Annual Review of Inshore Finfish Fisheries

2010/11

New Zealand Government

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National Snapshot: Inshore Finfish 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 finfish fisheries in the Draft National Fisheries Plan for Inshore Finfish (the Finfish Plan). Performance measures[1] 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 Finfish Fisheries

Healthy Inshore Finfish Stocks

Fishstocks must be healthy if they are to support high-quality fisheries. New Zealand's fishstocks are generally considered healthy when their biomass (stock size) is at or above the level that would produce the maximum sustainable yield (MSY). 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 Finfish Plan. The performance measures and management objectives vary by stock group[2], where 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 finfish stocks meeting stock health performance measure

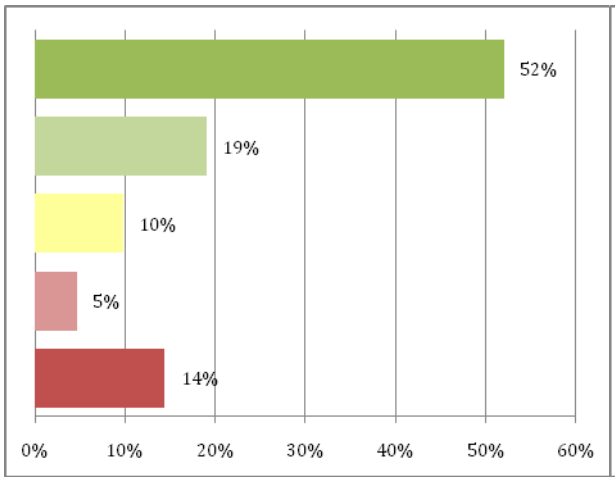
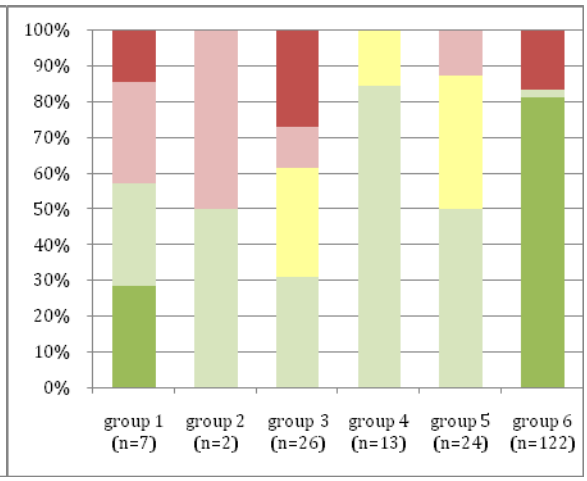
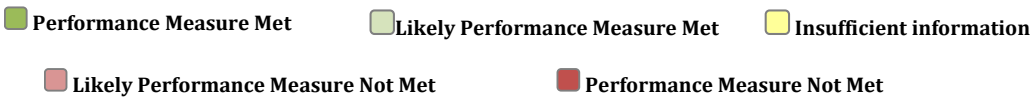


Figure 2. Percentage of QMS finfish stocks meeting stock health performance measure by group





[1] Refer Appendix 1 for a description of the performance measures used in this document.

Fifty-two percent of stocks are currently rated as "meeting the performance measure," while an additional 19% of stocks are also rated as "likely meeting their performance measure." A combined 37 stocks (19%) are rated as either "not meeting" (14%) or "likely not meeting the performance measure" (5%). Of these 37stocks, nine stocks (SKI1, 2, 7, SNA8 and all five Bluenose stocks) are under a rebuilding plan. The remaining 28 stocks have been highlighted for further analysis.

Further investigation of fishery and research information will occur in 2011/12 to determine whether and what management action is required. Work will also continue to improve information where current information is insufficient to assess stock health.

Healthy Inshore Finfish Environments

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

Information to consistently identify and monitor habitats important to finfish is not yet available. Work is being undertaken in 2012/13 to support identification of such habitats. Where appropriate, some habitats known to be important to finfish 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 finfish.

Benefits Realised from Finfish Fisheries

Fisheries provide cultural, social, economic and intrinsic benefits to New Zealand. At this time there is no accepted way of estimating a single benefit measure for fish stocks, therefore benefits are monitored for each fishing sector using 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

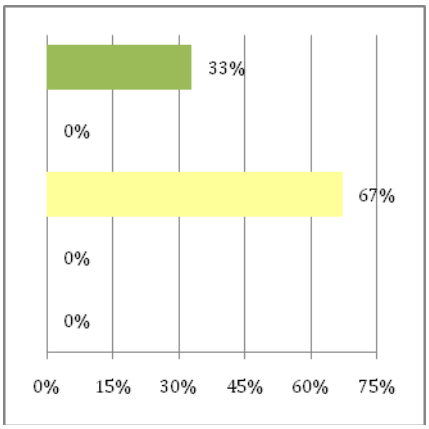
Finfish are an important traditional food source for many iwi, hapu and whänau, and tangata whenua have special relationships with taonga fish species and places of customary food gathering importance. Trends in fulfilment of customary Maori authorisations provide an indication of whether customary fishing needs are being met.

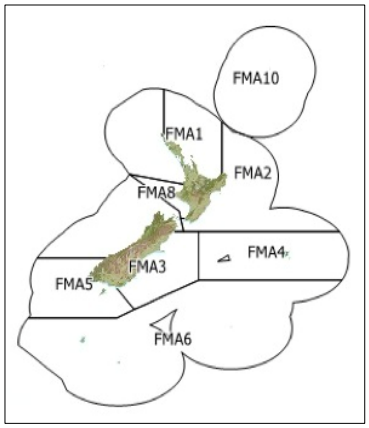
As reflected in the figure 3 below, for 67% of fishstocks data is insufficient in many fisheries to assess trends in fulfilment, because the requirement to report customary catch is not yet in place nationwide. However, where customary reporting is in place we are able to make an assessment of this

[2] See Section 2.1 for more information on stock groupings.

performance measure. 33% of finfish stocks are able to be assessed against this performance measure and all of these stocks are considered to be meeting the performance measure. A key focus for the future 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.

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





FMA	% Area Covered by the Customary Regulations
FMA1	15%
FMA2	57%
FMA3	99%
FMA4	100%
FMA5	100%
FMA6	100%
FMA7	75%
FMA8	11%
FMA9	46%
FMA10	n.a.

Performance Measure Met **Likely Performance Measure Met** **Insufficient information**

Likely Performance Measure Not Met **Performance Measure Not Met**

Recreational Sector Benefits

Recreational fishing is one of New Zealand's most popular recreational activities for individuals over the age of 16. A Sport and Recreation survey from 2007/08 indicates that approximately 725,000 New Zealanders participate in marine and saltwater fishing (including harvesting finfish) at least once per year, which 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.

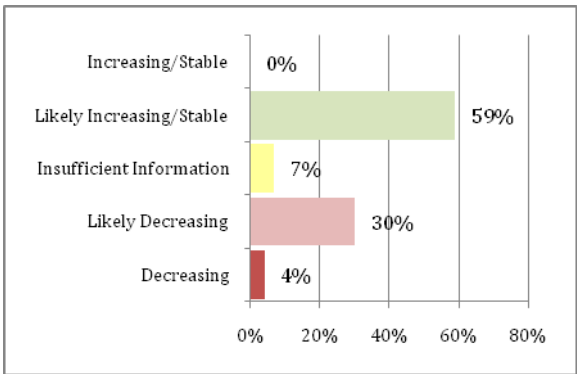
General and stock-specific participation information is available in a number of surveys. However, the information is either highly uncertain or not directly comparable and therefore no trend information is available at this time. There is a general impression that participation levels have increased during the last decade. A key focus is on improving the quality of recreational fishing information. A large scale-multi species survey of recreational catch is currently underway and will help inform recreational catch trends going forward.

