opportunities to input into the design of planned services relating to sustainability measures for fisheries in their rohe. For Tier 1 Iwi Forums, this occurs in the form of a meeting. For Iwi who are not part of a forum, this occurs in writing.

Iwi that have developed individual Iwi Fisheries Plans as part of their iwi settlement but are not part of a Tier 1 Forum are engaged in the annual planning and service delivery cycle in writing. They are also invited to attend iwi forum meetings occurring in their region that are discussing services of relevance to their rohe and settlement.

Amateur Fishing Sector: Regional Recreational Fishing Forums

The formal engagement structures for the amateur fishing sector are Regional Recreational Fishing Forums. Regional Recreational Fishing Forums each comprise eight to ten individuals, mostly mandated by a local or regional fishing club or organisation, that have been appointed by the Ministry to the forum after a formal application process. Regional Recreational Fishing Forums encompass one or more Fisheries Management Areas.

Regional Recreational Fishing Forums are engaged at Key Discussion Points 1 and 3 shown in Figure 5 above.

A national meeting of regional recreational fishing forum representatives, which includes a member from each forum plus the presidents (or delegates) of national recreational fishing organisations, occurs annually and provides input into Key Discussion Point 2, particularly in respect of priorities.

Groups not represented on, and individuals not linked to, the regional forums will be encouraged to contact or liaise with recreational fishing forum representatives in their region (or their mandating group) to provide their input.

Commercial Fishing Sector: Inshore Fishing Industry Council & Constituent CSOs

The formal engagement structures for the commercial fishing sector are the Inshore Fishing Industry Council and its constituent Commercial Stakeholder Organisations (CSOs). The Inshore Fishing

Industry Council is an industry forum that brings together the various CSOs that represent commercial fishing interests in inshore fisheries.

The Inshore Fishing Industry Council is the key engagement structure for Key Discussion Points 1 and 2 in Figure 5, whereas either the Inshore Fishing Industry Council or the relevant CSO(s) will be approached for service design discussions (Key Discussion Point 3), depending on the scope and nature of the service.

Individual commercial stakeholders will be encouraged to engage with their CSO(s) if wishing to contribute to the planning and service delivery discussions.

Environmental Interests: ENGO Forums

The Ministry has biannual meetings with Environmental Non-governmental Organisations (ENGOS). These meetings will be used to seek input into Key Discussion Points 1 and 2 above. An additional meeting may be requested where service design (Key Discussion Point 3) would benefit from input from ENGOS.

Environmentalists outside of these forums are encouraged to work with the ENGOS in order to have input into these Key Discussion Points.

Appendix 1. Profile of New Zealand's Inshore Shellfish and Seaweed Fisheries

New Zealand Shellfish and Seaweed Fisheries Overview

The Plan covers marine invertebrates (ie, shellfish and echinoderms) and seaweeds found along the inshore area of New Zealand fisheries waters (ie, the area from the shoreline to approximately 12 nautical miles seaward or around 200m water depth). New Zealand has a wide diversity of shellfish and seaweeds (over 5000 species combined), however, a comparatively small number are of interest to inshore fishers at this time. For example, of the 3660 species of molluscs in New Zealand, only around 20 species are currently utilised across the various sectors.

Twenty-four inshore shellfish species are managed within the QMS, comprising 201 individual stocks (Annex 1). In addition, about 5,000 species are managed outside the QMS. Some non-QMS species are fished (for example, toheroa and octopus) or taken as unwanted bycatch in fisheries targeting other species, while others do not currently interact with fisheries at all.

Use Overview

Māori Customary Non-commercial Fisheries

This section describes Māori customary interests in inshore shellfish and seaweed species. Because Māori also participate in the amateur and commercial sectors, the following sector sections below will also be relevant.

Treaty Settlements and Resulting Framework

The Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 settled all Māori claims relating to commercial fishing rights and interests in shellfish fisheries. Claims by Māori in respect of non-commercial shellfish fisheries continue to give rise to Treaty obligations on the Crown. The Fisheries (Kaimoana) Regulations 1998 and the Fisheries (South Island Customary Fishing) Regulations 1998 give expression to the Crown's customary Māori obligations.

Iwi and hapu have strong connections to particular kaimoana and traditional fishing places, and retain knowledge (mātauranga Māori) of the location of these traditional fishing areas. They also have their own governance structures and specific fisheries' interests. The Fisheries (Kaimoana) Regulations 1998 and the Fisheries (South Island Customary Fishing) Regulations 1998 require the appointment of tangata kaitiaki/tiaki (guardians) who authorise and manage customary harvest. These regulations provide for the making of mātaihai reserves, which exclude commercial fishing and allow for the management of all non-commercial fishing. Where tangata kaitiaki/tiaki have not been appointed, harvest of shellfish species for the purpose of a hui or tangi can be undertaken in accordance with regulation 27A of the Fisheries (Amateur Fishing) Regulations 1986.

Shellfish are an important traditional food source for Māori. The occurrence and distribution of shellfish species varies across regions and different species have different regional importance. Shellfish species (for example, rock lobster, paua, kina, pipi, and cockles) that have taonga

significance to iwi and hapu have also been addressed in a number of Deeds of Settlements and Fisheries Protocols of Māori claimants.

Māori Customary Non-commercial Use

Information on the quantity of inshore shellfish and seaweed stocks harvested under customary fishing permits or authorisations is currently incomplete. Although reporting requirements exist under customary fishing regulations, the framework for collecting and storing this information is still being implemented in some areas. Additionally, many shellfish species have only recently been introduced to the QMS. Information on the harvest levels and customary value of newly introduced QMS shellfish has only recently begun to be assessed.

