

# Performance Measurement System

## Queensland Coral Fishery



Version 1  
April 2009

Queensland Primary Industries and Fisheries, part of the Department of Employment, Economic Development and Innovation (DEEDI), seeks to maximise the economic potential of Queensland's primary industries on a sustainable basis.

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## ***Introduction***

This document provides the framework for a performance measurement system (PMS) for the Queensland Coral Fishery (QCF). It formalises the objectives, performance indicators, performance measures and management responses that have been developed by Primary Industries and Fisheries with input from stakeholders.

The Queensland Coral Fishery (QCF) is one of a range of harvest (hand collection) fisheries managed by Queensland Primary Industries and Fisheries (QPIF), part of the Department of Employment, Economic Development and Innovation. Commercially collected coral taxa, coral rubble and sand, and living rock are marketed domestically and internationally. Coral taxa can also be collected recreationally from areas outside of State Marine Parks and the Great Barrier Reef Marine Park (GBRMP). The fishery supports 59 collection licences (in 2008), and occurs within a vast area along the east coast of Queensland within the bounds of the Australian Fishing Zone (AFZ). The QCF is a predominantly commercial fishery with most collection occurring in coastal and reef waters off Cairns and the Keppel region.

The QCF is a small scale, quota managed, hand harvest fishery (commercial Total Allowable Catch = 200 tonnes (t)) with 59 authorities. The quota is split between live coral (30%) and live rock/coral rubble/ornamental coral (70%).

Although a significant Australian industry, the QCF is not considered one of the major exporters of hard and soft corals and living rock on the world scale (Wabnitz et al. 2003). Given the size of harvest relative to the resource and the quota control of coral amounts being harvested, Queensland's coral fishery is one of the lowest impact coral fisheries on an international level. The emphasis of the fishery is on quality rather than quantity, which contributes to both the ecological and economic sustainability of the fishery.

The commercial Coral Fishery is based on the collection of a broad range of species from the classes Anthozoa and Hydrozoa. The key components of the fishery are:

- Live corals (includes anemones, soft and hard corals)
- Ornamental (non-living) corals
- Living rock (i.e. dead coral skeletons with algae and other organisms living on them)
- Coral rubble (i.e. coarsely broken up coral fragments)
- Coral sand (i.e. finely ground up particles of coral skeleton) - only taken as incidental catch and may not be targeted within Marine Park waters.

Coral taxa from over 36 families are harvested for the live aquarium trade. Coral families targeted for the non-living, ornamental coral trade include:

- Pocilloporidae (cauliflower/bird's nest corals)
- Acroporidae (staghorn/velvet corals).

Queensland coral and invertebrates are also collected by recreational fishers for personal home aquaria. Recreational fishers are limited by all existing in-possession and size limits and apparatus restrictions for fisheries, as outlined in the Queensland *Fisheries Regulation 2008*. Recreational fishers are not permitted to sell their catch.

From 1 July 2006 the commercial coral fishery operated under the Primary Industries and Fisheries "Policy for the Management of the Coral Fishery". The Policy was reviewed in 2008 following a full year of operation under the Policy. A Coral Policy Working Group comprising representatives from the fishing industry, scientific community, the Great Barrier Reef Marine Park Authority and QPIF was formed to undertake the review. The review suggested several changes to the operation and management of the fishery under the Policy:

- Roving harvest for all licence holders, in place of individual Coral Collection Areas (CCAs)
- Removal of the inappropriate 6m depth limit to allow collection in ideal habitats
- Capping the take of live coral at 30% of the commercial fishery's Total Allowable Catch (TACC), which remains at 200 tonnes
- Reporting of catch prior to landing
- More detailed logbook reporting.

Additionally, the following management measures are still in place for the commercial fishery under legislation and policy:

- Limited entry: 59 Commercial Harvest Fishery Licences (CHFLs) are endorsed for the coral fishery.
- Limits on the number of boats and collectors operating under a licence at any one time.
- Collection by hand or hand-held implements only, with the aid of artificial breathing apparatus allowed.

#### *Recreational fishery*

- No selling or trading of catch.
- No use of underwater breathing apparatus (i.e. SCUBA or hookah), other than a snorkel.
- No collection in State Marine Parks and the GBRMP.

The fishery is considered well managed, based on the suite of management measures outlined above, spatial closures within the Great Barrier Reef Marine Park (GBRMP) and the highly selective harvesting methods used.

The set of operational objectives, performance indicators and measures, and management responses contained in this PMS were developed by QPIF in consultation with stakeholders in 2008 and 2009. The PMS builds on the outputs of a QCF Ecological Risk Assessment workshop conducted in December 2007 which identified 12 taxa and two live rock collection areas were at low risk from the fishery. No other species or taxa were identified as greater than low risk.