Commercial Sector Benefits

The price paid for finfish quota shares gives a market-based estimate of commercial benefit. The total quota share value of inshore finfish fisheries in 2009[3] was $812.1 million. This compares to $862.4 million in 2005. The two most commercially valuable finfish species are snapper and tarakihi. The total value of snapper quota increased from $257.6 to $262.5 million between 2005 and 2009[4]. Tarakihi quota value also increased from $61.9 to $74.9 million over the same period.

Figure 4 shows that quota value is or is likely to be stable or increasing in 59% of inshore finfish stocks. Conversely quota value in 34% of inshore finfish stocks is considered to be decreasing or likely to be decreasing. The reasons for change in quota value are often stock specific and can be due to a number of factors including, price paid by markets, changes to the TACC and regulatory changes. More generic influences include changes in the cost of fishing (for example fuel costs), the value of the New Zealand dollar and the level of competition in the quota market.

Figure 4: Trends in quota value of finfish stocks



In order to support increases in quota value management focuses on the following areas: reducing illegal fishing, removing regulations that unnecessarily constrain benefits, supporting industry value-added initiatives, and facilitating sustainable development of fisheries.

Management Costs

High management costs can reduce overall benefits. It is not possible to estimate total management costs for each finfish stock. However, levies recovered from Annual Catch Entitlement (ACE) holders are available. Total levies recovered for the past five years, as well as trends in recovered costs relative to the value of ACE, are illustrated in Figures 5 and 6.

[3] Most recent year reported by Statistics New Zealand, this information will be updated as new information becomes available in 2012.
[4] Most recent year reported by Statistics New Zealand, this information will be updated as new information becomes available in 2012.

Figure 5. Trend in costs recovered relative to value of ACE

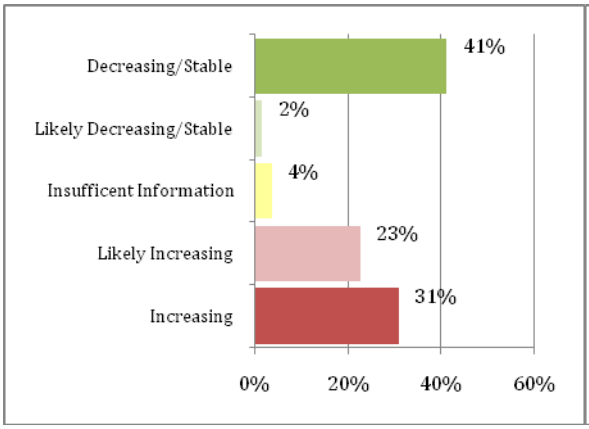
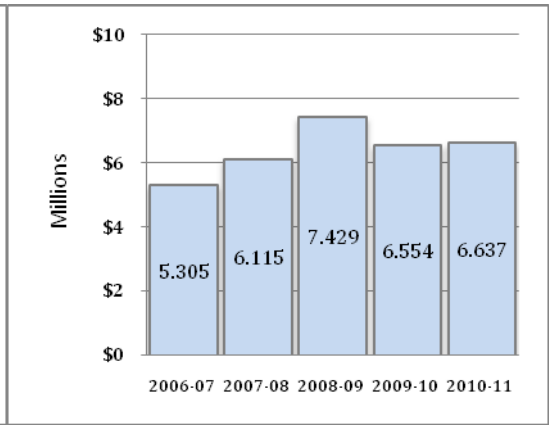


Figure 6. Total levies recovered for finfish management ($ millions)



A confounding factor in this analysis was the settlement between the Crown and Industry for previous over-payment of CRLs. Credits for 2005-06 are unable to be taken into account resulting in a potential overestimation of increasing costs. Therefore, any trend in costs recovered relative to ACE value that increases may be erroneous. The method will be reviewed in 2012/13 to determine whether this issue with data is resolved. Meanwhile trends in CRL/ACE values up to 2012 are subject to a strong caveat and will not be used to inform the Annual Operating Plan. Total levies[5] recovered have been reasonably stable since 2007-08.

Environmental Effects of Fishing

New Zealand's aquatic environment is valuable for many reasons. The Ministry has a legal obligation to ensure sustainability, through both maintaining fish stock levels and managing the adverse effects of fishing on other species and the aquatic environment.

Protected Species

There are policy objectives currently in place for managing the effects of fishing on Sharks and Hector's and Maui's dolphins. Information on fishing interactions with sharks shows that these policy objectives are being met. Information on fishing interactions with Hector's and Maui's dolphins is uncertain due to low levels of observer coverage however, it is likely that these objectives are being met.

Policy objectives are currently under development for seabirds. Information on fishing interactions with seabirds indicates that, for some seabird species, possible future policy targets may not be being met.

Interactions with other protected species in inshore finfish fisheries are considered to be low.

5 Represents the total amount that was levied - this is not the amount that industry was charged as the Crown pays levies as well and does not include the Crown component of fisheries and conservation services.

The Ministry will continue to monitor interactions with protected species and use any management tools necessary to ensure the continued protection and long-term viability of these species.

Benthic Impacts

Interactions with the benthos in finfish fisheries have been estimated by examining trawling hours reported. Trawling hours have increased nationally but, this is only over a three year period and it is unclear if this indicates increasing interactions with the benthos. There has been a decreasing trend in the number of trawl vessels since 1992.