Based on the information the Ministry holds on customary harvest for the 2009 calendar year, the most commonly harvested shellfish species by Māori customary fishers include rock lobster, oysters, paua, kina, green-lipped mussels, pipi, cockles and scallops. Seaweeds (rimu, rimurimu and rimupara) were historically valued resources for Māori and were commonly used as storage containers (*Durvillea* sp.), medicine (*Gigartina* sp. (rehia)), food (*Porphyra* sp. (karengo or parengo)), and in trade. Today, the majority of Māori harvest seaweeds under the amateur fishing regulations to meet their food, medicinal or storage needs.

Amateur Fisheries

Amateur fishing is highly valued by many New Zealanders and makes up an important part of our culture. The proximity of many cities and towns to the coast provides amateur fishers with the ability to access iconic inshore shellfish species like rock lobster and paua. People harvest shellfish species for recreation and food. Amateur harvest of seaweed is often used as garden compost but some is collected for food or medicinal use.

Amateur shellfisheries are primarily managed using input controls set under the Fisheries Act and included in the Fisheries (Amateur Fishing) Regulations 1986 and various regional amateur fishing regulations. Key controls include a per person daily bag limit and method restrictions. For the more popular species (for example, rock lobster and paua) there are specific daily bag limits, with a standard bag limit of 50 per person per day for all unspecified species. Rock lobster and paua are managed using a daily bag limit and a minimum legal size limit. Scallops and dredge oysters, in some areas, are managed using a daily bag limit, minimum legal size limit and an open season control. There are no controls on the amateur harvest of seaweed.

Amateur Profile

On an annual basis, a large proportion of the New Zealand population participates in amateur fishing. Customary fishers also frequently fish under the amateur fishing regulations; this includes situations where Māori take kaimoana within the amateur limits and do not use a customary permit. Commercial fishers have the ability to fish recreationally from a commercial vessel (through approval under section 111 of the Fisheries Act).

The majority of shellfish and seaweed harvesters are not members of clubs and are difficult to contact. Some harvesters are affiliated with local fishing, boat and dive clubs, particularly if they also participate in finfish fisheries. National amateur representatives or advocacy groups include the

New Zealand Recreational Fishing Council, New Zealand Sport Fishing, New Zealand Underwater Association and Option 4 (a multi-party non-commercial group).

Amateur Use

Information on amateur catch is poor. There are no reporting requirements for amateur fishers and it is difficult to quantify catch, especially in the shellfish and seaweed fisheries. Research to quantify amateur catch at a national scale has been undertaken four times using national telephone surveys: 1991–92, 1996, 1999–2001 and 2000–01. However, due to a number of issues, the results from these surveys are considered unreliable.

There has been some local area research on shellfish that may provide more reliable information, but the nature of this information makes it difficult to draw conclusions across Fisheries Management Areas. The Ministry is currently developing a new amateur fishing survey methodology to meet this information need. A survey is planned for 2012 to obtain updated estimates and more reliable of amateur catch for important species.

On intertidal soft shores, cockles, pipi and tuatua support important manual digging fisheries. Pipi and tuatua (and, to a lesser extent, cockles) are largely amateur fisheries. Historically, toheroa supported an important amateur fishery on open coast beaches; however, the fishery ceased in the 1960s as a result of overfishing. Amateur fishing of toheroa is now prohibited. Paddle crabs found on these types of beaches are the principal crab taken by amateur fishers and are targeted using crab pots and baited lines.

The native rock oyster, Pacific oyster and mussels, particularly the green-lipped mussel, support important fisheries on intertidal rocky substrates. In southern areas, the dredge oyster occupies this habitat. Scallops support very important dive and dredge fisheries in many coastal areas, harbours and embayments, especially on the north east coast from North Cape to Tauranga and around the Marlborough/Nelson area.

Kina, paua and rock lobster support significant dive fisheries, though rock lobsters are also taken by potting. Diving for paua is restricted to breath-hold diving. Although paua occur in all areas of New Zealand, legal-sized paua are less commonly encountered in northern waters. In response to this, the minimum legal size limit for paua for the Taranaki area has been reduced from 125 mm to 85 mm.

Amateur fishers take only small quantities of seaweeds for food. Most amateur take involves the taking of beach-cast material to provide fertiliser for home gardens. Collection generally coincides with areas where there is reasonable vehicle access and regular deposition of beach-cast material, particularly after storm events.

Amateur interest in other species, like sea cucumber and common shrimps, is expected to broaden as people become more familiar with such species and the New Zealand demographic changes.

Commercial Fisheries

New Zealand's extensive coastline supports a diverse range of commercial shellfish fisheries. Reef-based fisheries include rock lobster, paua, kina and mussels. Cockle and pipi fisheries are primarily found in sheltered areas like the Otago, Whangarei and Ohiwa harbours and Mair Bank. Further off

the coasts are fisheries for scallops, queen scallops, dredge oysters and paddle crabs. Exposed beaches support a small tuatua fishery (Kaipara Harbour) and a developing fishery for surf clams (for example, the east coasts of the North and South Islands). Other shellfish fisheries with development potential include geoduck (deepwater clam) and sea cucumber.

