



# Annual Review of Inshore Shellfish Fisheries

2010/11



New Zealand Government

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### Publisher

Inshore Fisheries Management Team  
Ministry of Agriculture and Forestry  
PO Box 2526  
Pastoral House, 25 The Terrace  
Wellington 6140

[www.maf.govt.nz](http://www.maf.govt.nz)

Telephone: 0800 008 333

Facsimile: +64 4 894 0300

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## National Snapshot: Inshore Shellfish Fisheries 2010/11

The Government's long-term goal for fisheries is "*New Zealanders maximising benefits from the use of fisheries within environmental limits*". To support this goal, the Ministry has set out management objectives for all inshore shellfish fisheries in the Draft National Fisheries Plan for Inshore Shellfish (the Shellfish Plan). Performance measures<sup>1</sup> are used to monitor progress towards meeting the management objectives and to guide management activity. The following is a summary performance report for 2010/11.

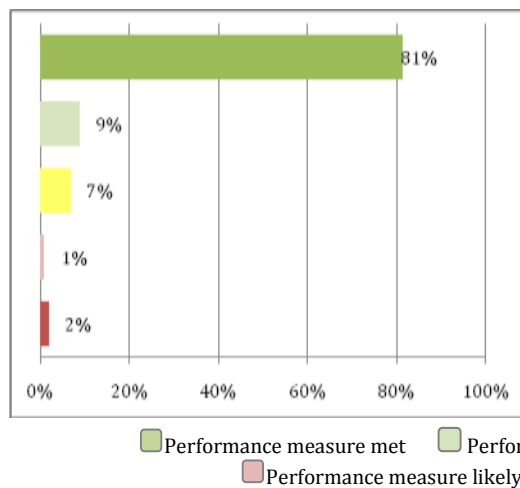
### Health of Our Inshore Shellfish Fisheries

#### Healthy Inshore Shellfish Stocks

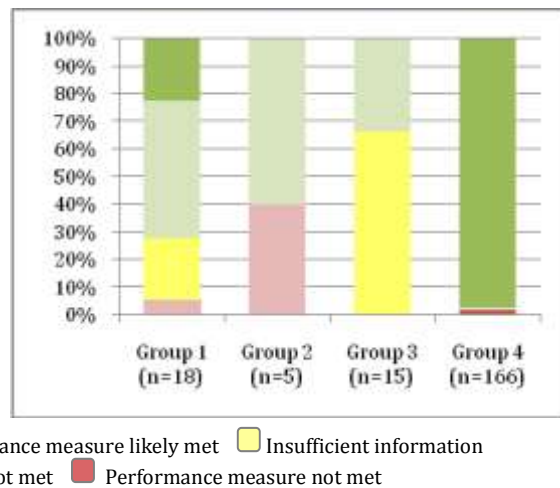
Fishstocks must be healthy if they are to support high-quality fisheries. New Zealand fishstocks are considered healthy when their biomass (stock size) is at or above the level that would produce the maximum sustainable yield. It is not possible or cost effective to estimate biomasses for all stocks therefore a range of best available information is used to indicate stock health.

Figures 1 and 2 summarise stock performance against the stock sustainability performance measures set out in the Shellfish Plan<sup>1</sup>. Performance measures vary by stock group.<sup>2</sup> Stock groups generally reflect different levels of desirability and biological vulnerability, and different levels of available information on stock health.

**Figure 1. Percentage of QMS shellfish stocks meeting stock sustainability performance measures**



**Figure 2. Percentage of QMS stocks meeting stock sustainability performance measures by Group (number of stocks in group)**



Six stocks (PAU 7, PAD 1, SCA 1, SCA 7, SUR 7B, SUR 9) are rated as performance measure not met or likely not met. For PAD 1, SUR 7B and SUR 9 the stock health indicators are of low quality and can be "triggered" by factors not related to stock health. The stock health indicators for PAU 7, SCA 1 and SCA 7 are uncertain. Further investigation of fishery and research information will occur in 2011/12 to determine whether and/or what management

<sup>1</sup> Refer Appendix 1 for a description of the performance measures used in this document.

<sup>2</sup> Refer Section 2 for stock groupings.

action is required. Work will also continue to improve information where current information is insufficient to assess stock health.

### ***Healthy Inshore Shellfish Environments***

A healthy aquatic environment provides the basis for healthy fisheries. Habitats important to shellfish fisheries can be negatively affected by a range of factors, including some fishing methods, pollution, sedimentation, sand mining, and nutrient run-off.

Information to consistently identify and monitor habitats important to shellfish is not yet available. Work is being undertaken in 2011/2012 to support identification of such habitats. Where appropriate, some habitats known to be important to shellfish have already been protected from fishing activity. The Ministry is also working to grow strong peer networks with other agencies responsible for coastal management to facilitate information sharing on the management of non-fishing activities on shellfish.

### **Benefits Realised from Inshore Shellfish Fisheries**

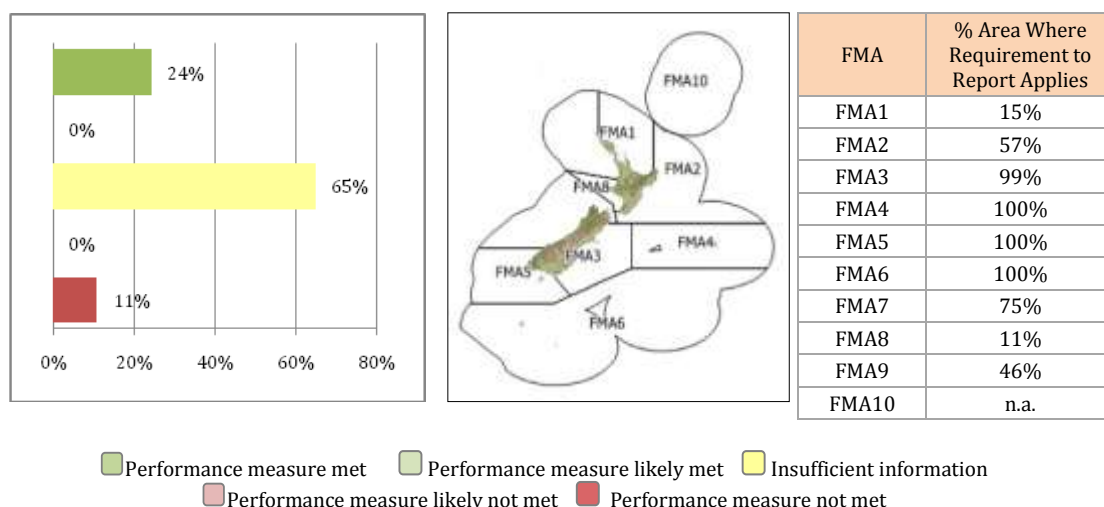
Fisheries resources provide economic, social, cultural and intrinsic benefits to New Zealand. At this time there is no accepted way of estimating a single benefit measure for fisheries, therefore benefits are monitored using the following available datasets:

- Customary Maori benefits - Fulfilment of customary Maori harvest authorisations
- Recreational sector benefits - Recreational participation rates
- Commercial sector benefits - Quota share value
- Intrinsic benefits - Stock health indicators (refer to the previous section).

### ***Customary Maori Benefits***

Shellfish are an important traditional food source for many iwi, hapu and whānau. Tangata whenua also have special relationships with taonga fish species and places of customary food gathering importance. Trends in fulfilment of customary Maori authorisations (Figure 3) provide an indication of whether customary fishing needs are being met.

**Figure 3. Trends in fulfilment levels by stock, and area of application of customary reporting requirement**



As reflected in the figures above, data is insufficient in many fisheries to assess trends in fulfilment because the requirement to report customary catch is not yet in place nationwide. Where customary reporting is in place, data quality varies. A key focus for future work is extending the customary reporting coverage and improving data quality. Discussions with iwi about stocks where the data suggests fulfilment rates are declining will inform decisions about whether and what management action is required.

### ***Recreational Sector Benefits***

Recreational fishing is one of New Zealand's most popular recreational activities. A Sport and Recreation survey from 2007/8 indicates approximately 725,000 New Zealanders participate in marine and saltwater fishing (including harvesting shellfish) at least once per year. This level of participation makes marine fishing the seventh most popular recreational activity.

No direct information on the benefits realised from recreational fishing is available at this time. Therefore, recreational fishing participation rates are used as a proxy for benefit; an increase in participation may indicate more recreational benefits are being realised and vice versa.