1. Introduction

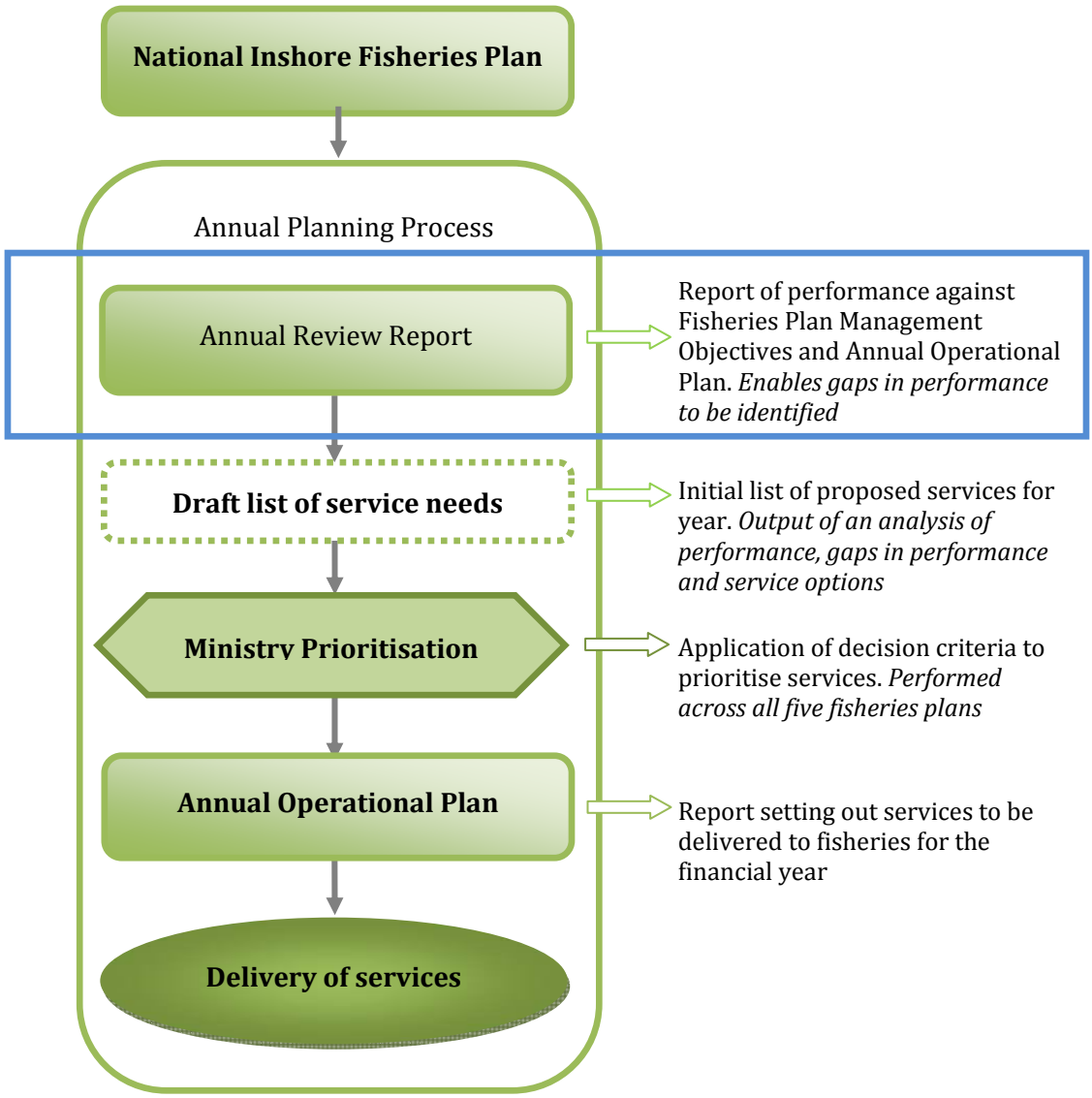
1.1 Purpose

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

1.2 Context

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

Figure 7: Annual Planning and Service Delivery Cycle



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

1. the status of finfish fisheries relative to the performance measures set out in the Finfish 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 no Annual Operational Plan was produced in 2009/10)*.

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 MAF 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' performance objectives and 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.

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

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

Appendices: **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 reports performance of each stock against the Performance Measures set out in the Finfish Plan.

The grouping of stocks with similar characteristics in the Finfish Plan allows management objectives to be applied at the group level. This section is organised by Fisheries Management Areas. However, a stock's boundaries can include one or more FMAs.

The Finfish Plan groups stocks to facilitate multi-stock objective-setting and service delivery. Performance Measures are established at the group level. The stock groupings are as follows:

QMS stocks	**Group 1**	
	Blue cod (BCO 5)	Tarakihi (TAR 1)
	Kahawai (KAH 1)	Trevally (TRE 1, 7)
	Snapper (SNA 1, 8)	
	Group 2	
	Flatfish (FLA 3)	Red cod (RCO 3)
	Group 3	
	Blue cod (BCO 3, 4, 7, 8)	Kahawai (KAH 2, 3)
	Blue moki (MOK 1)	Kingfish (KIN 1, 8)
	Bluenose (BNS 1, 2, 3, 7, 8)	Ling (LIN 1)
	Elephant fish (ELE 3)	Snapper (SNA 2, 7)
	Gemfish (SKI 1, 2)	Tarakihi (TAR 2, 7)
	Hapuku/Bass (HPB 1, 2, 3, 7)	
	Group 4	
	Barracouta (BAR 1)	Red cod (RCO 7)
	Flatfish (FLA 1, 2, 7)	Red gurnard (GUR 1, 2, 3, 7)
	Grey mullet (GMU 1)	Yellow-eyed mullet (YEM 3, 7)
	John dory (JDO 1)	
	Group 5	
	Rig (SPO 1, 2, 3, 7, 8)	School shark (SCH 1, 2, 3, 4, 5, 7, 8)
	Rough skate (RSK 1, 3, 7, 8)	Smooth skate (SSK 1, 3, 7, 8)

		Spiny dogfish (SPD 1, 3, 7, 8)
QMS stocks	**Group 6**	
	Anchovy (ANC 1, 2, 3, 4, 7, 8)	Ling (LIN 2)
	Blue cod (BCO 1, 2)	Parore (PAR 1, 2, 9)
	Blue (English) mackerel (EMA 1, 2)	Pilchard (PIL 1, 2, 3, 4, 7, 8)
	Blue moki (MOK 3, 4, 5)	Porae (POR 1, 2, 3)
	Blue warehou (WAR 1, 2, 3, 7, 8)	Red cod (RCO 1, 2)
	Butterfish (BUT 1, 2, 3, 4, 5, 6, 7)	Red gurnard (GUR 8)
	Elephant fish (ELE 1, 2, 5, 7)	Red snapper (RSN 1, 2)
	Frostfish (FRO 1, 2)	Ribaldo (RIB 1, 2, 9)
	Garfish (GAR 1, 2, 3, 4, 7, 8)	Sea perch (SPE 1, 2, 8, 9)
	Ghost shark, dark (GSH 1, 2, 3, 7, 8, 9)	Snapper (SNA 3)
	Grey mullet (GMU 2, 3, 7)	Sprats (SPR 1, 3, 4, 7)
	Hapuku/Bass (HPB 4, 5, 8)	Stargazer (STA 1, 2, 3, 4, 5, 7, 8)
	Jack mackerel (JMA 1)	Tarakihi (TAR 3, 4, 5, 8)
	John dory (JDO 2, 3, 7)	Trevally (TRE 2, 3)
	Kahawai (KAH 4, 8)	Trumpeter (TRU 1, 2, 3, 4, 5, 6, 7, 8, 9)
	Kingfish (KIN 2, 3, 4, 7)	Yellow-eyed mullet (YEM 1, 2, 4, 5, 6, 8, 9)
	Leatherjacket (LEA 1, 2, 3, 4)	
	Group 7	
Non-QMS stocks	All other species/stocks, including for example: conger eel, hiwihiwi or kelp fish, lamprey, rock cod and hagfish.	

2.2 Performance Measures

The Performance Measures (and associated Management Objectives) for each stock group are set out in the tables below.

Group 1

USE objective:	Maximise the overall social, economic, and cultural benefit obtained from each stock.

Performance measures:

1. Trends in:
   - fulfilment of customary permits
   - amateur participation rates
   - real quota value
   - overall benefits, where these can be determined cost effectively,

   are stable or increasing.
2. Rolling 5-yr average Cost Recovery Levies (CRL)/Annual Catch Entitlement (ACE) value is not increasing.

ENVIRONMENT objective (Stock Sustainability)**:**	Maintain biomass of each stock at or above B_{MSY} (or accepted proxy).

Performance measure

3. Stock size is at or above the established target biomass with at least 50% probability

Group 2

USE objective:	Maximise the overall social, economic, and cultural benefit obtained from each stock.

Performance measures:

1. Trends in:
   - fulfilment of customary permits
   - amateur participation rates
   - real quota value
   - overall benefits, where these can be determined cost effectively,

   are stable or increasing.
2. Rolling 5-yr average Cost Recovery Levies (CRL)/Annual Catch Entitlement (ACE) value is not increasing.

ENVIRONMENT objective (Stock Sustainability)**:**	Maintain relative stock abundance at or above an established minimum reference level.