Over 600 seaweed species are found in New Zealand waters. Established fisheries for seaweed include a generic beach-cast seaweed fishery and small fisheries for *Pterocladia* spp. (comb weed), *Macrocystis pyrifera* (bladder kelp)¹⁸ and *Porphyra* spp. (karengo). Commercial harvesters of beach-cast seaweed are subject to the Fisheries (Beach Cast Area Prohibition) Notice 2009, which identifies coastal areas closed to commercial harvest.

Most commercial shellfish fisheries (24 species and 201 individual stocks) are managed within the QMS. Species not subject to the QMS are either managed as open access fisheries or are subject to a permit moratorium (Schedule 4C).

Commercial Profile

The New Zealand Seafood Industry Council (SeaFIC) represents the New Zealand commercial fishing industry at all levels. SeaFIC is an industry owned company with its shares held by Commercial Stakeholder Organisations (CSOs). CSOs currently represent rights-holders of inshore fisheries at the level of a particular management area or group of stocks. The structure of the CSO network is currently being reconsidered by SeaFIC.

The NZ Rock Lobster Industry Council is the main/overarching agency representing the interests of New Zealand's nine regional rock lobster fisheries CSOs. The Paua Industry Council is the national umbrella for the five regional CSOs representing commercial paua interests. Other CSOs for shellfish include:

- > Bluff Oyster Management Company Ltd
- > Challenger Dredge Oyster Management Company Ltd
- > Challenger Scallop Enhancement Company Ltd
- > Clam Stakeholders Association
- > Coromandel Scallop Fisherman's Association
- > CRA2 Rock Lobster Company
- > Kina Industry Council
- > Northland Scallop Enhancement Company, and
- > Queen Scallop Fishery Stakeholders Group.

Companies or organisations with large quota ownership in inshore shellfish stocks include Te Ohu Kai Moana Trustee Limited, Sanford Limited, Aotearoa Fisheries Limited, Sealord Limited, Talley's Fisheries Limited and Ngai Tahu Fisheries Limited. Some individuals also hold large parcels of shellfish quota.

¹⁸ On 1 October 2010, attached bladder kelp (*Macrocystis pyrifera*) in Fisheries Management Areas 3 and 4 (KBB3G and KBB4G) became (*sic*) the first seaweed species to enter the QMS.

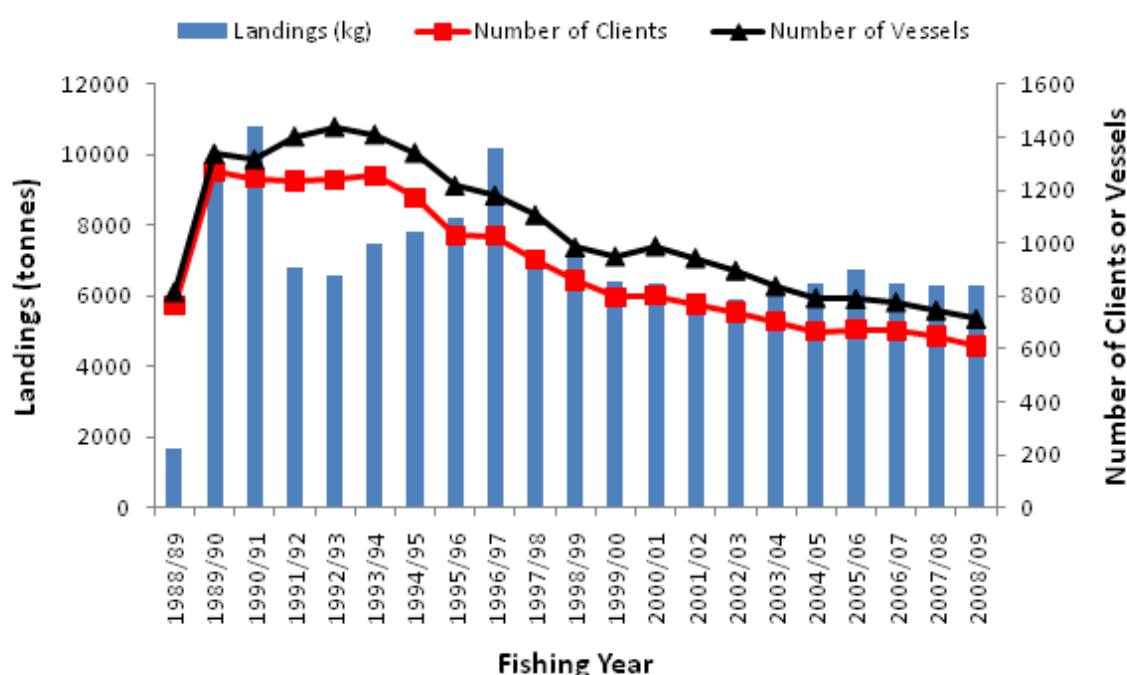
Many shellfish and seaweeds are commercially harvested from shore or from tenders. Larger vessels are employed for the rock lobster, oyster, scallop and queen scallop fisheries. Main commercial methods for shellfish harvesting are potting (for rock lobster and paddle crab), dredging (for scallops and dredge oysters), body dredging (for cockles) and hand-gathering by free-diving (for paua and kina). The use of underwater breathing apparatus (UBA) is prohibited for commercial fishing, with the exception of the geoduck, which is subject to specific requirements.

Commercial Utilisation and Value

Commercial fishers must land and report all QMS stocks taken (with a few exceptions). Reported commercial information provides data on commercial catch effort (ie, targeted, estimated weight of the species caught, location and method) and commercial landings (ie, landed fish stock, measured weight and processed state).