The PMS was developed to allow QPIF to assess the effectiveness of its management arrangements and to meet a Commonwealth recommendation under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) which states that the Queensland Primary Industries and Fisheries are *to develop fishery specific objectives linked to performance indicators and performance measures for target stocks, protected species and impacts on the ecosystem.*

Performance measures developed for the QCF will be reported on in the Annual Status Report (ASR) for the fishery. QPIF have adopted a standard approach to harvest fisheries should an indicator be shown to have been triggered during the review. Within three months of becoming aware of a review event being triggered, QPIF will undertake a review of likely causes, and implications for sustainable management of the fishery. Pending the outcome of that review QPIF will finalise a timetable for the implementation of appropriate management responses.

	Objective	Performance indicator (quantitative info used to measure, e.g. CPUE)	Performance measure (e.g. defined changes, trends, review reference points)	Management response
Collected taxa	<p>Ensure coral resources are harvested in an ecologically sustainable manner, including:</p> <ul style="list-style-type: none"> <li>- Insuring the fishery against unsustainable effects of localised concentration of effort;</li> <li>- Insuring the fishery against unsustainable effects of targeted harvesting of particularly types of coral; and</li> <li>- Insuring the fishery against unsustainable effects of harvesting following severe environmental impacts on the resource.</li> </ul>	<p>Total annual catch (kg) of species of greater than negligible ecological risk (listed below; as determined by the coral fishery Ecological Risk Assessment (ERA))</p> <ul style="list-style-type: none"> <li>- <i>Trachyphyllia geoffroyi</i></li> <li>- <i>Acanthastrea lordhowensis</i></li> <li>- <i>Blastomussa merletti</i></li> <li>- <i>Blastomussa wellsi</i></li> <li>- <i>Scolymia vitensis</i></li> <li>- <i>Duncanopsammia axifuga</i></li> <li>- <i>Euphyllia glabrascens</i></li> <li>- <i>Plerogyra</i> spp</li> <li>- <i>Catalaphyllia jardinei</i></li> <li>- <i>Acropora</i> spp</li> <li>- <i>Gorgoniidae</i> spp</li> <li>- <i>Entacmea quadricolor</i></li> <li>- Live rock (Cairns and Keppel regions only)</li> </ul>	<p>Annual catch &gt;30% higher or lower than mean catch over the previous 2 years</p> <p>or</p> <p>Greater than 80% of the annual catch of a species occurs in a single 6nm x 6nm grid site.</p>	<p>QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF will review catch data and identify drivers of change (e.g. market forces etc) in consultation with industry. Subsequent management action will depend on the makeup of the influencing forces.</p> <p>When responding to bleaching observations, QPIF will adhere to the response timetable in the Coral Stress Response Plan which has been set dependent on the severity of the stress event.</p>
		<p>Total annual catch in high use management areas (reported through logbooks)</p>	<p><b>Cairns Region:</b> Live rock &gt;80t Ornamental &gt;5t Specialty (formerly "Live") &gt;13t</p> <p><b>Keppel Region:</b> Live rock &gt;24t Ornamental &gt;1t Specialty &gt;11t</p>	
		<p>Total quota usage (reported through AIVR)</p>	<p>Greater than 75% of quota used in less than 6 months</p>	

	Objective	Performance indicator (quantitative info used to measure, e.g. CPUE)	Performance measure (e.g. defined changes, trends, review reference points)	Management response
		Bleaching detected (GBRMPA Bleachwatch monitoring program)	Bleaching severity & interaction with fishery > Level 2 as defined in QPIF Coral Stress Response Plan	
Social	<ol style="list-style-type: none"> <li>1. Ensuring that operations of the QCF do not reduce the community benefit provided by coral resources in Queensland.</li> <li>2. Ensuring community confidence in management arrangements</li> </ol>	Number of DPIF ministerial letters referring to sustainability concerns with the Coral Fishery	Less than 5 Ministerial Letters are prepared per financial year.	QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF will review the circumstances relevant to each Ministerial Letter to determine whether further actions/ changes to the QCF management arrangements may be required.
	Ensuring adequate compliance with management arrangements for the fishery	Compliance activity reports	Less than 10% of the active vessels in the fleet are used to commit an offence under the <i>Fisheries Regulation 2008</i> .	QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF in collaboration with Harvest MAC to finalise a clear timetable for implementation of appropriate management responses. This would involve consultation with stakeholders.

	<b>Objective</b>	<b>Performance indicator (quantitative info used to measure, e.g. CPUE)</b>	<b>Performance measure (e.g. defined changes, trends, review reference points)</b>	<b>Management response</b>
Economic	Reducing impediments to economic efficiency / development of industry	Quota usage (reported through AIVR)	Less than 25% of fishery quota used in > 6 months.  More than 10 licence holders use < 25% of their quota holding.	QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF in collaboration with Harvest MAC to finalise a clear timetable for implementation of appropriate management responses. This would involve consultation with stakeholders.
Ecosystem	Ensure QCF resources harvested in an ecologically sustainable manner	Proportion of industry adopting identified best practice protocols  *Measure is dependent on formalisation of protocols within the industry developed Code of Conduct to be implemented in May 2009	Less than 80% of active operators have adopted best practice protocols	QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF in collaboration with Harvest MAC to finalise a clear timetable for implementation of appropriate management responses. This would involve consultation with stakeholders.