Performance measure

3. Relative stock size is at or above an established minimum reference level with at least 50% probability.

Group 3

USE objective:	Secure social, economic and cultural benefits obtained from each stock.

Performance measures:

1. Trends in:
   - fulfilment of customary permits
   - amateur participation rates
   - real quota value

   are stable or increasing.
2. Rolling 5-yr average CRL/ACE value is not increasing.

ENVIRONMENT objective (Stock Sustainability)**:**	Maintain stock size at or above target reference level.

Performance measure:

3. Stock size is at or above the established target reference level with at least 50% probability.

Group 4

USE objective:	Secure social, cultural and economic benefits from each stock.

Performance measures:

1. Trends in:
   - fulfilment of customary permits
   - amateur participation rates
   - real quota value
   - overall benefits, where these can be determined cost effectively,

   are stable or increasing.
2. Rolling 5-yr average CRL/ACE value is not increasing.

ENVIRONMENT objective (Stock Sustainability)**:**	Maintain stock size at or above target reference level.

Performance measure:

3. Stock size is at or above an established target reference level with at least a 50% probability.

Group 5

USE objective:	Secure social, cultural and economic benefits from each stock.

Performance measures:

4. Trends in:
    - fulfilment of customary permits
    - amateur participation rates
    - real quota value
    - overall benefits, where these can be determined cost effectively,

   are stable or increasing.
5. Rolling 5-yr average CRL/ACE value is not increasing.

ENVIRONMENT objective (Stock Sustainability)**:**	Maintain stock size at or above target reference level.

Performance measure:

6. Stock size is at or above an established target reference level with at least a 50% probability.

Group 6

USE objective:	Enable utilisation of each stock.

Performance measure:

1. Rolling 5-yr average Cost Recovery Levies (CRL)/Annual Catch Entitlement (ACE) value is not increasing.

ENVIRONMENT objective (Stock Sustainability)**:**	Ensure catch is at a level that is sustainable.

Performance measure:

2. Catch is stable or fluctuates without trend.

Group 7	
USE objective:	Enable utilisation of each stock.
Performance measure: 1. Management costs are stable or decreasing	
ENVIRONMENT objective: (Stock Sustainability)**:**	Ensure catch is at a level that is sustainable.
Performance measures: 2. Catch is stable or fluctuates without trend 3. Catch does not exceed or fluctuate beyond the QMS Introduction Process Standard thresholds.	

All Groups	
ENVIRONMENT objective (Stock Sustainability):	Protect, maintain and enhance habitats of significance for fisheries management.
ENVIRONMENT objective (Effects of Fishing):	Minimise adverse effects of fishing on the aquatic environment, including on biological diversity.
Performance measures: 1. Policy objectives for habitats of significance for fisheries management are met. 2. Where there are no policy objectives, fishing effects on identified habitats of significance for fisheries management are not increasing. 3. Relevant resource management policy and planning documents include objectives, policies, and rules that protect habitats of significance for fisheries management.	
4. Policy objectives for managing fishing effects on the aquatic environment and biodiversity are met. 5. Where there are no policy objectives, interactions with the benthos and protected species are not increasing.	

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 ((FMA) to facilitate engagement with tangata whenua and stakeholders) and secondly by stock group.

The assessments are brief summaries[6]. 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. *Information directly relevant to the performance measure is available and confirms the performance measure is met.*
☑	Likely performance measure met. *Information directly relevant to the performance measure is not available but other information indicates the performance measure is likely met*
?	Insufficient data. *Available information is insufficient to make an assessment relevant to the performance measure.*
☒	Unlikely performance measure met. *Information directly relevant to the performance measure is not available but other information indicates the performance measure is likely not met.*
☒	Performance measure not met. *Information directly relevant to the performance measure is available and confirms the performance measure is not being met.*

[6] Please note that the assessment against stock sustainability performance measures may not correspond to assessments of the biological status of stocks. As explained above, it is an assessment against the performance measures set in the Finfish Plan. For the latest information on the biological status of the stocks please refer to the 2010 Stock Status Report, published by the Ministry of Fisheries.

3.2 FMA1 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 Runway.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures
1	**KAH1 (Kahawai)**	☑ 18.1% increase in quota value	? Insufficient information to inform trend.[7]	? Customary reporting data insufficient to inform a trend to inform a trend	☑	☑ Stock size is approaching established target biomass. Projected to increase to 52% Bo (the unfished level of biomass) if current catch is maintained.
	SNA1 (Snapper)	☑ 0.15% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ Stock size against established target biomass is unknown. However, the 2000 stock assessment result and recent trends in CPUE (catch per unit effort) suggest this stock is about as likely as not (40-60%) to be at or above BMSY (the level of biomass required to support the maximum yield). The biomass in 1999 was estimated to be 80% BMSY. Given the increasing trends in CPUE in both BOP (Bay of Plenty) and HG (Hauraki Gulf) this stock is about as likely as not (40%-60%) to be at or above BMSY.
	TAR1 (Tarakihi)	☒ 7.65% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target biomass has been established. However, CPUE indices suggest no large changes in abundance between 1989-2007
	TRE1 (Trevally)	☑ 1.17% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☒ No target biomass has been established. However, reduced proportions of older age groups and strong drops in landings between 2006-10 indicate biomass may be declining. Aerial sightings will be evaluated in 2012.
3	**BNS1 (Bluenose)**	☑ 0.86% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☒ Stock size is below established target reference level. Subject to a recovery plan