The trends in cumulative landings of QMS shellfish stocks, number of clients and number of registered vessels used to harvest shellfish since 1988/89 shows a fluctuating trend in landings and a rationalisation in the numbers of clients and vessels (Figure 1). Since 2002/03 shellfish landings have remained relatively stable.

Figure 1. Cumulative landings (all shellfish stocks combined) and number of clients or vessels in the shellfish fishery from the 1988/89 to 2008/09 fishing year. Landings are shown as October fishing years (1 October – 30 September), although approximately half the shellfish stocks operate under an April fishing year (1 April – 30 March).

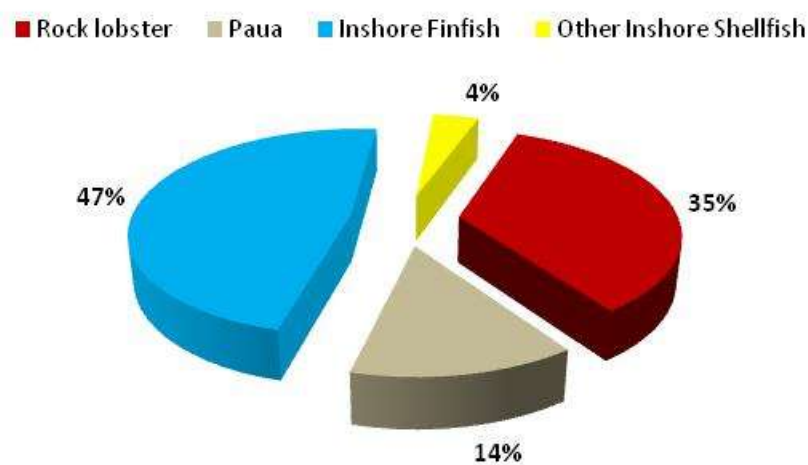


The capital worth of shellfish stocks (ie, the value of the fishing quota asset) can be estimated using quota trades. The 'Fish Monetary Stock Account' produced annually by Statistics New Zealand presents a time series of the asset value of New Zealand's commercial fish resource, based on the value of quota trades (and in some cases Annual Catch Entitlement trades) managed under the QMS.

The total asset value for inshore shellfish QMS stocks is \$1162.9 million (for the year ending September 2009). This is 28.9% of the total calculated asset value of New Zealand's commercial fish resource (which is \$4017 million) and approximately 53% of the total calculated asset value of New Zealand's inshore fisheries (shellfish and finfish combined, which is \$2220 million, Figure 2).

Of the top 20 fish species by asset value, three are inshore shellfish species (i.e. rock lobster, paua and dredge oysters). Rock lobster is the second most valuable commercial QMS species and has an asset value of \$771 million, followed by paua with an asset value of \$304 million and dredge oysters with an asset value of \$36.5 million.

Figure 2. Proportion of total asset value for inshore fisheries for rock lobster, paua and other inshore shellfish in comparison to inshore finfish for the 2008-09 fishing year ending September 2009.



The asset value estimate provides a useful indicator to assess trends in economic value of shellfish quota, as quota value represents the net present value of future earnings (Figure 3). Asset value of the inshore shellfish fisheries experienced a steep increase between 1995/96 and 2002/03. This was associated with the introduction of stocks into the QMS. Since 2002/03, asset value has been relatively stable, with a slight increase in the 2008/09 fishing year.

From 1996 to 2009 the asset value of rock lobster increased by 110% and contributed 19% of the total commercial fisheries asset value in 2009 (Figure 4). Paua has seen a gradual increase in asset value and in 2009 had increased 113% of the 1996 value. Dredge oysters are a new entry to the top 20 species by asset value in 2009, contributing 1% of the total asset value of New Zealand's commercial fisheries. In 2009, the asset value of dredge oysters was \$37 million, an 859% increase from the 1997 value of \$4 million.

Figure 3. Asset value of shellfish species managed under the QMS compared to cumulative landings over time. Note: About half of the shellfish stocks have a 1 October to 30 September fishing year, but the rest operate with a fishing year ending in March (1 April to March 30). All shellfish stocks with a year ending in any given calendar year are counted towards that year's total.