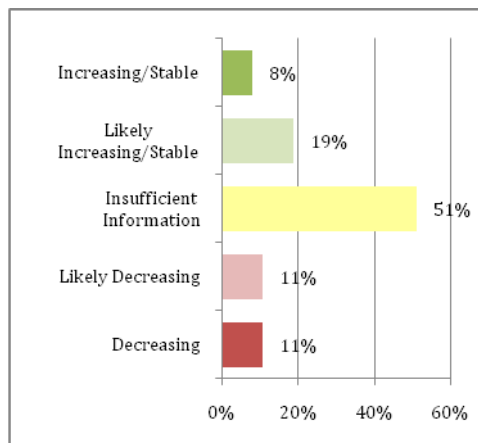
General and stock-specific participation information is available in a number of surveys; however, the information is either highly uncertain or not directly comparable and therefore no trend information is available at this time. There is a general impression that participation levels have increased during the last decade. Work is currently underway to improve the quality of recreational fishing information, and the Ministry is in the process of conducting a large scale-multi species survey of recreational catch.

### ***Commercial Sector Benefits***

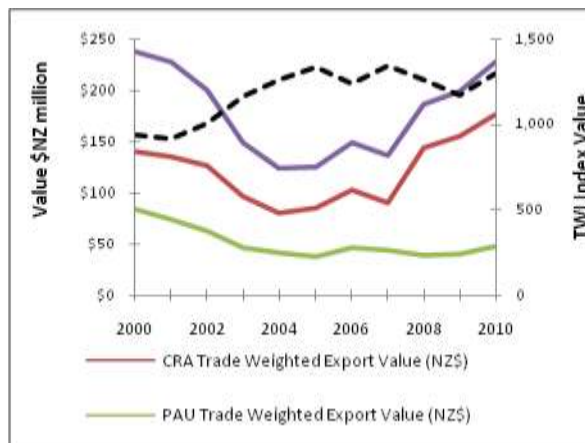
The price paid for shellfish quota shares gives a market-based estimate of commercial benefit. The total quota share value of shellfish fisheries in 2009<sup>3</sup> was \$1,135 million. This compares to \$1,014 million in 2005.

The two most commercially valuable shellfish species are rock lobster and paua. The total value of rock lobster quota increased from \$584 to \$770 million between 2005 and 2009. Paua quota value dropped from \$378 to \$304 million over the same period.

**Figure 4. Trends in Quota Value of Shellfish Stocks**



**Figure 5. Export Earnings (\$) and TWI**



<sup>3</sup> This information will be updated as new information becomes available in 2012.

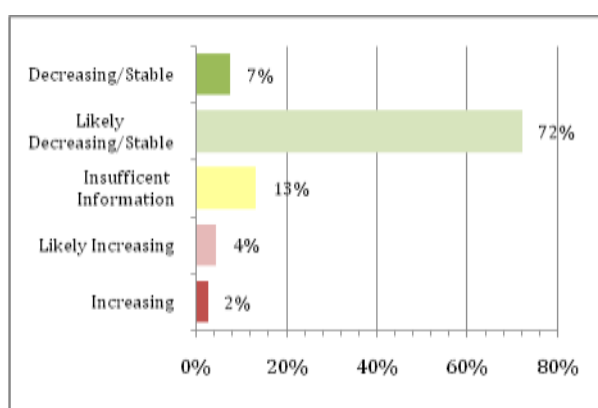


Key drivers of the changes in quota share value (Figure 4) have been the price paid on the export market and the value of the NZ dollar, which is represented by the Trade Weighted Index (TWI) (Figure 5). Key management focus areas are reducing illegal fishing, scanning and removing regulations that unnecessarily constrain benefits, supporting industry value-add initiatives, and facilitating sustainable development.

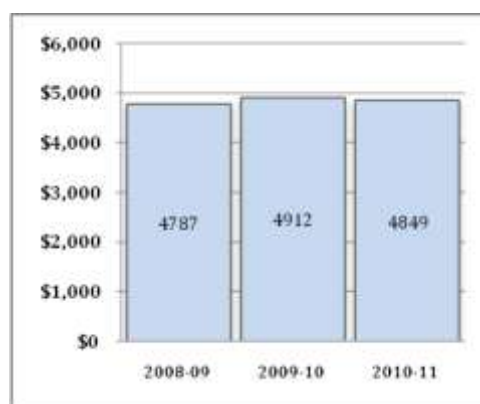
### ***Management Costs***

High management costs can reduce overall benefits to fishers. It is not possible to estimate total management costs for each shellfish stock. However, costs recovered from annual catch entitlement (ACE) holders are available. Total costs recovered for the past three years, as well as trends in recovered costs relative to the value of ACE, are illustrated in Figures 6 and 7.

**Figure 6. Trends in costs recovered relative to value of Annual Catch Entitlement**



**Figure 7. Total costs recovered for shellfish management (\$000)**



The management costs associated with stocks that have increasing costs relative to ACE value will be reviewed to determine whether the costs are appropriate and beneficial.

## **Environmental Effects of Fishing**

Fishing methods can adversely affect the environment through adverse impacts with the benthos or protected species or by reducing biodiversity.

### ***Benthic Impacts***

Most shellfish are taken by hand-gathering, diving or potting. These methods are considered to have few adverse effects on the benthos. Dredging is used to gather some shellfish species found on soft sediments. The nature and permanency of dredging effects on these environments is not well understood. Further research is scheduled for 2012 to establish more clearly the impacts of dredging and other methods that interact with the benthos.

The size of the “dredging footprint” is not known. Overall dredge fishing effort declined over the period 2007-2011 but the correlation between dredging effort and dredging footprint is unknown.

### ***Protected Species Interactions***

Shellfish harvesting methods result in relatively few interactions with protected species – marine mammals and birds. Large marine mammals occasionally become entangled in, but are

usually released alive from, potting gear. Other information suggests some shags may occasionally become trapped by potting gear.

### ***Biodiversity***

Determining risks to biodiversity arising from individual inshore shellfish fisheries is difficult. The Ministry is working on developing a network of Marine Protected Areas that are representative of New Zealand's marine habitats and ecosystems.



## 1. Introduction

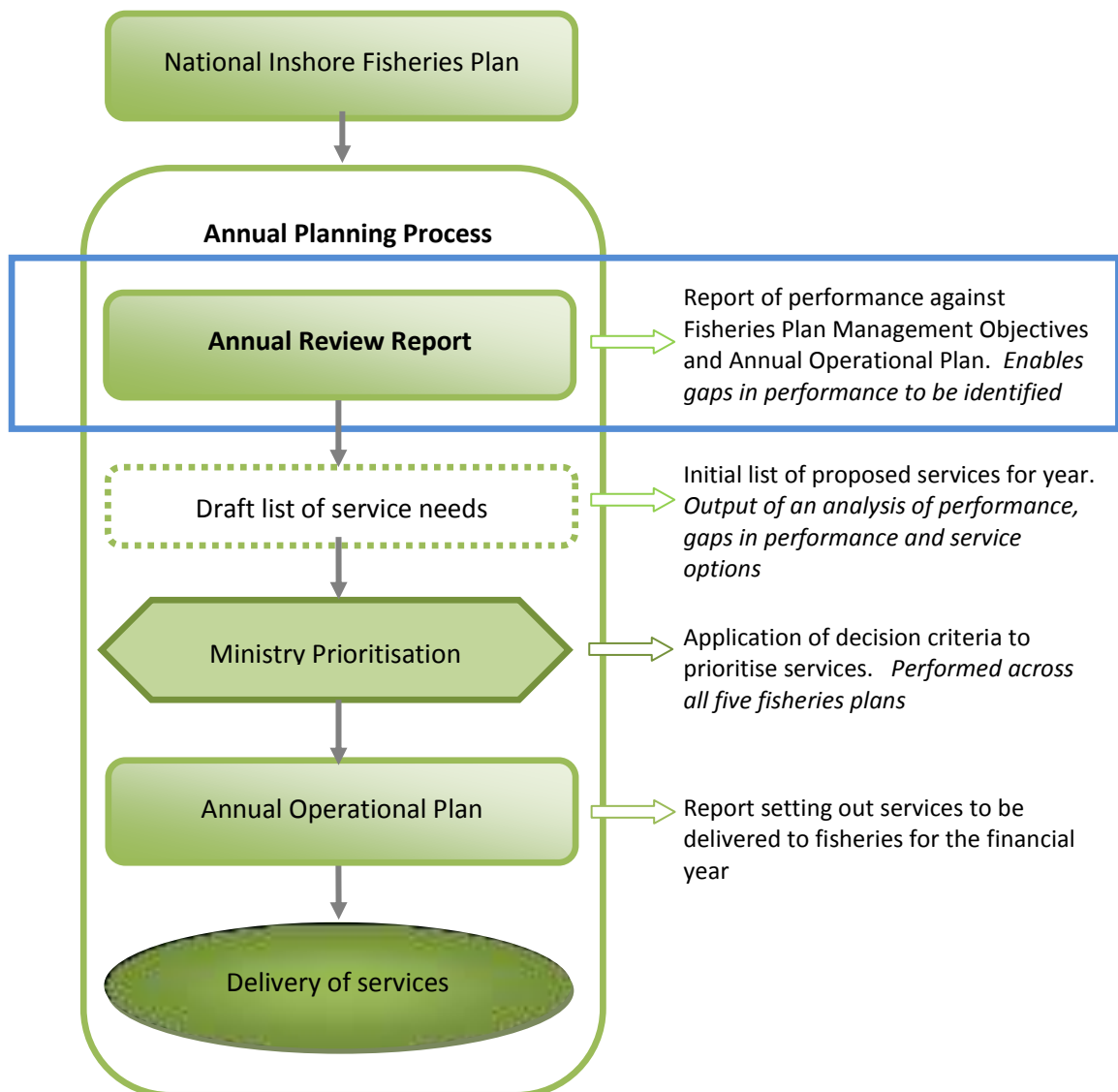
### 1.1 Purpose

This Annual Review Report presents performance information relating to fisheries managed under the National Fisheries Plan for Inshore Shellfish (the Shellfish Plan) up to the end of the 2010/11 fishing year. The information is used to monitor performance against the management objectives set out in the Shellfish Plan and to plan fisheries management activities in the next financial year. The information in this Annual Review Report will inform the development of the 2012/13 Annual Operational Plan.