[7]There is insufficient data to inform a trend because the Ministry only holds data from two recreational participation surveys (1996 and 2000/1). The large scale multi species survey currently underway will help inform this performance measure in the future.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures
3	**HPB1 (Hapuku & Bass)**	☒ 17.06% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	? No target reference level has been established. It is not known if current catches or TACCs are sustainable.
	KIN1 (Kingfish)	☑ 2.48% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ Stock size against established target reference level is unknown. Catches were reduced when the stock was introduced into the QMS in 2002 to increase biomass. However, commercial catch has been stable over the last 5 years and recreational fishers have reported increased success of fish up to 7 years old.
	LIN1 (Ling)	☑ 3.55% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	? No target reference level has been established and there is currently no accepted index of abundance.
	MOK1 (Moki)	☑ 0.6% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ No target reference level has been established. However, fishing mortality is very likely (>90%) to be well below natural mortality
	SKI1 (Gemfish)	☒ 7.8% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☒ Stock size is below established target reference level. Subject to a recovery plan.
4	**BAR1 (Barracouta)**	☑ 1.08% decrease in quota	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target reference level has been established. However the average of catches since 1984 is at about the level of the MCY (maximum constant yield) estimate.
	FLA1 (Flats)	☒ 12.2% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ No target reference level has been established. However, trends in CPUE show upturns in recent years that either approach the long-term mean (for Manukau, and Kaipara) or are substantially above it (for Hauraki Gulf).
	GMU1 (Grey Mullet)	☑ 6% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ No target reference level has been established. However, the average of catches since 1984 is at about the level of the MCY estimate.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability performance measures
4	**GUR1 (Gurnard)**	☑ 1.9% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target reference level has been established. However, trends in CPUE for each component of the fishery (GUR 1 West, GUR 1 East, GUR 1BOP) suggest an increase in abundance from a low in the mid 1990s to a peak in the early to mid 2000s followed by a subsequent decline. GUR 1 West CPUE is around the level observed in 1997-98, while GUR 1 East and GUR 1BOP are currently above the mean for the series.
	JDO1 (John Dory)	☒ 8.39% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ No target reference level has been established. However, recent CPUE for JDO 1west has been relatively stable above the long term mean. The series for JDO 1east shows a more pronounced cyclical pattern with the index currently at a low point. The series for JDO 1BOP shows more stability and an overall decrease to just below the mean.
5	**RSK1 (Rough Skate)**	☒ 7.4% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	? No target reference level has been established and no proxy is available.
	SCH1 (School Shark)	☒ 6.8% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ No target reference level has been established. However, CPUE index suggests stock size is likely (>60%) to remain at current levels at present catch levels.
	SPD1 (Spiny Dog)	☒ 9.7% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	? No target reference level has been established and no proxy is available.
	SPO1 (Rig)	☑ 0.9% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	? No target reference level has been established and no proxy is available.
	SSK1 (Smooth Skate)	☒ 7.1% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	? No target reference level has been established and no proxy is available.
6	**ANC1 (Anchovy)**	-	-	-	☑	☑ Catch has been stable. This is a developing fishery and less than 1% of TACC caught in 2010/11
	BCO1 (Blue Cod)	-	-	-	☒	☑ Catch has been 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
6	**BUT1 (Butterfish)**	-	-	-	☒	☑ TACC of 3 tonnes
	ELE1 (Elephant Fish)	-	-	-	☒	☑ TACC of 10.1 tonnes
	EMA1 (Blue Mackerel)	-	-	-	☑	☑ Catch fluctuating without trend
	FRO1 (Frostfish)	-	-	-	☑	☑ Catch has been stable
	GAR1 (Garfish)	-	-	-	☒	☑ Catch fluctuating without trend
	GSH1 (Ghost Shark)	-	-	-	☒	☑ Catch has been stable
	JMA1 (Jack Mackerel)	-	-	-	☑	☒ Unstable catches
	LEA1 (Leatherjacket)	-	-	-	☒	☑ Catch has been stable
	PAR1 (Parore)	-	-	-	☒	☑ Catch has been stable
	PIL1 (Pilchard)	-	-	-	☑	☑ Catch has been 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
6	**POR1 (Porae)**	-	-	-	☑	☑ Catch fluctuating without trend
	RCO1 (Red Cod)	-	-	-	☒	☑ Catch has been stable
	RIB1 (Ribaldo)	-	-	-	☒	☑ Catch has been stable
	RSN1 (Red Snapper)	-	-	-	☑	☑ Catch has been stable
	SPE1 (Sea Perch)	-	-	-	☒	☒ Unstable catches
	SPR1 (Sprats)	-	-	-	☑	☑ Catch has been stable
	STA1 (Stargazer)	-	-	-	☒	☒ Unstable catches
	TRU1 (Trumpeter)	-	-	-	☒	☑ Catch has been stable
	WAR1 (Warehou)	-	-	-	☒	☑ Catch has been stable
	YEM1 (Yellow-eyed mullet)	-	-	-	☑	☑ Catch fluctuating without trend. This is a developing fishery with less than 50% of the TACC caught in 2010/11

3.3 FMA2 Central Fishery Management Area

FMA2 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 Runway.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
3	**BNS2 (Bluenose)**	☑ 2.3% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☒ Stock size is below established target reference level. Subject to a recovery plan
	HPB2 (Hapuku & Bass)	☒ 5.65% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	? No target reference level has been established. It is not known if current catches or TACCs are sustainable.
	KAH2 (Kahawai)	☑ 16.75% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ Stock size against established target reference level is unknown. Catches were reduced when the stock was introduced into the QMS in 2004 to increase biomass. Commercial catch has been stable over the last 5 years.
	SKI2 (Gemfish)	☒ 7.8% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☒ Stock size is below established target reference level. Subject to a recovery plan.
	SNA2 (Snapper)	☑ 1.6% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target reference level has been established. However, current biomass modelling has shown that the stock size is projected to increase based on current catch levels.
	TAR2 (Tarakihi)	☑ 2.65% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☒ No target reference level has been established. However, declining CPUE suggests that biomass is declining. A stock assessment of east coast tarakihi is scheduled for 2012

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
4	**FLA2 (Flats)**	☑ 1.05% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	? No target reference level has been established and no proxy is available.
4	**GUR2 (Gurnard)**	☑ 2.5% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target reference level has been established. However, CPUE shows no drastic changes with current levels similar to that from the early 1990s.
5	**SCH2 (School Shark)**	☒ 5.2% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target reference level has been established. However, the CPUE index suggests stock size is likely to remain at current levels or increase at present catch levels.
5	**SPO2 (Rig)**	☑ 1.5% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ No target reference level has been established. However, CPUE index suggests stock size is likely to remain at current levels at present catch levels.
6	**ANC2 (Anchovy)**	-	-	-	☑	☑ Catch has been stable. This is a developing fishery and no catch was reported in 2010/11
6	**BCO2 (Blue Cod)**	-	-	-	☒	☑ TACC of 10.3 tonnes
6	**BUT2 (Butterfish)**	-	-	-	☑	☑ Catch has been stable
6	**ELE2 (Elephant Fish)**	-	-	-	☒	☑ Catch fluctuating without trend
6	**EMA2 (Blue Mackerel)**	-	-	-	☑	☒ Unstable catches likely due to changes in fishing patterns.
6	**FRO2 (Frostfish)**	-		-	☒	☑ Catch has been stable

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
	GAR2 (Garfish)	-	-	-	☑	☑ TACC of 5 tonnes
6	**GMU2 (Grey Mullet)**	-	-	-	☑	☑ Catch has been stable
	GSH2 (Ghost Shark)	-	-	-	☒	☒ Unstable catches
	JDO2 (John Dory)	-	-	-	☑	☑ Catch has been stable
	KIN2 (Kingfish)	-	-	-	☑	☑ Catch has been stable
	LEA2 (Leatherjacket)	-	-	-	☒	☑ Catch has been stable
	LIN2 (Ling)	-	-	-	☑	☑ Catch has been stable
	PAR2 (Parore)	-	-	-	☑	☑ Catch has been stable
	PIL2 (Pilchard)	-	-	-	☑	☑ Catch has been stable
	POR2 (Porae)	-	-	-	☒	☑ Catch fluctuating without trend

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
	RCO2 (Red Cod)	-	-	-	☒	☒ Unstable catches
6	**RIB2 (Ribaldo)**	-	-	-	☒	☑ Catch has been stable
	RSN2 (Red Snapper)	-	-	-	☒	☑ Catch has been stable
	SPE2 (Sea Perch)	-	-	-	☒	☒ Unstable catches
	STA2 (Stargazer)	-	-	-	☒	☑ Catch has been stable
	TRE2 (Trevally)	-	-	-	☑	☒ Unstable catches
	TRU2 (Trumpeter)	-	-	-	☑	☑ Catch has been stable
	WAR2 (Common Warehou)	-	-	-	☒	☑ Catch has been stable
	YEM2 (Yellow-eyed mullet)	-	-	-	☑	☑ Catch fluctuating without trend. This is a developing fishery with less than 50% of the TACC caught in 2010/11

3.4 FMA3 Southeast Fishery Management Area

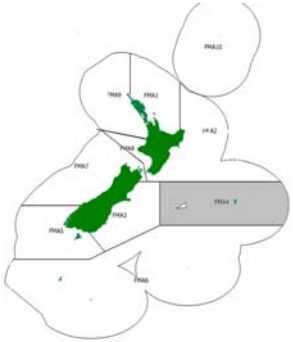
FMA3 includes the area south of the mouth of the Clarence River to the northern border of Slope Point