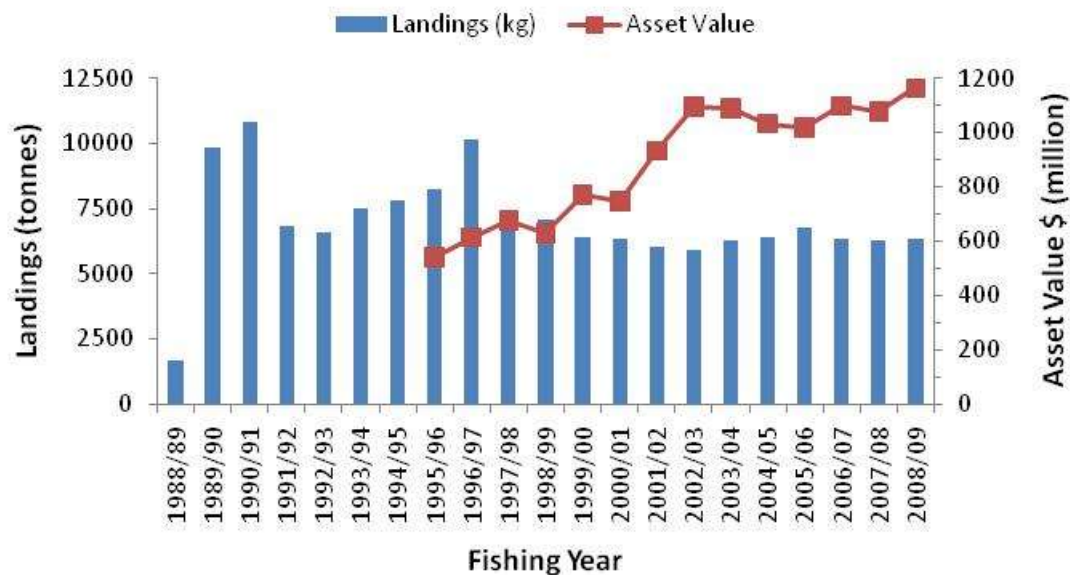
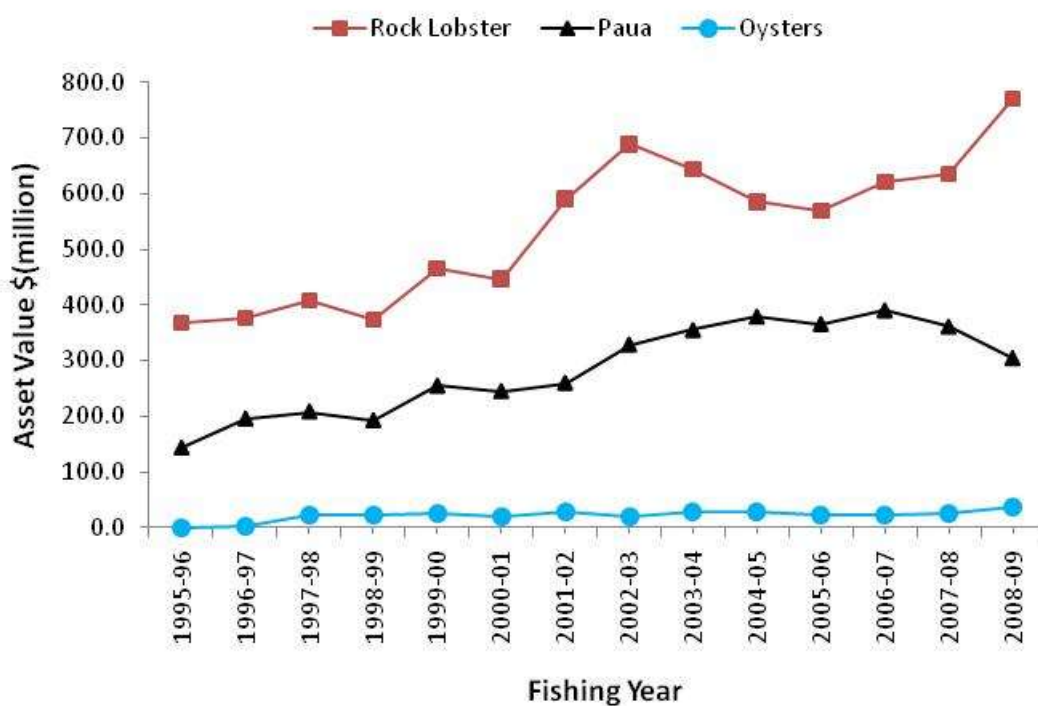


Figure 4. Asset value of rock lobster, paua and dredge oysters over time (Source: Fish Monetary Stock Account: 1996 – 2009. Statistics New Zealand).



Although a significant proportion of shellfish sales are to export markets (for example, rock lobster), the domestic market is also important for inshore shellfish harvesters. For some species, such as kina, dredge oysters and scallops, the domestic market is larger than the international market.

Environmental Values

Environmental value can be described as the value derived from non-extractive use of the marine environment and the ecosystem value of shellfish and seaweed resources.

Shellfish contribute to ecosystem food webs and interact with other organisms. Some shellfish (for example, horse mussels) protrude above the seafloor and modify the structure and community composition of the surrounding seabed habitat. They provide three-dimensional structures that act as shelter and refuge for invertebrates and fish and substrata for settlement of sponges and soft corals. Smaller invertebrates such as worms, shellfish and small crustaceans also utilise the interstitial spaces commonly found in shellfish beds. These organisms contribute to important ecological processes like bioturbation and nutrient cycling.

Filter-feeding shellfish (for example, tuatua, cockle and pipi) play an important role in stabilising sandy beaches and banks by reducing the transport of finer sediment material. They also assist in maintaining water quality through their filter-feeding activities. A reduction in the abundance of these shellfish may affect associated and/or dependent species and the surrounding physical environment, particularly if localised depletion of discrete populations occurs.

Seaweeds are structurally important components of the aquatic environment. They play a vital role in the ecology of the aquatic ecosystems giving structure and complexity. They provide substrate, food and shelter to many marine organisms and contribute to the nutrient cycling of both beaches and the surrounding coastal waters. Seaweeds are critical for the recruitment, dispersal and protection of many commercially important fisheries such as rock lobster, paua and mussel spat. Many important finfish (for example, butterfish and moki) and shellfish (for example, kina and paua) species associate with reef areas that predominate with large kelp forests. However, the interactions and associations between seaweeds and higher-order species are not well understood.

Free-floating seaweeds also play an important role in the recruitment and dispersal of other organisms. Beach-cast seaweeds provide habitat and food for a diverse ecology of marine and terrestrial organisms, as well as being key sources of nutrient cycling within the aquatic environment. It is estimated that up to 25% of the annual kelp production may become beach-cast and, when not removed from the beach environment, this material can play an important role in coastal ecosystems.