### 1.2 Context

The Shellfish Plan provides the overarching framework for management of New Zealand's inshore shellfish fisheries and is implemented through an annual planning and service delivery cycle (refer to Figure 8).

**Figure 8. Annual Planning and Service Delivery Cycle**



The Shellfish Plan drives the annual cycle by establishing the management objectives for inshore shellfish fisheries. The annual cycle begins with an Annual Review Report, which reports performance on:

1. the status of shellfish fisheries relative to the performance measures set out in the Shellfish Plan (and any associated stock-specific performance measures)
2. delivery of management actions and services specified in the previous year's Annual Operational Plan (*Note: This Annual Review Report only contains (1) above as the Annual Operational Plan for 2011/12, the first one under this planning model, is currently being implemented.*)

Annual Review Report information is analysed and discussed with tangata whenua and stakeholders to determine what, if any, management actions and services are required to address any gaps in performance indicated, or to maintain or enhance performance in the fisheries. Potential management actions and services are captured in a draft Annual Operational Plan.

The demand for the Ministry's management services is frequently greater than can be delivered. An internal prioritisation process across draft Annual Operational Plans from the five National Fisheries Plans (Deepwater, Highly Migratory, Inshore Finfish, Inshore Shellfish, and Freshwater) seeks to address competing interests. Discussions with tangata whenua and stakeholders also provide opportunities to identify where these groups can provide needed or desired services.

### 1.3 Structure

The Annual Review Report is set out in the following sections:

**Chapter 2: Measuring Performance**

Describes the stock groups' management objectives and performance measures established by the Plan.

**Chapter 3: Assessment**

Reports on the assessment against the performance measures at the stock level. This section is organised by Fisheries Management Areas (FMAs) and cover the stocks that align with, or cover a portion of, an FMA.

**Chapter 4: Performance of the Annual Operational Plan**

In future years, this section will examine delivery of specified management actions and services.

**Appendix: Appendix 1 - Performance Measures**

Provides a detailed description of the methodology used to assess stocks against the performance measures.

## 2. Measuring Performance

### 2.1 Stock Groups

This Annual Review Report provides information on the performance of each stock against the performance measures set out in the Shellfish Plan.

The Shellfish Plan groups stocks to facilitate multi-stock objective-setting and service delivery and performance measures are established at the group level. The stock groups are as follows:

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

## 2.2 Performance Measures

The Management Objectives, followed by the associated Performance Measures, for each stock group are set out in the table below.

<b>Group 1</b>	
<b>USE OBJECTIVE:</b>	Maximise the overall social, economic, and cultural benefit obtained from each stock.
<ol style="list-style-type: none"> <li>Trends in: <ul style="list-style-type: none"> <li>fulfilment of customary permits</li> <li>amateur participation rates</li> <li>real quota value, and</li> <li>overall benefits, where these can be determined cost effectively</li> </ul> are stable or increasing. </li> <li>Rolling 5-yr average Cost Recovery Levies (CRL)/Annual Catch Entitlement (ACE) value is not increasing.</li> </ol>	
<b>ENVIRONMENT OBJECTIVE (Stock Sustainability):</b>	Maintain biomass of each stock at or above $B_{MSY}$ (or accepted proxy).
3. Stock size is at or above the established target biomass with at least 50% probability	

<b>Group 2</b>	
<b>USE OBJECTIVE:</b>	Maximise social, economic and cultural benefits obtained from each stock by enabling annual yield to be maximised.
<ol style="list-style-type: none"> <li>Trends in: <ul style="list-style-type: none"> <li>fulfilment of customary permits</li> <li>amateur participation rates</li> <li>real quota value, and</li> </ul> are stable or increasing. </li> <li>Rolling 5-yr average CRL/ACE value is not increasing.</li> </ol>	
<b>ENVIRONMENT OBJECTIVE (Stock Sustainability):</b>	<b>Maintain stock size at or above an established minimum reference level.</b>
3. Stock size is at or above the established minimum reference level with at least 50% probability.	

**Group 3**

<b>USE OBJECTIVE:</b>	Secure social, cultural and economic benefits from each stock.
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1. Trends in:
  - fulfilment of customary permits
  - amateur participation rates
  - real quota value, and
 are stable or increasing.
2. Rolling 5-yr average CRL/ACE value is not increasing.

<b>ENVIRONMENT OBJECTIVE (Stock Sustainability):</b>	Maintain stock size at or above target reference level.
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3. Stock size is at or above an established target reference level with at least a 50% probability.

**Group 4**

<b>USE OBJECTIVE:</b>	Enable utilisation of each stock.
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1. Rolling 5-yr average Cost Recovery Levies (CRL)/Annual Catch Entitlement (ACE) value is not increasing.

<b>ENVIRONMENT OBJECTIVE (Stock Sustainability):</b>	Ensure catch is at a level that is sustainable.
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2. Catch is stable or fluctuates without trend.

**Group 5**

<b>USE OBJECTIVE:</b>	Enable utilisation of each stock.
-----------------------	-----------------------------------

1. Management costs are stable or decreasing

<b>ENVIRONMENT OBJECTIVE (Stock Sustainability):</b>	Ensure catch is at a level that is sustainable.
--	---

2. Catch is stable or fluctuates without trend
3. Catch does not exceed or fluctuate beyond the QMS Introduction Process Standard thresholds.

<b>All Groups</b>	
<b>ENVIRONMENT OBJECTIVE</b> (Stock Sustainability):	Protect, maintain and enhance habitats of significance for fisheries management.
<b>ENVIRONMENT OBJECTIVE</b> (Effects of Fishing):	Minimise adverse effects of fishing on the aquatic environment, including on biological diversity.
<ol style="list-style-type: none"> <li>1. Policy objectives for habitats of significance for fisheries management are met.</li> <li>2. Where there are no policy objectives, fishing effects on identified habitats of significance for fisheries management are not increasing.</li> <li>3. Relevant resource management policy and planning documents include objectives, policies, and rules that protect habitats of significance for fisheries management.</li> </ol>	
<ol style="list-style-type: none"> <li>4. Policy objectives for managing fishing effects on the aquatic environment and biodiversity are met.</li> <li>5. Where there are no policy objectives, interactions with the benthos and protected species are not increasing.</li> </ol>	






The datasets and approaches used to assess each stock against the performance measure are described in Appendix 1.

### 3. Assessment

#### 3.1 Assessment against performance measures

The stock-level performance assessments are set out in the following tables. Stocks are organised first by Fisheries Management Area to facilitate engagement with tangata whenua and stakeholders, and secondly by stock group.

The assessments are brief summaries. A symbol has been used to indicate performance relative to the performance measure and, where useful, a brief description is provided. The key purpose of this section is to support discussion with stakeholders on priority stocks for management action. The Ministry expects to improve the quality of performance measures and analyses over time.

Symbol	Description
	Performance measure met. <i>Information directly relevant to the performance measure is available and confirms the performance measure is met.</i>
	Likely performance measure met. <i>Information directly relevant to the performance measure is not available but other information indicates the performance measure is likely to be met.</i>
	Insufficient data. <i>Available information is insufficient to make an assessment relative to the performance measure.</i>
	Unlikely performance measure met. <i>Information directly relevant to the performance measure is not available but other information indicates performance is unlikely to be met.</i>
	Performance measure not met. <i>Information directly relevant to the performance measure is available and confirms the performance measure is not being met.</i>





### 3.2 FMA 1 AUCKLAND EAST FISHERY MANAGEMENT AREA

FMA 1 includes the area from the eastern most point of the North Cape west to the eastern border of Cape Runaway.













Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
1	<b>CRA1 (Rock lobster)</b>	<input checked="" type="checkbox"/> 23.03%, Increase in quota value	<input type="checkbox"/> Insufficient data to inform a trend	<input type="checkbox"/> Insufficient information, lack of customary regulation coverage to inform a trend	<input checked="" type="checkbox"/> Stable	<input checked="" type="checkbox"/> Stock size was above the target biomass level in 2002. Catch per unit effort (CPUE) increased after 2002 to the highest observed level in 2008, but has since dropped from peak. The stock is assumed to still be above the target biomass.	<input type="checkbox"/> Habitats of significance for shellfish fisheries have not yet been determined	<input checked="" type="checkbox"/> Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species.
	<b>CRA2 (Rock lobster)</b>	<input checked="" type="checkbox"/> 12.9%, Increase in quota value	<input type="checkbox"/> Insufficient data to inform a trend	<input type="checkbox"/> Insufficient information, lack of customary regulation coverage to inform a trend	<input checked="" type="checkbox"/> Stable	<input type="checkbox"/> Stock size was above the target biomass level in 2002. CPUE increased from 2002-07 but has since decreased. CPUE in 2010 was the lowest since the late 1980s. It is unknown if the stock is still above the target biomass.		
	<b>PAU1 (Paua)</b>	<input type="checkbox"/> Insufficient information to complete analysis	<input type="checkbox"/> Insufficient data to inform a trend	<input type="checkbox"/> Insufficient information, lack of customary regulation coverage to inform a trend	<input checked="" type="checkbox"/> No ACE prices reported for some years but trend in CRL/tonne has remained stable	<input type="checkbox"/> No target biomass has been established. There is insufficient information to assess stock performance.		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
2	SCA CS (Scallops)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage to inform a trend	✓ No ACE prices reported for some years but average CRL/tonne has decreased	✓ No minimum reference level has been established. However, Current annual yield (CAY) estimates suggest performance measure is likely to be met.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species.
	SCA1 (Scallops)	? Insufficient information to complete evaluation	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage to inform a trend	✓ Average ACE CRL/tonne is stable but no CRL values are reported	✗ No minimum reference level has been established. However, CAY estimates suggest a decrease in the biomass from previously high levels in 2005 and 2006. Catch in the last two years has been lowest on record.		
3	COC1A (Cockles)	? Insufficient information to complete evaluation	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage to inform a trend	✓ Stable	✓ No target reference level has been established. However, CAY estimates suggest performance measure is likely to be met. Commercial catch trends likely to be due to market/ water quality issues.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species.
	COC1B (Cockles)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage to inform a trend	? No ACE prices or CRL values reported to inform a trend	? No target reference level has been established. There is insufficient information to assess stock performance		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
3	<b>COC1C (Cockles)</b>	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage to inform a trend	✓ No ACE prices reported for some years but CRL/tonne has remained stable	? No target reference level has been established. There is insufficient information to assess	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species.
	<b>GLM1 (Green-lipped mussels)</b>	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage to inform a trend	✓ No ACE prices reported for some years but CRL/tonne has remained stable	? No target reference level has been established. There is insufficient information to assess		
	<b>OYS1 (Dredge Oysters)</b>	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage to inform a trend	✓ No ACE prices reported for some years but average CRL/tonne has remained stable	? No target reference level has been established. There is insufficient information to assess stock performance		
	<b>PPI1A (Pipi)</b>	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage to inform a trend	✗ No ACE prices reported for some years but average CRL/tonne has increased	✓ No target reference level has been established. However, the 2005 biomass and simple yield estimates suggest that the performance measure is likely to be met.		





Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
3	PPI1B (Pipi)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage	? No ACE prices or CRL values reported	? No target reference level has been established. There is insufficient information to assess.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species.
	PPI1C (Pipi)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage	✓ No ACE prices reported but CRL/tonne is stable	? No target reference level has been established. There is insufficient information to assess.		
	SUR1A (Kina)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage	✓ No ACE prices reported for some years but CRL/tonne has remained stable	? No target reference level has been established. There is insufficient information to assess.		
	SUR1B (Kina)	✗ -12.08% decrease in quota value	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage	✓ No ACE prices reported for some years but CRL/tonne has remained stable	? No target reference level has been established. There is insufficient information to assess.		
	TUA1A (Tuatua)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage	? No ACE prices or CRL values reported	? No target reference level has been established. There is insufficient information to assess.		





Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
3	TUA1B (Tuatua)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	? Insufficient information, lack of customary regulation coverage	? No ACE prices or CRL values reported	? No target reference level has been established. There is insufficient information to assess.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species.
4	BYA1 (Fried Venus Shell Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species actions with protected species
	DAN1 (Ringed Dosinia Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 7 tonne TACC		
	DSU1 (Silky Dosinia Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC		
	HOR1 (Horse Mussel)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ Catch is stable (less than 300kg in 2010/11), 4 tonne TACC		

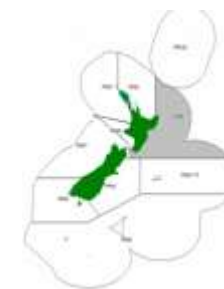
Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	KWH1 (Knobbed Whelk)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable (less than 500kg in 2010/11), 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species actions with protected species
	MDI1 (Trough Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC		
	MMI1 (Large Trough Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 2 tonne TACC		
	PAD1 (Paddle Crab)	-	-	-	 CRL/ACE is stable	 Catch has fluctuated (2006/07-2009/10). ~17% net decline in catch		
	PDO1 (Deepwater Tuatua)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	PHC1 (Packhorse Rock Lobster)	-	-	-	✗ ACE price information is not available for the 2010-11 fishing year to enable calculation of ratio for both of the five year periods 2005-10 and 2006-11, but average CRL/tonne has increased	✓ Catch is stable. Between 80-90% of TACC caught in last 4 years.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species actions with protected species
	PZL1 (Deepwater King Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1.2 tonne TACC		
	SAE1 (Triangle Shell Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 9 tonne TACC		
	SCA1A (Scallop)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has decreased	✓ Catch is stable, 40 tonne TACC		
	SCC1A (Sea Cucumber)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ Catch is stable, 2 tonne TACC		



Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	SCC1B (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch has fluctuated without trend. Catch is below the 2 tonne TACC.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 1 over the period. As have reported interactions with protected species actions with protected species













Group	Stock	Management costs are stable or decreasing	Catch does not exceed or fluctuate beyond the levels in the QMS Introduction Standard
5	OCT1 (Octopus)	 Levies are stable	 Species has triggered the 20 tonne threshold
	TOH1 (Toheroa)	 Research costs are fluctuating	 No catch, 0 tonne TACC



























### 3.3 FMA 2 CENTRAL FISHERY MANAGEMENT AREA













FMA 2 includes the area south of Titahi Bay, at the coordinates 41°06'S, 174°50'E, around the Wellington and Kapiti coastline, and north to the western border of Cape Runaway.

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
1	<b>CRA3 (Rock Lobster)</b>	<input checked="" type="checkbox"/> 20.31% Increase in quota value	<input type="checkbox"/> Insufficient data to inform a trend	<input type="checkbox"/> Insufficient information, lack of customary regulation coverage inform a trend	<input checked="" type="checkbox"/> Stable	<input checked="" type="checkbox"/> Stock size was below the target biomass level in 2008. However, standardised CPUE (a reliable indicator of relative stock size in CRA 3) has increased since 2008, with a 59% increase in 2011. This information suggests the stock could now be above the target level.	<input type="checkbox"/> Habitats of significance for shellfish fisheries have not yet been determined	<input checked="" type="checkbox"/> Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 2 over the period. As have reported interactions with protected species.
	<b>CRA4 (Rock Lobster)</b>	<input checked="" type="checkbox"/> 33.44%, Increase in quota value	<input type="checkbox"/> Insufficient data to inform a trend	<input type="checkbox"/> Insufficient information, lack of customary regulation coverage inform a trend	<input checked="" type="checkbox"/> Stable	<input checked="" type="checkbox"/> Stock size is well above the target biomass level		
	<b>PAU2 (Paua)</b>	<input type="checkbox"/> -13.10% decrease in quota value, estimated values used	<input type="checkbox"/> Insufficient data to inform a trend	<input type="checkbox"/> Insufficient information, lack of customary regulation coverage inform a trend	<input checked="" type="checkbox"/> Stable	<input checked="" type="checkbox"/> No target biomass has been established. However, standardised CPUE increased between 1992 and the most recent assessment 2007.		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	BYA2 (Frieded Venus Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 2 over the period. As have reported interactions with protected species.
	COC2 (Cockles)	-	-	-	 No ACE prices or CRL values reported	 No catch, 0 tonne TACC		
	DAN2 (Ringed Dosinia Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch. TACC increased from 18 tonnes to 61 tonnes in 2010/11.		
	DSU2 (Silky Dosinia Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC		
	GLM2 (Green-lipped Mussels)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 10 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	<b>HOR2</b> (Horse Mussel)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 2 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 2 over the period. As have reported interactions with protected species.
	<b>KWH2</b> (Knobbed Whelk)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 1 tonne TACC		
	<b>MDI2</b> (Large Trough Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch. TACC increased from 1 tonne to 63 tonnes in 2010/11		
	<b>MMI2</b> (Trough Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 3 tonne TACC		
	<b>OYS2A</b> (Dredge Oysters)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	<b>PAD2</b> (Paddle Crab)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch has fluctuated without trend. Catches were between 8 and 19% of TACC for past 4 years. TACC of 110 tonnes. Catches fluctuating due to market reasons.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 2 over the period. As have reported interactions with protected species.
	<b>PDO2</b> (Deepwater Tuatua)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch. TACC increased from 5 tonnes to 466 tonnes in 2010/11.		
	<b>PPI2</b> (Pipi)	-	-	-	 No ACE prices or CRL values reported	 No catch, 0 tonne TACC		
	<b>PZL2</b> (King Clam)	-	-	--	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1.2 tonne TACC		
	<b>SAE2</b> (Triangle Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch. TACC increased from 1 tonne to 125 tonnes in 2010/11.		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	SCA2A (Scallops)	-	-	-	 No ACE prices reported for some years but CRL/tonne has decreased	 No catch, 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 2 over the period. As have reported interactions with protected species.
	SCC2A (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 2 tonne TACC		
	SCC2B (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 5 tonne TACC		
	SUR2A (Kina)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch has fluctuated without trend. 80 tonne TACC.		
	SUR2B (Kina)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable. 30 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	TUA2 (Tuatua)	-	-	-	? No ACE prices or CRL values reported	✓ No catch, 0 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 2 over the period. As have reported interactions with protected species.