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
2	**FLA3 (Flats)**	☑ 36.2% increase in quota value	? Insufficient information to inform trend.[6]	☑ Stable. Trend increasing at approximately 2% per year.	☑	☑ Stock size is at or above established minimum reference level due to application of a current annual yield strategy.
	RCO3 (Red Cod)	☑ 40.6% increase in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☒	☒ No minimum reference level has been established. However, both survey biomass and catch have declined substantially since the mid 1990s.
3	**BCO3 (Blue Cod)**	☑ 11.2% increase in quota value	? Insufficient information to inform trend.[6]	? Insufficient data to inform trend	☑	☒ No target reference level has been established. However, a CPUE index has declined since 2002/03 to below the long term average
	BNS3 (Bluenose)	☑ 0.69% increase in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	☒ Stock size is below established target reference level. Subject to a recovery plan
	ELE3 (Elephant Fish)	☒ 12.8% decrease in quota value	? Insufficient information to inform trend.[6]	? Insufficient data to inform trend	☒	☑ No target reference level has been established. However, CPUE indices are at higher levels than that observed in the mid 1990s.
	HPB3 (Hapuku & Bass)	☒ 7.55% decrease in quota value	? Insufficient information to inform trend.[6]	? Insufficient data to inform trend	☒	? No target reference level has been established. It is not known if current catches or TACCs are sustainable.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
	KAH3 (Kahawai)	☑ 8.2% increase in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	? Stock size against established target reference level is unknown. Catches were reduced when the stock was introduced into the QMS in 2004 to increase biomass.
4	**GUR3 (Gurnard)**	☑ 34.8% increase in quota value	? Insufficient information to inform trend.[6]	? Insufficient data to inform trend	☒	☑ No target reference level has been established. However, CPUE shows that current abundance is as high as it has ever been over the 19 year period reviewed and about as likely as not (40-60%) to be at or above BMSY.
	YEM3 (Yellow-eyed mullet)	? No quota or ACE values available	? Insufficient information to inform trend.[6]	☑ Stable, but lots of fluctuations in the data.	☑	☑ No target reference level has been established and no proxy is available. Introduced into QMS in 1998 with catch limits designed to maintain the biomass of stocks well above that required to support MSY over the long term. In the last ten years, catches have not exceeded 75% of the TACC.
5	**RSK3 (Rough Skate)**	☑ 1.4% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	☑ No target reference level has been established. However, trawl surveys show biomass estimates for this stock are double what they were in the 1990's.
	SCH3 (School Shark)	☒ 11% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☒	☑ No target reference level has been established. However, a CPUE index suggests stock size is likely to remain at current levels or increase at present catch levels.
	SPD3 (Spiny Dogfish)	☑ 3.9% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	☑ No target reference level has been established. However East Coast South Island trawl survey index suggests stock size is declining but currently at about the long-term mean. It is unknown what the impacts of the current levels of catch will be on the stock.
	SPO3 (Rig)	☒ 6.7% decrease in quota value	? Insufficient information to inform trend.[6]	? Insufficient data to inform trend	☒	☑ No target reference has been established. However, CPUE index fluctuates about the long term mean. Catches have averaged about 1/3 below the TACC since 2000-01(Set net ban may have influenced catches)
	SSK3 (Smooth Skate)	☒ 7.7% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☒	? No target reference level has been established and no proxy is available.
6	**ANC3 (Anchovy)**	-	-	-	☑	☑ Catch has been stable. This is a developing fishery and less than 1% of TACC caught in 2010/11
	BUT3 (Butterfish)	-	-	-	☒	☑ TACC of 3 tonnes

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
	GAR3 (Garfish)	-	-	-	☑	☑ TACC of 5 tonnes
6	**GMU3 (Grey Mullet)**	-	-	-	☑	☑ Catch has been stable
	GSH3 (Ghost Shark)	-	-	-	☑	☒ Unstable catches
	JDO3 (John Dory)	-	-	-	☑	☑ Catch has been stable
	KIN3 (Kingfish)	-	-	-	☑	☒ Unstable catches
	LEA3 (Leatherjacket)	-	-	-	☑	☒ Unstable catches
	MOK3 (Moki)	-	-	-	☑	☑ Catch has been stable
	PIL3 (Pilchard)	-	-	-	☑	☑ Catch has been stable
	POR3 (Porae)	-	-	-	☑	☑ TACC of 2 tonnes
	SNA3 (Snapper)	-	-	-	☑	☑ Catch has been stable

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
	SPR3 (Sprats)	-	-	-	☑	☑ Catch has been stable
6	**STA3 (Stargazer)**	-	-	-	☒	☑ Catch has been stable However, available trawl survey information provides a stronger assessment of stock sustainability Two recent ECSI survey estimates have shown declines from the high in 2007 but remain just below the long term mean.
	TAR3 (Tarakihi)	-	-	-	☒	☑ Catch has been stable However, available CPUE index information provides a stronger assessment of stock sustainability. CPUE index indicates that biomass reached its lowest historical level over 2003-04 to 2005-06 at about 70% of the long-term average. The east coast south island trawl survey biomass estimate has declined continuously since 2007 and is currently just below the long-term mean
	TRE3 (Trevally)	-	-	-	☑	☑ Catch has been stable
	TRU3 (Trumpeter)	-	-	-	☒	☑ Catch fluctuating without trend
	WAR3 (Common Warehou)	-	-	-	☑	☑ Catch fluctuating without trend



3.5 FMA4 Chatham Islands Fishery Management Area

FMA4 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 against performance measures
3	**BCO4 (Blue Cod)**	☒ 13% decrease in quota value	? Insufficient information to inform trend.[6]	? Insufficient data to inform trend	☑	☑ No target reference level has been established. However, CPUE index increased to a peak in 2001/02 and thereafter has fluctuated without trend.
5	**SCH4 (School Shark)**	☑ 4% decrease in quota value	? Insufficient information to inform trend.[6]	? Insufficient data to inform trend	☑	? No target reference level has been established and no proxy is available.
6	**ANC4 (Anchovy)**	-	-	-	☑	☑ TACC of 10 tonnes
	BUT4 (Butterfish)	-	-	-	☑	☑ TACC of 10 tonnes
	GAR4 (Garfish)	-	-	-	☒	☑ TACC of 2 tonnes
	HPB4 (Hapuku & Bass)	-	-	-	☑	☑ Catch has been stable

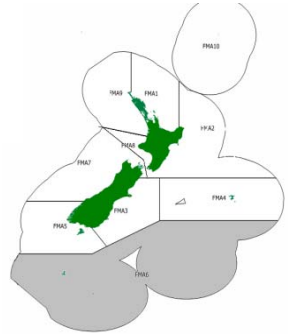
Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
	KAH4 (Kahawai)	-	-	-	☑	☑ TACC of 9 tonnes
6	**KIN4 (Kingfish)**	-	-	-	☑	☑ TACC of 1 tonnes
	LEA4 (Leatherjacket)	-	-	-	☑	☑ TACC of 7 tonnes
	MOK4 (Moki)	-	-	-	☑	☑ Catch has been stable
	PIL4 (Pilchard)	-	-	-	?	☑ TACC of 10 tonnes
	SPR4 (Sprats)	-	-	-	☑	☑ TACC of 10 tonnes
	STA4 (Stargazer)	-	-	-	☑	☑ Catch has been stable
	TAR4 (Tarakihi)	-	-	-	☑	☒ Unstable catches
	TRU4 (Trumpeter)	-	-	-	☑	☑ Catch fluctuating without trend
	YEM4 (Yellow-eyed mullet)	-	-	-	?	☑ No TACC set