Environmental Effects of Fishing

Environmental effects of shellfish harvesting are most commonly defined as benthic impacts (ie, impacts on the fauna and flora attached to or living on the seafloor). There are a range of harvesting methods for shellfish and the method employed sometimes depends on the sector doing the harvesting (ie, customary, amateur or commercial). Method restrictions in fisheries regulations and/or the habitat type of the targeted species may limit the potential methods that could be used.

Our knowledge of the relative vulnerability of different seabed types to disturbance from shellfish harvesting is sparse, but available data suggest that the most vulnerable communities will be those dominated by corals and sponges (for example) or other long-lived species, which are adapted to low levels of physical disturbance.

Recovery rates of disturbed seabeds are poorly known, but the regeneration time of damaged corals and other erect fauna on deep reefs may be decades or centuries, whereas benthic communities associated with mobile sandy sediments in the surf zone are likely to recover rapidly (for example, hours to months).

Effects of Potting and Hand-gathering

Potting for paddle crab, octopus and knobbed whelk is a highly targeted method used to harvest these species and the benthic affects are considered to be very small.

There are a number of different hand-gathering methods to harvest shellfish. Shore-based or intertidal hand-gathering are regularly used in areas where the shellfish species are exposed at low-tide. This type of harvesting can range from true hand-gathering (ie, no implements) to the use of a body dredge where a cutting bar passes underneath the shellfish (for example, cockles) and removes it from the substrate.

In the sub-tidal, the use of UBA or one-breath diving is more commonly used to harvest other shellfish (for example, horse mussel, kina, sea cucumber and scallops). The hand-gathering method used is dependent upon the fishing regulations applicable to the sector and/or species and/or area where harvest is occurring.

In general, hand-gathering methods for shellfish are considered to have a low impact on the seabed. The methods usually target individual shellfish and cause little disturbance to the seabed and surrounding marine environment. However, any harvesting method, including hand-gathering can lead to localised depletion for sedentary species like shellfish. This is where large amounts of a species are taken out of a small area. Although localised depletion may not cause a sustainability issue for a stock, over-harvesting in some areas can reduce local reproductive potential and abundance.

Nearly all commercial and non-commercial seaweed harvesting is undertaken by hand-gathering methods only (ie, picking, raking and scooping of beach-cast seaweeds). There is some cutting of attached bladder kelp off the south east coast of the South Island and the Chatham Islands. There have been some mechanical harvesting trials for attached bladder kelp in Akaroa Harbour (South east coast of the South Island).

As collection of seaweeds is largely targeted, impacts on the substrate alone are considered small. There are potential adverse effects from harvesting beach-cast, free-floating and/or attached seaweeds if harvest is not managed appropriately. They include:

- > enabling the settling and spreading of invasive seaweeds (for example, *Undaria* sp.)
- > changing the local food web structure and impact on biodiversity,
- > negatively impacting on species that use seaweed (for example, kelp forests) for food and shelter,

- > modifying water flow,
- > removal of beach-building material that prevents erosion, and
- > reducing the amount of nutrients available in the inshore and coastal areas.

Effects of Dredging

Sub-tidal dredges, known as bottom dredges, are most commonly used for fishing scallops or dredge oysters. Bottom dredges come into contact with the seabed and, if heavy enough, leave troughs through soft sediment and dislodge harder material. Bottom dredges can modify the structure and stability of seafloor habitats, reduce biodiversity and, in turn, harm bottom dwelling organisms.

Hydraulic dredging is most commonly used for the harvest of surf clams and its impact is not discernable a few hours after dredging. The surf zone, where surf clams are found, is a high-energy environment subjected to frequent natural disturbance and high sand mobility. This environment tends to recover faster from disturbance than those in deeper water. However, widespread and intensive hydraulic dredging does have the potential to adversely modify the environment.

Effects of Fishing on Protected Species

Protected species are afforded specific protection under New Zealand law or by obligations arising from international agreements. Protected species include all marine mammals and reptiles, most seabirds, some sharks, black and red corals, and spotted black grouper.

Commercial fishers are required to report the accidental or incidental killing or injuring of protected species. Fishery observers are also used to collect independent information on commercial fishery interactions with protected species. In the inshore shellfish fisheries dredging may interact with protected species like black and red corals, whereas marine mammals such as whales occasionally get caught in the lines of potting fisheries.

Habitats of Particular Significance to Fisheries Management

Habitats of particular significance for fisheries management of shellfish include:

- > shellfish spawning areas,
- > areas of high biodiversity, and
- > areas of habitat important to:
 - particular life-cycle phases or
 - the food-web of harvested shellfish and seaweed species, and
 - associated or dependent species that use seaweed beds for food and shelter.

Various regional fisheries regulations provide for the protection of habitats of particular significance for inshore fisheries management through-out New Zealand. For example, dredging prohibitions in some harbours and bays, and harvesting restrictions around important islands.

Non-Fishing Activities that Affect Shellfish and Seaweed Environments

A key issue for the management of inshore shellfish is the effect of land-based activities on aquatic ecosystems, including the species themselves and their habitats. Sediments and nutrients washed from the land enter streams and rivers, and find their way into coastal locations. Agriculture and land disturbance activities, such as forestry, are significant contributors to sediment and nutrient loads in rivers, streams and coastal environments. Sediment loads are greatest during storm events when increased soil saturation and runoff causes slips, increased sediment runoff, and erosion of stream and river banks.