Group	Stock	Management costs are stable or decreasing	Catch does not exceed or fluctuate beyond the levels in the QMS Introduction Standard
5	OCT2 (Octopus)	✓ Levies are stable	✗ Species has triggered the 20 tonne threshold
	TOH2 (Toheroa)	✗ Research costs are fluctuating	✓ No catch, 0 tonne TACC































### 3.4 FMA 3 SOUTHEAST FISHERY MANAGEMENT AREA















FMA 3 includes the area south of the mouth of the Clarence River to the northern border of Slope Point





Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
1	<b>CRA5 (Rock Lobster)</b>	✓ 22.45% increase in quota value (estimated values used)	? Insufficient data to inform a trend	✗ Decreasing the last three years	✓ Stable	✓ Stock size was well above the target biomass level in 2010. CPUE dropped 10% in 2010 from 2009.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 3 over the period. As have reported interactions with protected species.
	<b>CRA7 (Rock Lobster)</b>	✓ 10.24%, Increase in quota value (estimated values used)	? Insufficient data to inform a trend	✓ Increasing trend	✗ ACE price information unavailable for the 2005-06 fishing year to enable calculation of ratio for periods 2005-10 and 2006-11. But CRL/tonne trend is increasing	✓ Stock size was above the target biomass level in 2006. CPUE has declined by 65% from 2008 to 2010, and the stock is considered to be fluctuating around the target biomass level.		
	<b>PAU3 (Paua)</b>	✗ -10.34% decrease in quota value	? Insufficient data to inform a trend	✓ Small decrease within designated threshold	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No target biomass has been established. However, standardised CPUE increased between 1992 and 2000 and has since remained fairly stable.		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
3	<b>COC3 (Cockles)</b>	? Insufficient information to complete analysis	? Insufficient data to inform a trend	✓ Increasing trend	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No target reference level has been established. However, CAY estimates suggest performance measure is likely to be met. Commercial catch trends likely to be due to market/ water quality issues.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 3 over the period. As have reported interactions with protected species.
	<b>PDO3 (Deepwater Tuatua)</b>	? Insufficient information to complete analysis	? Insufficient data to inform a trend	✓ No reports	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No target reference level has been established. However, relatively low levels of commercial exploitation relative to biomass estimates suggest performance measure likely to be met.		
4	<b>BYA3 (Fried Venus Shell Surf Clam)</b>	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No reported catch, 1 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 3 over the period. As have reported interactions with protected species.
	<b>COC3B (Cockles)</b>	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch 1 tonne TACC		
	<b>DAN3 (Ringed Dosinia Surf Clam)</b>	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ Catch is stable. TACC was increased in 2010/11 from 4 tonnes to 52 tonnes.		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	<b>DSU3</b> (Silky Dosinia Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 3 over the period. As have reported interactions with protected species.
	<b>GLM3</b> (Green-lipped mussels)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Nominal catch, 10 tonne TACC		
	<b>HOR3</b> (Horse Mussel)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No reported catch, 2 tonne TACC		
	<b>KBB3G</b> (Attached bladder kelp)	-	-	-	 Insufficient information to inform a trend. The stock entered the QMS in October 2010	 Catch is stable. Stock entered QMS in October 2010. 1236.8 tonne TACC		
	<b>KWH3</b> (Knobbed Whelk)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 3 tonne TACC (bycatch to trawling)		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	MDI3 (Large Trough Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable. 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 3 over the period. As have reported interactions with protected species.
	MMI3 (Trough Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch has decreased by more than the 20% threshold in the last two years. However, this was due to water quality issues resulting from the Christchurch earthquake.		
	OYS3 (Dredge Oysters)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 2 tonne TACC		
	PAD3 (Paddle Crab)	-	-	-	 CRL/ACE is stable	 Catch is increasing. TACC of 100 tonnes. Trend is in response to the developing nature of this fishery		
	PPI3 (Pipi)	-	-	-	 No ACE prices or CRL values reported.	 Catch is stable, 0 tonne TACC		
	PZL3 (King Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 1.2 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	QSC3 (Queen Scallop)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable. 380 tonne TACC.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 3 over the period. As have reported interactions with protected species.
	SAE3 (Triangle Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable. Small fluctuations in response to development of fishery.		
	SCA3 (Scallops)	-	-	-	 No ACE prices reported for some years but CRL/tonne has decreased	 No catch, 1 tonne TACC		
	SCC3 (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Low catch. 2 tonne TACC		
	SUR3 (Kina)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is fluctuating without trend. TACC of 21 tonnes.		
	TUA3 (Tuatua)	-	-	-	 No ACE prices or CRL values reported.	 No catch, 0 tonne TACC		

Group	Stock	Management costs are stable or decreasing	Catch does not exceed or fluctuate beyond the levels in the QMS Introduction Standard
5	OCT3 (Octopus)	 Levies are stable	 Species has triggered the 20 tonne threshold
	TOH3 (Toheroa)	 Research costs are fluctuating	 No catch, 0 tonne TACC



### 3.5 FMA 4 SOUTHEAST CHATHAM RISE













FMA 4 includes the Chatham Islands area.









Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
1	<b>PAU4 (Paua)</b>	✗ -11.16% decrease in quota, estimated values used	? Insufficient data to inform a trend	? Insufficient data to inform a trend. Only one year of the Kaimoana regulations	✓ Stable	✓ No target biomass has been established. However, CPUE is high compared to all other paua stocks	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 4 over the period. As have reported interactions with protected species.
	<b>CRA6 (Rock Lobster)</b>	✓ 9.82% increase in quota value	? Insufficient data to inform a trend	? Insufficient data to inform a trend. Only one year of the Kaimoana regulations	✓ Stable	? Stock size against the target biomass level is unknown. The stock was last assessed in 1996. Since 1997, CPUE has increased in two stages to levels higher than the early 1990s.		
4	<b>BYA4 (Fried Venus Shell Surf Clam)</b>	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 4 over the period. As have reported interactions with protected species







Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	COC4 (Cockles)	-	-	-	? No ACE prices or CRL reported	✓ No catch 1 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 4 over the period. As have reported interactions with protected species
	DAN4 (Ringed Dosinia Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch 1 tonne TACC		
	DSU4 (Silky Dosinia Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC		
	HOR4 (Horse Mussel)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC		
	KBB4G (Attached bladder kelp)	-	-	-	? Insufficient information to inform a trend. The stock entered the QMS in October 2010	✓ No catch. 272.8 tonne TACC. The stock entered the QMS in October 2010		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	KWH4 (Knobbed Whelk)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 6 tonne TACC	<input type="checkbox"/> Habitats of significance for shellfish fisheries have not yet been determined	<input checked="" type="checkbox"/> Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 4 over the period. As have reported interactions with protected species
	MDI4 (Large Trough Shell Surf Clam)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch. 1 tonne TACC		
	MMI4 (Trough Shell Surf Clam)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch. 1 tonne TACC		
	OYS4 (Dredge Oysters)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 15 tonne TACC.		
	PAD4 (Paddle Crab)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 25 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	PDO4 (Deepwater Tuatua)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1.1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 4 over the period. As have reported interactions with protected species
	PPI4 (Pipi)	-	-	-	 No ACE prices or CRL values reported	 No catch, 0 tonne TACC		
	PZL4 (Queen Scallop)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1.2 tonne TACC		
	SAE4 (Triangle Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC		
	SCA4 (Scallops)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 23 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	SCC4 (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 2 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 4 over the period. As have reported interactions with protected species
	SUR4 (Kina)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is fluctuating without trend. TACC of 225 tonnes.		
	TUA4 (Tuatua)	-	-	-	 No ACE prices or CRL values reported.	 No catch, 0 tonne TACC		



















Group	Stock	Management costs are stable or decreasing	Catch does not exceed or fluctuate beyond the levels in the QMS Introduction Standard
5	OCT4 (Octopus)	 Levies are stable	 Species has triggered the 20 tonne threshold
	TOH4 (Toheroa)	 Research costs are fluctuating	 No catch, 0 tonne TACC































### 3.6 FMA 5 SOUTHLAND FISHERY MANAGEMENT AREA

FMA 5 includes the area west of Slope Point, Fiordland and north to the southern border of Awarua Point.













Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
1	<b>CRA8 (Rock Lobster)</b>	<input checked="" type="checkbox"/> 22.69% increase in quota value, estimated values used	? Insufficient data to inform a trend	<input checked="" type="checkbox"/> Stable	<input checked="" type="checkbox"/> ACE price information is not available for the 2005-06 fishing year to enable calculation of the ratio for both of the five year periods 2005-10 and 2006-11, but CRL/tonne has remained stable	<input checked="" type="checkbox"/> Stock size was well above the target biomass level in 2006. CPUE increased between 2006 and 2009, but declined by 29% between 2009 and 2010. The stock is assumed to still be above the target biomass.	? Habitats of significance for shellfish fisheries have not yet been determined	<input checked="" type="checkbox"/> Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 5 over the period. As have reported interactions with protected species
	<b>OYU5 (Dredge Oysters)</b>	<input checked="" type="checkbox"/> 16.36% increase in quota value, estimated values used	? Insufficient data to inform a trend	<input checked="" type="checkbox"/> Small decrease within designated threshold	<input checked="" type="checkbox"/> Stable	<input checked="" type="checkbox"/> No target biomass has been established. Projections show stock size continuing to grow		
	<b>PAU5A (Paua)</b>	<input checked="" type="checkbox"/> -7.5% decrease in quota value	? Insufficient data to inform a trend	<input checked="" type="checkbox"/> Stable	<input checked="" type="checkbox"/> Stable	<input checked="" type="checkbox"/> No target biomass has been established. However, projections suggest >50% probability of stock increase over next 2 years if catch reduced in northern zone (in place)		





Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
1	PAU5B (Paua)	 -14.61% decrease in quota value	 Insufficient data to inform a trend	 Decreasing trend since 2007	 Stable	 No target biomass has been established. However, 2007 assessment suggested spawning biomass more likely to increase than decrease under current levels of catch. Recruited biomass showed a tendency to decrease. Both have been relatively stable in recent years	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 5 over the period. As have reported interactions with protected species
	PAU5D (Paua)	 -15.23%, decrease in quota value	 Insufficient data to inform a trend	 Stable	 CRL/ACE trend is increasing	 No target biomass has been established. However, standardised CPUE generally declined until the early 2000s followed by a steady increase until 2006, and then remained relatively stable to 2008.		
4	BYA5 (Fried Shell Venus Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 5 over the period. As have reported interactions with protected species
	COC5 (Cockles)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch 2 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	DAN5 (Ringed Dosinia)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 5 over the period. As have reported interactions with protected species
	DSU5 (Silky Dosinia Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC		
	HOR5 (Horse Mussel)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC		
	KWH5 (Knobbed Whelk)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 2 tonne TACC		
	MDI5 (Large Trough Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch. 14 tonne TACC		
	MMI5 (Trough Shell Surf Clam)		-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch. 1 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	OYS5A (Dredge Oysters)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 3 tonne TACC.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 5 over the period. As have reported interactions with protected species
	PAD5 (Paddle Crab)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 50 tonne TACC		
	PDO5 (Deepwater Tuatua)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1.0 tonne TACC		
	PPI5 (Pipi)	-	-	-	 No ACE prices or CRL values reported	 No catch, 0 tonne TACC		
	PZL5 (King Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1.2 tonne TACC		
	SAE5 (Triangle Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 3 tonne TACC		



Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	SCA5 (Scallops)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 5 over the period. As have reported interactions with protected species
	SCC5A (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 2 tonne TACC		
	SCC5B (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 2 tonne TACC		
	SUR5 (Kina)	-	-	-	 CRL/ACE trend is increasing	 Catch is fluctuating without trend. 455 tonne TACC		
	TUA5 (Tuatua)	-	-	-	 No ACE prices or CRL values reported	 No catch, 0 tonne TACC		

Group	Stock	Management costs are stable or decreasing	Catch does not exceed or fluctuate beyond the levels in the QMS Introduction Standard
5	OCT5 (Octopus)	 Levies are stable	 Species has triggered the 20 tonne threshold
	TOH5 (Toheroa)	 Research costs are fluctuating	 No catch, 0 tonne TACC



### 3.7 FMA 6 SUB-ANTARCTIC FISHERY MANAGEMENT AREA

FMA 6 includes the area south and east of FMAs 5 and 3, respectively, and extends out to the exclusive economic zone boundary.













Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	<b>HOR6</b> (Horse Mussel)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 0 tonne TACC	<input type="checkbox"/> Habitats of significance for shellfish fisheries have not yet been determined	<input checked="" type="checkbox"/> Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 6 over the period. As have reported interactions with protected species
	<b>KWH6</b> (Knobbed Whelk)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 2 tonne TACC		
	<b>PAD6</b> (Paddle Crab)	-	-	-	<input type="checkbox"/> No ACE prices or CRL values reported	<input checked="" type="checkbox"/> No catch, 0 Tonne TACC		
	<b>SCC6</b> (Sea Cucumber)	-	-	-	<input type="checkbox"/> No ACE prices or CRL values reported	<input checked="" type="checkbox"/> No catch, 0 tonne TACC		















### 3.8 FMA 7 CHALLENGER FISHERY MANAGEMENT AREA

FMA 7 includes the area north of Awarua Point, the West Coast of the South Island, Tasman and Marlborough, and east from Marlborough to the north of the Clarence River mouth.













Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
1	PAU7 (Paua)	✗ -8.0% decrease in quota value, estimated values	? Insufficient data to inform a trend	✗ Decreasing trend	✓ Stable	✗ No target biomass has been established. The recently completed 2012 stock assessment shows PAU 7 is below $B_{REF}$ . Stock projections suggest biomass will increase under current catch levels, but remain below $B_{REF}$ over the next three years.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 7 over the period. As have reported interactions with protected species
2	GLM7A (Green-lipped Mussel)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	✓ No reports	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No minimum reference level has been established. However, fluctuating stock abundance and low level of exploitation suggest performance measure is likely to be met.	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 7 over the period. As have reported interactions with protected species
	SCA7 (Scallops)	? Insufficient information to complete analysis	? Insufficient data to inform a trend	✗ Decreasing trend	✗ No ACE prices reported for some years but CRL/tonne trend is increasing	✗ No minimum reference level has been established. However, estimates of biomass suggest declines in biomass in Tasman and Golden Bay, stable in Marlborough Sounds.		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	BYA7 (Fried Venus Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No reported catch, 9 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 7 over the period. As have reported interactions with protected species
	COC7A (Cockles)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 1390 tonne TACC		
	COC7B (Cockles)	-	-	-	 No ACE prices or CRL values reported	 No catch 0 tonne TACC		
	COC7C (Cockles)	-	-	-	 No ACE prices or CRL values reported	 No catch 0 tonne TACC		
	DAN7 (Ringed Dosinia Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is fluctuating without trend. 15 tonne TACC. Trend is in response to the developing nature of this fishery		















Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	DSU7 (Silky Dosinia Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 1 tonne TACC, bycatch of surf clam dredging	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 7 over the period. As have reported interactions with protected species
	GLM7B (Green-lipped Mussel)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 10 tonne TACC		
	HOR7 (Horse Mussel)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 16 tonne TACC		
	KWH7A (Knobbed Whelk)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch has fluctuated without trend. 50 tonne TACC. Trend is in response to the developing nature of this fishery		
	KWH7B (Knobbed Whelk)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Nominal catch. 1 tonne TACC		





Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	MDI7 (Large Trough Shell Surf Clam)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> Catch has fluctuated without trend. 26 tonne TACC. Trend is in response to the developing nature of this fishery	<input type="checkbox"/> Habitats of significance for shellfish fisheries have not yet been determined	<input checked="" type="checkbox"/> Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 7 over the period. As have reported interactions with protected species
	MMI7 (Trough Shell Surf Clam)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> Catch has fluctuated without trend. 61 tonne TACC. Trend is in response to the developing nature of this fishery		
	OYS7 (Dredge Oysters)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> Catch has fluctuated without trend. 505 tonne TACC. Trend is related to SCA7 fishery		
	OYS7A (Dredge Oysters)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 1 tonne TACC		
	OYS7B (Dredge Oysters)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 1 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	OYS7C (Dredge Oysters)	-	-	-	✗ No ACE prices reported for some years but CRL/tonne trend is increasing	✓ Catch is stable. TACC recently increased from 43 to 63 tonnes	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 7 over the period. As have reported interactions with protected species
	PAD7 (Paddle Crab)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ Catch is stable. TACC of 100 tonnes		
	PAU6 (Paua)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne is decreasing	✓ Catch is stable, 1 tonne TACC		
	PDO7 (Deepwater Tuatua)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ Catch has fluctuated without trend. TACC of 50 tonnes. Developing fishery.		
	PPI7 (Pipi)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ Catch is stable, 1 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	PZL7 (King Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is fluctuating without trend, 23.1 tonne TACC. Developing fishery.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 7 over the period. As have reported interactions with protected species
	SAE7 (Triangle Shell Surf Clam)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is stable, 112 tonne TACC		
	SCA7A (Scallops)	-	-	-	 No ACE prices reported but CRL/tonne trend is increasing	 No catch, 1 tonne TACC		
	SCA7B (Scallops)	-	-	-	 No ACE prices reported but CRL/tonne trend is increasing	 No catch, 1 tonne TACC		
	SCA7C (Scallops)	-	-	-	 No ACE prices reported but CRL/tonne trend is increasing	 No catch, 1 tonne TACC		



Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	SCC7A (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch is fluctuating without trend and has exceeded the TACC twice in the past five years. TACC of 5 tonnes.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 7 over the period. As have reported interactions with protected species
	SCC7B (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Increasing catch levels, however, TACC <10 tonnes (5 tonne TACC).		
	SCC7D (Sea Cucumber)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 2 tonne TACC		
	SUR7A (Kina)	-	-	-	 CRL/ACE trend is increasing	 Catch is stable. TACC of 135 tonnes.		
	SUR7B (Kina)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 TACC of 10 tonnes. Catch has declined over three consecutive observations by ~58%. ~35% of TACC was caught in 09/10.		
	TUA7 (Tuatua)	-	-	-	 No ACE prices or CRL values reported.	 No catch, 0 tonne TACC		

Group	Stock	Management costs are stable or decreasing	Catch does not exceed or fluctuate beyond the levels in the QMS Introduction Standard
5	OCT7 (Octopus)	 Levies are stable	 Species has triggered the 20 tonne threshold
	TOH7 (Toheroa)	 Research costs are fluctuating	 No catch, 0 tonne TACC









### 3.9 FMA 8 CENTRAL FISHERY MANAGEMENT AREA





FMA 8 includes the area south of Tirua Point to a point north of Titahi Bay, at the coordinates of 41°06'S, 174°50'E

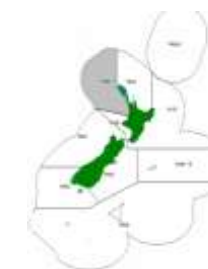
Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	BYA8 (Frilled Venus Shell Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 8 over the period. As have reported interactions with protected species
	COC8 (Cockles)	-	-	-	? No ACE prices or CRL values reported	✓ No catch, 0 tonne TACC		
	DAN8 (Ringed Dosinia Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 33tonne TACC		
	DSU8 (Silky Dosinia Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC		
	GLM8 (Green-lipped Mussel)	-	-	-	? No ACE prices or CRL values reported	✓ No catch, 0 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	<b>HOR8</b> (Horse Mussel)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 1 tonne TACC	<input type="checkbox"/> Habitats of significance for shellfish fisheries have not yet been determined	<input checked="" type="checkbox"/> Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 8 over the period. As have reported interactions with protected species
	<b>KWH8</b> (Knobbed Whelk)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 1 tonne TACC		
	<b>MDI8</b> (Large Trough Shell Surf Clam)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 27 tonne TACC		
	<b>MMI8</b> (Trough Shell Surf Clam)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 25 tonne TACC		
	<b>OYS8A</b> (Dredge Oysters)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 1 tonne TACC		
	<b>PAD8</b> (Paddle Crab)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> Catch is stable. 60 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	<b>PDO8</b> (Deepwater Tuatua)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 8 over the period. As have reported interactions with protected species
	<b>PPI8</b> (Pipi)	-	-	-	? No ACE prices or CRL values reported	✓ No catch, 0 tonne TACC		
	<b>PZL8</b> (King Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1.2 tonne TACC		
	<b>SAE8</b> (Triangle Shell Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 8 tonne TACC		
	<b>SCA8A</b> (Scallops)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne is decreasing	✓ No catch, 1 tonne TACC		
	<b>SCC8</b> (Sea Cucumber)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 2 tonne TACC		

Group	Stock	Trend in quota value	Trend in amateur participation	Trend in customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	<b>SUR8 (Kina)</b>	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 8 over the period. As have reported interactions with protected species
	<b>TUA8 (Tuatua)</b>	-	-	-	 No ACE prices or CRL values reported	 No catch, 0 tonne TACC		

Group	Stock	Management costs are stable or decreasing	Catch does not exceed or fluctuate beyond the levels in the QMS Introduction Standard
5	<b>OCT8 (Octopus)</b>	 Levies are stable	 Species has triggered the 20 tonne threshold
	<b>TOH8 (Toheroa)</b>	 Research costs are fluctuating	 No catch, 0 tonne TACC



### 3.10 FMA 9 AUCKLAND WEST FISHERY MANAGEMENT AREA

FMA 9 includes the area west from Cape Runway southwest to the northern border of Tirua Point







Group	Stock	Trend in Quota Value	Trend in amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
1	<b>CRA9 (Rock Lobster)</b>	 24.54% increase in quota value	 Insufficient data to inform a trend	 Insufficient information, lack of customary regulation coverage to inform a trend	 Stable	 Stock size against the target biomass level is unknown. No formal stock assessment has been done for CRA9. CPUE declined from 2006 to 2008 but has since increased.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 9 over the period. As have reported interactions with protected species
3	<b>GLM9 (Green-lipped Mussel)</b>	 Values missing for 09/10. Other values are estimated.	 Insufficient data to inform a trend	 Insufficient information, lack of customary regulation coverage to inform a trend	 No ACE prices reported for some years but CRL/tonne has increased	 No minimum reference level has been established. However, fluctuating stock abundance and characteristics of this spat fishery suggest performance measure is likely to be met.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 9 over the period. As have reported interactions with protected species
4	<b>BYA9 (Fried Venus Shell Surf Clam)</b>	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 1 tonne TACC	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 9 over the period. As have reported interactions with protected species





Group	Stock	Trend in Quota Value	Trend in amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	COC9 (Cockles)	-	-	-	? No ACE prices or CRL values reported	✓ No catch, 0 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 9 over the period. As have reported interactions with protected species
	DAN9 (Ringed Dosinia Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 33tonne TACC		
	DSU9 (Silky Dosinia Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC		
	HOR9 (Horse Mussel)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC		
	KWH9 (Knobbed Whelk)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1 tonne TACC		



Group	Stock	Trend in Quota Value	Trend in amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	MDI9 (Large Trough Shell Surf Clam)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 27 tonne TACC	<input type="checkbox"/> Habitats of significance for shellfish fisheries have not yet been determined	<input checked="" type="checkbox"/> Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 9 over the period. As have reported interactions with protected species
	MMI9 (Trough Shell Surf Clam)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 25 tonne TACC		
	OYS9 (Dredge Oysters)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 1 tonne TACC		
	PAD9 (Paddle Crab)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch 100 tonne TACC.		
	PDO9 (Deepwater Tuatua)	-	-	-	<input checked="" type="checkbox"/> No ACE prices reported for some years but CRL/tonne has remained stable	<input checked="" type="checkbox"/> No catch, 1 tonne TACC		

Group	Stock	Trend in Quota Value	Trend in amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	PPI9 (Pipi)	-	-	-	? No ACE prices or CRL values reported	✓ No catch, 0 tonne TACC	? Habitats of significance for shellfish fisheries have not yet been determined	✓ Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 9 over the period. As have reported interactions with protected species
	PZL9 (King Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 1.2 tonne TACC		
	SAE9 (Triangle Shell Surf Clam)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ No catch, 8 tonne TACC		
	SCA9A (Scallops)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne is decreasing	✓ No catch, 1 tonne TACC		
	SCC9 (Sea Cucumber)	-	-	-	✓ No ACE prices reported for some years but CRL/tonne has remained stable	✓ Catch is stable, 2 tonne TACC		

Group	Stock	Trend in Quota Value	Trend in amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment
4	SUR9 (Kina)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 Catch has declined 3 times in the last 4 years by more than 20%. 10 tonne TACC.	 Habitats of significance for shellfish fisheries have not yet been determined	 Policy objectives for managing fishing effects have not been determined. However benthic interactions have decreased in FMA 9 over the period. As have reported interactions with protected species
	TUA9 (Tuatua)	-	-	-	 No ACE prices reported for some years but CRL/tonne has remained stable	 No catch, 43 tonne TACC		

Group	Stock	Management costs are stable or decreasing	Catch does not exceed or fluctuate beyond the levels in the QMS Introduction Standard
5	OCT9 (Octopus)	 Levies are stable	 Species has triggered the 20 tonne threshold
	TOH9 (Toheroa)	 Research costs are fluctuating	 No catch, 0 tonne TACC

## 4. Performance of the Annual Operational Plan

The second purpose of the Annual Review Report is to examine delivery of the management actions and services against those specified in the Annual Operational Plan from the previous financial year.