3.6 FMA5 Southland Fishery Management Area

FMA5 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 against performance measures
1	**BCO5 (Blue Cod**	☑ 2% increase in quota value	? Insufficient information to inform trend.[6]	☑ Stable, fulfilment is high (between 100 and 94%)	☒	☒ Stock size against established target biomass is unknown. However, CPUE index has decreased since 2004/05 to just below the long term average.
5	**SCH5 (School Shark)**	☑ 3.1% increase in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	☒ No target reference level has been established. However, CPUE index suggests stock size is likely to decline at present catch levels. There is close correspondence in the indices for SCH 5 and SCH 7. Both indices monitor mature fish caught around Southland and the West Coast South Island, raising some concern for both these areas.
6	**BUT5 (Butterfish)**	-	-	-	☑	☑ Catch has been stable
	ELE5 (Elephant Fish)	-	-	-	☑	☑ Unstable catches However available information from CPUE series provides a stronger assessment of stock sustainability. CPUE series shows a steady increasing trend in biomass since the early 1990s. Stock size is considered likely to remain near current levels in the short term.
	HPB5 (Hapuku & Bass)	-	-	-	☑	☑ Catch has been stable
	MOK5 (Moki)	-	-	-	☑	☑ Catch has been stable

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
6	**STA5 (Stargazer)**	-	-	-	☒	☑ Catch has been stable
	TAR5 (Tarakihi)	-	-	-	☒	☑ Catch has been stable
	TRU5 (Trumpeter)	-	-	-	☑	☑ Catch has been stable
	YEM5 (Yellow-eyed mulled)	-	-	-	?	☑ No TACC set



3.7 FMA6 Sub-Antarctic Fishery Management Area

FMA6 includes the area south and east of FMAs 5 and 3, respectively, and extend 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 against performance measures
6	**BUT6 (Butterfish)**	-	-	-	? No data available	☑ No TACC set
	TRU6 (Trumpeter)	-	-	-	? No data available	☑ No TACC set
	YEM6 (Yellow-eyed mulled)	-	-	-	? No data available	☑ No TACC set

3.8 FMA7 Challenger Fishery Management Area

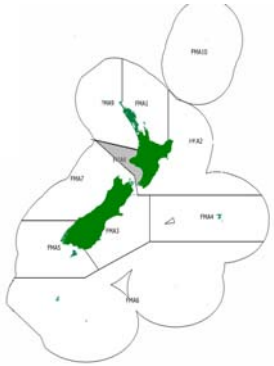
FMA7 includes the area north of Awarua Point, the West Coast of the South Island, Tasman and Marlborough, and east from Marlborough to the north of the Clarence River mouth.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
1	**TRE7 (Trevally)**	☒ 9.7% decrease in quota value	? Insufficient information to inform trend. [6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target biomass has been established. However, catch has been fluctuating without trend from 1980-2009. Very likely (60-90%) that B2008>BMSY.
3	**BCO7 (Blue Cod)**	☑ 4.4% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	? No target reference level has been established.
	BNS7 (Bluenose)	☑ 17.8% increase in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	☒ Stock size is below established target reference level. Subject to a recovery plan
	HPB7 (Hapuku & Bass)	☑ quota value stable	? Insufficient information to inform trend.[6]	☑ No reports	☑	? No target reference level has been established. It is not known if current catches or TACCs are sustainable.
	SNA7 (Snapper)	☑ 41.3% increase in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☒	? No target reference level has been established. However, CPUE generally declined to 2001, after which it has fluctuated without trend.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
3	**TAR7 (Tarakihi)**	☒ 11.7% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	☒ No target reference level has been established. However, CPUE has been declining since 2003-04 and is currently near the lowest level of the series.
4	**FLA7 (Flats)**	? No quota or ACE value available	? Insufficient information to inform trend.[6]	? Insufficient data to inform trend	☑	? No target reference level has been established and no proxy is available.
	GUR7 (Gurnard)	☒ 5.55% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☒	☑ No target reference level has been established. However, a trawl survey relative biomass index has increased steadily since 2003 to the highest level in the series in 2009. Unlikely (<40%) that overfishing is occurring.
	RCO7 (Red Cod)	☒ 8.0% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☒	☑ No target reference level has been established. However, a trawl survey relative biomass index has increased with the current 2009 index above the long-term mean. Based on the broad composition in the survey, high biomass levels are expected to persist in the short-term
	YEM7 (Yellow-eyed mullet)	? No quota or ACE value available	? Insufficient information to inform trend.[6]	☑ No reports	☑	☑ No target reference level has been established and no proxy is available. Introduced into QMS in 1998 with catch limits designed to maintain the biomass of stocks well above that required to support MSY over the long term. In the last ten years, catches have not exceeded 75% of the TACC.
5	**RSK7 (Rough Skate)**	? No quota or ACE value available	? Insufficient information to inform trend.[6]	☑ No reports	☒	☑ No target reference level has been established. However, trawl surveys suggest lower current abundance than long term mean, but higher than lows estimated in the early 2000's
	SCH7 (School Shark)	☒ 9.0% decrease in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	☒ No target reference level has been established. However, a CPUE index suggests stock size is likely to decline at present catch levels. There is close correspondence in the indices for SCH 5 and SCH 7. Both indices monitor mature fish caught around Southland and the WCSI, raising some concern for both these areas.
	SPD7 (Spiny Dogfish)	? No quota or ACE value available	? Insufficient information to inform trend.[6]	☑ No reports	☒	☑ No target reference level has been established. However, a CPUE index suggests stock size is likely to remain at current levels or increase at present catch levels.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
5	**SPO7 (Rig)**	☑ 10.9% increase in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☑	☑ No target reference level has been established. However, a CPUE index suggests stock size is likely (>60%) to increase at present catch levels.
	SSK7 (Smooth Skate)	☑ 14% increase in quota value	? Insufficient information to inform trend.[6]	☑ No reports	☒	☒ No target reference level has been established. However, trawl surveys reveal a strong decline. Although a cause for concern the reason for the decline is uncertain and requires further investigation.
6	**ANC7 (Anchovy)**	-	-	-	☑	☑ Catch has been stable. This is a developing fishery and less than 1% of TACC caught in 2010/11
	BUT7 (Butterfish)	-	-	-	☑	☑ Catch has been stable
	ELE7 (Elephant Fish)	-	-	-	☑	☑ Catch has been stable
	GAR7 (Garfish)	-	-	-	☑	☑ TACC of 8 tonnes
	GMU7 (Grey Mullet)	-	-	-	☑	☑ Catch has been stable
	GSH7 (Ghost Shark)	-	-	-	☑	☒ Unstable catches
	JDO7 (John Dory)	-	-	-	☒	☑ Catch has been stable This is also supported by trawl survey which estimates biomass has been high since 2003 and shows good recruitment in 2009. The 2009 size data as well as the biomass trends suggests that the stock is likely (>60%) to increase at recent catch levels

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
6	**KIN7 (Kingfish)**	-	-	-	☒	☒ Unstable catches
	PIL7 (Pilchard)	-	-	-	☑	☑ Catch has been stable
	SPR7 (Sprats)	-	-	-	☑	☑ Catch has been stable
	STA7 (Stargazer)	-	-	-	☒	☑ Catch has been stable This is also supported by West Coast South Island trawl survey indices which have increased from a low observed in 2003 to the highest in the series in 2009.TAC was also increased from 1000t to 1072t in 2010.
	TRU7 (Trumpeter)	-	-	-	☒	☒ Unstable catches
	WAR7 (Common Warehou)	-	-	-	☒	☑ Catch has been stable