Effects of Sedimentation

Sediment loads directly affect shellfish and seaweed by smothering, making sediments anoxic, clogging shellfish gills, increasing physiological energy demands and increasing physical stress. Indirect effects include changes to the bottom sediment structure. Changes to sediment structure may make areas unsuitable for larval settlement, reduce the availability of biogenic habitats critical for key life stages, and reduce collections of prey. Studies have found that sediment deposits as little as 7 mm can reduce individual and species abundances by 50%.

Sediment effects are often more significant for sessile animals (for example, filter-feeding bivalves). Cockles, pipi, tuatua and scallops are especially vulnerable because sedimentation interrupts their feeding and respiration systems. Species typical of upper harbour environments tend to be more sediment tolerant (at least with short term exposure) compared to species in open coastal areas.

The long terms effects of sedimentation on shellfish include increased mortality and reduced growth rates or reproductive potential. Increased sedimentation may also modify local species compositions (favouring species that are more sediment tolerant) and reduce biodiversity.

Effects of Eutrophication and Pollution

Eutrophication occurs when a water body receives excess nutrients that results in excessive plant and algae growth, and increased phytoplankton production. A modest increase in nutrients can increase growth rates of shellfish, echinoderms and other seaweed. However, too much nutrients eventually reduces the amount of light and oxygen available, and anoxic conditions, in the marine environment. This can cause changes in the number and types of species in an area, reduced biodiversity and create “dead” zones.

Many areas of the coast are unsuitable for harvesting shellfish due to pollution from land. This is an important constraint on shellfish harvesting by all sectors. Filter-feeding shellfish may only be harvested from growing waters approved by the NZ Food Safety Authority.

Activities that can increase sediment and nutrients input into waterways are managed under the Resource Management Act 1991 (the RMA). The Ministry does not have a direct role with the RMA, but, can influence management through the policy and planning regime under the RMA. To do so the Ministry must have sufficient knowledge and understanding of the habitats of importance for fisheries management. The Ministry must also understand the pathways these effects have on the marine ecosystem, fisheries and their habitats.

Compliance Overview

The compliance requirements for shellfish stocks are highly variable. Shellfish stocks range from low commercial value stocks, such as pipi and cockle, to high commercial value stocks, such as paua and rock lobster. The accessibility of many shellfish stocks coupled with their value, increases the potential for illegal activity. Compliance with the requirements of the fisheries legislation is a key issue for ensuring the sustainability of shellfish resources.

Risk	Opportunity and Incentive	Prevalence
Misreporting (area, quantity, weight)	Operators work across QMAs. High incentive to maximise ACE for highly values species. CRA size limit concessions can increase incentives to misreport.	Believed to be relatively common for CRA and PAU. Low for lesser value species. Currently no issues with seaweeds.
Dumping or high grading	Many shellfish stocks are listed on the Sixth Schedule, so return of fish in accordance with conditions legal.	Low. Harvesting method for most species has a high level of specificity. Many species on the Sixth Schedule, which provides for fish to be returned to the sea. May be an issue for by-catch stocks, e.g. paddle crabs. Currently no issues with seaweeds.
Poaching and black market	Many shellfish stocks are easily accessible. Strong incentive for high value stocks (for example, PAU and CRA).	Very common for high value species. Currently no issues with seaweeds.
Illegal gear, methods and area	Few restrictions on commercial fishing methods. Some stocks have area restrictions.	Low. Generally good compliance. Currently no issues with seaweeds.
Amateur offences	Shellfish stocks highly accessible. No reporting requirements.	Size limit and daily bag limit offences common. High levels of compliance with season restrictions. Currently no issues with seaweeds.
Customary offences	Compliance with permit conditions. Compliance with reporting requirements needs attention.	Occasional for shellfish. Currently no issues with seaweeds.

Annex 1. Shellfish and seaweed species managed under the QMS.

Species	Species Code	Fishing Year	Quota Management Area	Enter QMS	Schedule listings
Bladder kelp	KBB	October	KBB3G, KBB4G	2010	Sixth Schedule
Cockle	COC	October	COC1A,COC7A,COC7B	2002	Sixth Schedule
			COC3	2003	
			COC1B,COC1C,COC2,COC3B, COC4,COC5,COC7C,COC8,COC9	2005	
Deepwater clam	PZL	October	PZL1,PZL2,PZL3,PZL4,PZL5, PZL7,PZL8,PZL9	2006	
Deepwater tuatua	PDO	April	PDO1,PDO2,PDO3,PDO4,PDO5, PDO7, PDO8,PDO9	2004	Sixth Schedule
Friiled venus shell	BYA	April	BYA1,BYA2,BYA3,BYA4,BYA5, BYA7,BYA8, BYA9	2004	Sixth Schedule
Green-lipped mussel	GLM	October	GLM1,GLM2,GLM3,GLM7A, GLM7B,GLM8,GLM9	2004	Third Schedule: GLM7A, GLM9
					Sixth Schedule
Horse mussel	HOR	April	HOR1,HOR2,HOR3,HOR4,HOR5, HOR6,HOR7,HOR8,HOR9	2004	
Kina	SUR	October	SUR3,SUR4,SUR5,SUR7A	2002	
			SUR1A,SUR1B,SUR2A,SUR2B, SUR8,SUR9	2003	
Knobbed whelk	KWH	October	KWH1,KWH2,KWH3,KWH4, KWH5,KWH6,KWH7A,KWH7B, KWH8,KWH9	2006	Sixth Schedule
Large trough shell	MMI	April	MMI1,MMI2,MMI3MMI4,MMI5, MMI7,MMI8,MMI9	2004	Sixth Schedule
Oysters dredge	OYS	October	OYS7	1996	Sixth Schedule
			OYS1,OYS2A,OYS3,OYS4,OYS5A, OYS7A,OYS7B,OYS7C,OYS8A,OYS9	2005	
(Foveaux Strait)	OYU	October	OYU5	1998	
Paddle crab	PAD	October	PAD1,PAD2,PAD3,PAD4,PAD5, PAD6,PAD7,PAD8,PAD9	2002	Sixth Schedule
Paua	PAU	October	PAU1,PAU2,PAU3,PAU4,PAU5A, PAU5B,PAU5D,PAU6,PAU7	1987	
Pipi	PPI	October	PPI1A	2004	Sixth Schedule
			PPI1B,PPI1C,PPI2,PPI3,PPI4,PPI5, PPI7,PPI8,PPI9	2005	
Queen scallop	QSC	October	QSC3	2002	Sixth Schedule
Ringed Dosinia	DAN	April	DAN1,DAN2,DAN3,DAN4,DAN5, DAN7,DAN8,DAN9	2004	Sixth Schedule
Rock lobster, spiny (red)	CRA	April	CRA1,CRA2,CRA3,CRA4,CRA5, CRA6,CRA7,CRA8,CRA9	1990	Sixth Schedule