The Annual Operational Plan sets out the stock, fishery and across-fishery Management Actions and Services to be provided in a given 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 to individual business groups.

The Annual Operational Plan also describes the 'maintenance' and 'core' Management Services to be undertaken for each stock or fishery. Completion of the management actions contributes to achievement of the management objectives, outcomes, and goals described in the Plan. Management Services describe the business group services (compliance, research, regulatory, etc) required to deliver the specified management actions.

The Annual Review Report evaluates the progress that has been made over the previous financial year on the delivery of management actions and services. It also identifies any stock needs, which will be subsequently addressed in the following year's Annual Operational Plan.

### 4.1 Delivery of Specified Management Actions

As this is the first year of operation, there is no Annual Operational Plan for the previous year (2010/11) to report against. The 2011/12 Annual Operational Plan is currently being delivered.

### 4.2 Delivery of Specified Management Services

As this is the first year of operation, there is no Annual Operational Plan for the previous year (2010/11) to report against. The 2011/12 Annual Operational Plan is currently being delivered.

## Appendix 1 - Performance Measures

### Use Performance Measures

#### **Trends in Real Quota Value are Stable or Increasing:**

The data used were taken from the *Quota Monitoring Reports* for the last month of each of the last five fishing years. Where quota value data were not available, estimated values were calculated from Annual Catch Entitlement (ACE) values. The data were adjusted for inflation using the *Gross National Expenditure Deflator* (GNED).

The trend in real quota value was obtained from the gradient of a trend-line (LINEST) fitted to the data. The percentage change variable comes from converting the trend-line gradient value to a percentage of the baseline quota value (i.e. the 2006-07 fishing year).

Where real quota value was determined to have decreased by more than 5%, the performance measure was deemed as not met.

#### **Trends in Amateur Participation:**

The Ministry holds data on recreational participation surveys from 1996 and 2000/01. From these surveys, there are only two usable sets of data which is not enough to inform a trend. Work is currently underway to conduct a large scale multi species survey on recreational catch which could provide sufficient data, along with the other surveys to illustrate a trend. This is expected to be completed by 2013.

#### **Trends in Fulfilment of Customary Permits are Stable or Increasing:**

Information is submitted quarterly to the Ministry in relation to customary permits issued under the Fisheries (Kaimoana Customary Fishing) Regulations 1998 or the Fisheries (South Island Customary Fishing) Regulations 1998.

Regulation 27A of the Amateur Fishing Regulations also provides for the authorisation to take fisheries resources for hui or tangi but does not require reporting of the amounts authorised or taken and was not used in this assessment.

The data were used to assess the percentage of what was authorised by the permit and what was actually taken by the permit. This information was totalled for each year and presented as a total percentage of taken and reported as a proportion of total authorised. A trend-line was fitted to indicate the amount of change in % fulfilment. A minimum of three years data was used. Where fulfilment of customary permits was determined to have decreased by more than 5%, the performance measure was deemed as not met. Where additional information was available that might explain a trend, or lack of, this was included in the comments section. The period of 2006-2011 was used.

This analysis was problematic as the information was not always complete. In many cases a variety of unit types (quantity) were used to report on each stock. This could be individual numbers or kilograms of fish or shellfish, sacks, sugar sacks, buckets of 10 litres or 20 litres and in many cases this part of the return was left blank. Many of the stocks did not have enough complete data to

make a comparison. In certain key stocks, however, the customary returns did show reliable data and comparisons could be reliably made.

#### **Rolling 5 Year Average Cost Recovery Levy (CRL)/ACE Value is not Increasing:**

ACE prices, YTD/tonne, came from the *Quota Monitoring Reports* for the last month of each fishing year. Where ACE prices were unavailable, estimates of the ACE value were derived from quota values, where those values were known.

The average CRL/tonne (total levy/TACC) divided by the ACE value was calculated for both of the 5 year periods 2005-10 and 2006-11. The percentage change between the 2005-10 and 2006-11 ratios was calculated. Where the ratio had increased by more than 5% the performance measure was deemed as not met.

A confounding factor in this analysis was the settlement between the Crown and Industry for previous over-payment of CRLs. Where this factor resulted in a bias, proxies were used. Where ACE information was unavailable, CRLs on their own were used, adjusted for inflation using the GNED, then divided by the TACC, and analysed using a trend-line. In this case, a threshold of \$10 per tonne for shellfish and \$5 for finfish was first used to identify nominal changes over the time period and assess as likely met. Where the change in value exceeded the threshold a percentage difference of the trend-line of 5% was used to determine if the performance measure was likely met.

#### **Management Costs are Stable or Decreasing:**

Analysis of this performance measure was only applied to non-QMS stocks and was assessed by analysing the cost of any research that was carried out on these stocks in the last 5 year period. Research costs were adjusted for inflation using the GNED, divided by the TACC, and then analysed for trend using a trend-line. A threshold of 5% was used to determine if the performance measure was met.

### **Environment Performance Measures**

**Stock Sustainability:** (the performance measure used depends on the 'group'):

- Group 1: Stock size is at or above the established target biomass with at least 50% probability
- Group 2: Stock size is at or above the minimum reference level with at least 50% probability
- Group 3: Stock size is at or above an established target reference level with at least 50% probability
- Group 4 and 5: Catch is stable or fluctuates without trend.

The data used to assess the stock sustainability performance measure is predominantly from the most recent stock plenary assessment reports including:

- stock assessments
- probabilities of biomass estimates
- biomass survey relative biomass indices
- CPUE indices
- other abundance indicators
- catch quantities.

Many stocks measured against the performance measure lack key pieces of information to determine whether or not the performance measure is met (for example, stock size in relation to the target biomass), or they have not yet been assigned a target/threshold reference level. Whether this is the case or not is set out in the text for each stock.

Where target/ threshold reference levels are not set and/or information on stock size in relation to this level is not available, the best available information was used to establish whether or not there was a sustainability concern with the stock. In these instances, the text will provide an idea as to what information was evaluated to determine whether the stock sustainability performance measure was met.

**Catch is stable or fluctuates without trend:**

Data used were catch and TACC information from the most recent four fishing years (2006-2011). Data were obtained from FIS. The percentage catch against TACC was calculated for each year. Variation in the data was checked by calculating the average and the standard deviation. To assess whether catch was stable around the average, a threshold of 20% variation for finfish, and 10% variation for shellfish was set. Trend was established by fitting a trend-line.

Stocks with a TACC of less than 20 tonnes (finfish) or 10 tonnes (shellfish) were deemed to have been lightly fished and to have met this performance measure unless other information is available that suggests otherwise.

**Policy Objectives Relating to Habitats of Significance for Fisheries Management are Met:**

No formal policies have been set relating to habitats of significance for fisheries management.

**Where Policy Objectives are Absent, Fishing Effects on Identified Habitats of Significance for Fisheries Management are not Increasing:**

Habitats of significance for fisheries management have not yet been formally identified.

**Policy Objectives for Managing Fishing Effects on the Aquatic Environment (and Biodiversity) are Met**

Policy Objectives are set out in the National Plan of Action for Sharks, the Hector's and Maui Dolphins Threat Management Plan, and the Marine Protected Area Policy. None have objectives that specifically relate to, or require direct monitoring of, individual fisheries stocks.

**Where Policy Objectives are Absent, Interactions with the Benthos and Protected Species are not Increasing:**

The data source for assessment of interactions with the benthos is the Ministry Research Data Management database from trawl catch effort returns (TCER) and catch effort landing returns (CELR) as hours dredged and hours towed for bottom trawling.

For interactions with protected species, data were sourced from the Ministry Non-fish/protected species database and the Department of Conservation's Hector's dolphin incident database as these will be consistent data series into the future. Data were filtered to cover only target species from the Inshore National Fisheries Plans.

**Note:** More detailed guidelines on the methodology used to assess these performance measures are available from the Ministry on request.