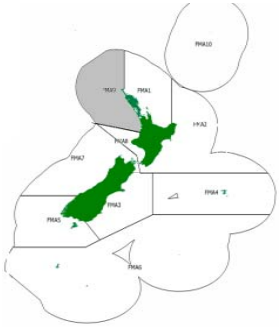
3.9 FMA8 Central Fishery Management Area

FMA8 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 against performance measures
1	**SNA8 (Snapper)**	☑ 8.3% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☒ Stock size against established target biomass is unknown although likely to be below the level able to support MSY. However, model projections suggest this stock should rebuild to BMSY by 2018 if current catches and recruitment are maintained. Subject to a recovery plan
3	**BCO8 (Blue Cod)**	☑ 3.2% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target reference level has been established. Recent commercial catch levels and TACCs are considered sustainable
	BNS8 (Bluenose)	☑ 0.1% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☒ Stock size is below the established target reference level. Subject to a recovery plan
	KIN8 (Kingfish)	☑ 14% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ Stock size against established target reference level is unknown. As a proxy commercial catch has been stable over the last 5 years.
5	**RSK8 (Rough Skate)**	☑ 3.05% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	? No target reference level has been established and no proxy is available.
	SCH8 (School Shark)	☑ 4% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☑	☑ No target reference level has been established. However, a CPUE index suggests stock size is likely to remain at current levels at present catch levels.

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
5	**SPD8 (Spiny Dogfish)**	☒ 5.7% decrease in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	? No target reference level has been established and no proxy is available.
	SPO8 (Rig)	☑ 25.1% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	☑ No target reference level has been established. However a CPUE index fluctuates without trend and recent indices are near the long-term average.
	SSK8 (Smooth Skate)	☑ 12.2% increase in quota value	? Insufficient information to inform trend.[6]	? Customary reporting data insufficient to inform a trend	☒	? No target reference level has been established and no proxy is available.
6	**ANC8 (Anchovy)**	-	-	-	☑	☑ Catch has been stable. This is a developing fishery and less than 1% of TACC caught in 2010/11
	GAR8 (Garfish)	-	-	-	☒	☑ TACC of 5 tonnes
	GSH8 (Ghost Shark)	-	-	-	☒	☒ Unstable catches
	GUR8 (Gurnard)	-	-	-	☒	☑ Catch has been stable
	HPB8 (Hapuku & Bass)	-	-	-	☑	☑ Catch has been stable
	KAH8 (Kahawai)	-	-	-	☑	☑ Catch has been stable
	PIL8 (Pilchard)	-	-	-	☑	☒ Unstable catches

Group	Stock	Trend in Quota Value	Trend in Amateur participation	Trend in Customary permit fulfilment	Trend in CRL/ACE value	Stock sustainability against performance measures
6	**SPE8 (Sea Perch)**	-	-	-	☒	☑ TACC of 15 tonnes
	STA8 (Stargazer)	-	-	-	☒	☑ Catch has been stable
	TAR8 (Tarakihi)	-	-	-	☒	☒ Unstable catches
	TRU8 (Trumpeter)	-	-	-	☑	☑ TACC of 1 tonne
	WAR8 (Common Warehou)	-	-	-	☒	☑ Catch has been stable
	YEM8 (Yellow-eyed mullet)	-	-	-	☑	☑ Catch fluctuating without trend. This is a developing fishery with less than 50% of the TACC caught in 2010/11



3.10 FMA9 Auckland West Fishery Management Area

FMA9 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 against performance measures
6	**GSH9 (Ghost Shark)**	-	-	-	☒	☒ Unstable catches
	PAR9 (Parore)	-	-	-	☒	☒ Unstable catches
	RIB9 (Ribaldo)	-	-	-	☑	☑ The TACC increased to 21 tonne on 1 October 2011
	SPE9 (Sea Perch)	-	-	-	☒	☑ Catch has been stable
	TRU9 (Trumpeter)	-	-	-	?	☑ Not TACC set
	YEM9 (Yellow-eyed mullet)	-	-	-	☑	☑ Catch has been stable. This is a developing fishery.

3.11 Environmental Objectives for all Stock Groups

	Policy and objectives relating to habitats of significance	Policy and objectives for managing fishing effects on the environment				
		Sharks	Dolphins	Seabirds	Benthic Impacts	Other Protected Species
All Finfish Stocks	? Policy objectives for managing fishing effects have not been determined. Benthic and marine protected areas have been identified for some areas.	☑ Policy objectives are in place and are being met	? Hector's and Maui Dolphins – policy objectives are in place, however, information on mortality levels is uncertain but likely to be meeting policy objectives for some for some populations	☒ Policy objectives are currently under development. Likely to not be meeting possible policy targets for some seabird species.	? Interactions with the benthos in finfish fisheries have been estimated by examining trawling hours reported. Trawling hours have increased nationally. But, this is only over a three year period and it is unclear if this indicates increasing interactions with the benthos. There has been a decreasing trend in the number of trawl vessels since 1992.	☑ Policy objectives are not in place. Limited monitoring but known interactions currently present a low risk.

3.12 GROUP 7: Non QMS Stocks

The following stocks are known to be caught in the inshore area, but they have not yet been introduced into the Quota Management System (QMS). The below table provides an assessment of the performance measure, "Catch does not exceed or fluctuate beyond the QMS Introduction Process Standard thresholds." Stocks not meeting the performance measure may trigger the QMS introduction threshold. The Ministry is committed to ensuring that there are appropriate development opportunities for non-QMS finfish species. All stocks have been assessed against the QMS Introduction Process Standard since 2004 but no stocks have met all the criteria for introduction into the QMS. The last assessment of some of the candidate stocks took place in 2008. No other information is available to inform performance against other group 7 performance measures.

		Catch does not exceed or fluctuate beyond the QMS Introduction Standard thresholds		
Species Code	Species name	20t Criteria	100t Criteria	Last assessed against QMS Introduction Process Standard
BBE	Banded bellowsfish	☒	☑	2008
BCD	Black cod	☒	☒	2004
BSH	Black shark	☒	☒	2004
CAR	Carpet shark	☒	☒	2004
CON	Conger eel	☒	☒	2004
EGR	Eagle ray	☒	☑	2004
ERA	Electric ray	☒	☑	2004
HAG	Hagfish	☒	☒	2008
KOH	Koheru	☒	☑	2004
NSD	Northern spiny dogfish	☒	☑	2004
OPE	Orange perch	☒	☑	2004

PIG	Pigfish	☒	☑	2004
POP	Porcupine fish	☒	☑	2004
SBO	Southern boarfish	☒	☑	2004
SND	Shovelnose dogfish	☒	☒	2004
SPZ	Spotted stargazer	☒	☑	2004
SSI	Silverside	☒	☒	2004
THR	Thresher shark	☒	☑	2004
TOA	Toadfish	☒	☑	2004

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 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 year on the 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 provide an indication of 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 provided 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 data was adjusted for inflation using the GNED.

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.

Where ACE information was unavailable, CRLs on their own were used, adjusted for inflation using the GNED, then divided by the TACC, and analysed for trend 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. No costs were attributable to non-QMS finfish stocks.

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 Group 4 and 5: Stock size is at or above an established target reference level with at least 50% probability
- Group 6: 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
- trawl 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 TCER & CELR catch effort returns 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.