Species	Species Code	Fishing Year	Quota Management Area	Enter QMS	Schedule listings
Rock lobster, Packhorse	PHC	April	PHC1	1990	
Scallop	SCA	April	SCA7	1992	Second Schedule: all QMAs other than SCA7
			SCA1	1997	
			SCAC5	2002	Third Schedule: Southern scallop fishery
			SCA4	2003	
			SCA1A,SCA2A,SCA3,SCA5,SCA7A,SCA7B,SCA7C,SCA8A,SCA9A	2005	Sixth Schedule
Sea cucumber	SCC	April	SCC1A,SCC1B,SCC2A,SCC2B,SCC3,SCC4,SCC5A,SCC5B,SCC6,SCC7A,SCC7D,SCC8,SCC9	2004	Sixth Schedule
Silky Dosinia	DSU	April	DSU1,DSU2,DSU3,DSU4,DSU5,DSU7,DSU8,DSU9	2004	Sixth Schedule
Triangle shell	SAE	April	SAE1,SAE2,SAE3,SAE4,SAE5,SAE7,SAE8,SAE9	2004	Sixth Schedule
Trough shell	MDI	April	MDI1,MDI2,MDI3,MDI4,MDI5,MDI7,MDI8,MDI9	2004	Sixth Schedule
Tuatua	TUA	October	TUA1A,TUA1B,TUA2,TUA3,TUA4,TUA5,TUA7,TUA8,TUA9	2005	

Annex 2. Schedule 4C: Shellfish and seaweed stocks and species subject to section 93 permit moratorium

Species	Fisheries Management Area
Invertebrates:	
black mussel (<i>Xenostrobus pulex</i>)	1 to 10
blue mussel (<i>Mytilus galloprovincialis</i>)	1 to 10
catseye (<i>Turbo smaragdus</i>)	1 to 10
crabs-members of the Family Grapsidae, namely:	1 to 10
common rock crab (<i>Hemigrapsus edwardsi</i>)	
hairy-handed crab (<i>Hemigrapsus crenulatus</i>)	
northern smooth shore crab (<i>Cyclograpsus insularum</i>)	
purple rock crab (<i>Leptograpsus variegatus</i>)	
red rock crab (<i>Plagusia chabrus</i>)	
smooth shore crab (<i>Cyclograpsus lavauxi</i>)	
tunnelling mud crab (<i>Helice crassa</i>)	
limpets (<i>Cellana ornata</i> , <i>Cellana radians</i> , <i>Notoacmea scopulina</i>)	1 to 10
mudsnail (<i>Amphibola crenata</i>)	1 to 10
sea anemone (<i>Actinia</i> spp.)	8
sponges (<i>Phylum Porifera</i>)	1 to 10
topshells - members of the Family Trochidae, namely:	1 to 10
<i>Melagraphia aethiops</i>	
<i>Diloma zelandica</i>	
<i>Diloma arida</i>	
<i>Diloma subrostrata</i>	
<i>Diloma bicanaliculata</i>	
whelks (<i>Thais orbita</i> , <i>Lepsiella scobina scobina</i> , <i>Haustrum haustorium</i> , <i>Cominella adspersa</i> , <i>Cominella maculosa</i> , <i>Cominella glandiformis</i> , <i>Penion dilatatus</i> , <i>Struthiolaria papulosa</i>)	1 to 10
Seaweeds:	
agar weed (<i>Pterocladia lucida</i> , <i>Pterocladia capillacea</i>)	1 to 10
bladder kelp (<i>Macrocystis pyrifera</i>)	1,2, 5-10
brown kelp (<i>Ecklonia radiata</i>)	1 to 10
bull kelp (<i>Durvillea</i> spp.)	1 to 10
gracilaria weed (<i>Gracilaria chilensis</i>)	1 to 10
lessonia (<i>Lessonia variegata</i>)	1 to 10
porphyra (<i>Porphyra</i> spp.)	1 to 10

Appendix 2. Fisheries Planning for Wild NZ Fisheries