## ***Proposed review procedures***

Performance measures will be reported on annually in the Queensland Coral Fishery Annual Status Report.

The PMS is designed to be a working document and may be reviewed and updated to reflect available data and to address any issues that may have been highlighted by the data analysis process. Analysis will occur annually associated with monitoring the performance measures.

## ***References***

Fletcher, W, Cheeson, J, Sainsbury, K, Fisher, M, Hundloe, T and Whitworth, B 2002, *National ESD Reporting Framework: The "How To Guide" for wild capture fisheries*. FRDC 2000/145, Canberra, Australia ([www.fisheries-esd.com](http://www.fisheries-esd.com)).

Roelofs, A 2008, *Ecological Risk Assessment of the Queensland Coral Fishery*, Department of Primary Industries & Fisheries, Brisbane.

Roelofs, A & Silcock, R 2008, *A vulnerability assessment of coral taxa collected in the Queensland Coral Fishery*, Department of Primary Industries & Fisheries, Brisbane.

McCormack, C 2006, *Ecological Assessment of the Queensland Coral Fishery. A report to the Australian Government Department of the Environment and Heritage on the ecologically sustainable management of the Queensland Coral Fishery*, Department of Primary Industries and Fisheries, Brisbane, Australia.

Wabnitz, C, Taylor, M, Green, E and Razak, T 2003, *From Ocean to Aquarium. The global trade in marine ornamental species*, UNEP-WCMC, Cambridge, United Kingdom: 65p.

## Appendix 1

### Collected taxa - at risk species

<p>Rationale for inclusion of issue</p>	<p>The main purpose of the <i>Fisheries Act 1994</i> (the Act) includes applying and balancing the principles of ecologically sustainable development (ESD). Among the principles of ESD, as defined in the Act are:</p> <ul style="list-style-type: none"> <li>• “protecting biological diversity, ecological processes and life-support systems”</li> <li>• “the precautionary principle”, which is defined in the Act as “the principle that , if there is a threat of serious or irreversible environmental damage, lack of scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation, because of the threat”.</li> </ul> <p>The QCF fishery underwent an Ecological Risk Assessment (ERA) (Roelofs 2008; Roelofs &amp; Silcock 2008) to determine taxa at ecological risk from the activities of the fishery. The assessment determined only 11 taxa and live rock collection in the Coral Collection Areas were a low ecological risk. No high or moderate risk species were identified. It is appropriate that a measure was developed to monitor the harvest of these species closely given their higher risk category.</p> <p>Additionally all hard coral species are listed under the Convention for International Trade in Endangered Species (CITES). The ERA identified the particular species at risk from the QCF and these will receive closer monitoring through this PMS.</p>
<p>Operational objective</p>	<p><b>Ensure coral resources are harvested in an ecologically sustainable manner, including:</b></p> <ul style="list-style-type: none"> <li>- <b>Insuring the fishery against unsustainable effects of localised concentration of effort;</b></li> <li>- <b>Insuring the fishery against unsustainable effects of targeted harvesting of particularly types of coral</b></li> </ul>
<p>Indicator</p>	<p><b>Total annual catch (kg) of species of greater than negligible ecological risk (listed below; as determined by the coral fishery Ecological Risk Assessment (ERA))</b></p> <ul style="list-style-type: none"> <li>- <i>Trachyphyllia geoffroyi</i></li> <li>- <i>Acanthastrea lordhowensis</i></li> <li>- <i>Blastomussa merletti</i></li> <li>- <i>Blastomussa wellsi</i></li> <li>- <i>Scolymia vitensis</i></li> <li>- <i>Duncanopsammia axifuga</i></li> <li>- <i>Euphyllia glabrascens</i></li> <li>- <i>Plerogyra</i> spp</li> <li>- <i>Catalaphyllia jardinei</i></li> <li>- <i>Acropora</i> spp</li> <li>- <i>Gorgoniidae</i> spp</li> <li>- <i>Entacmea quadricolor</i></li> <li>- Live rock (Cairns and Keppel regions only)</li> </ul>

<b>Performance measure</b>	<b>1. Annual catch &gt; 30% higher or lower than mean catch over the previous 2 years or 2. Greater than 80% of the annual catch of a species occurs in a single 6nm x 6nm gridsite.</b>
Justification	The ERA of the fishery in 2007 identified 11 taxa and live rock collection in the Cairns and Keppel Coral Collection Areas as at low risk from the fishery. The two measures account for overall unsustainable declines at the fishery level and potential unsustainable harvest within localised areas (6 x 6 nm).
Data requirements/availability	Commercial logbook data – QCF logbooks modified to ensure harvest of identified taxa and catch categories is monitored through compulsory catch records.
Monitoring and assessment of PMS	Logbook data will be monitored annually and reported on in context of the performance measures in the Annual Status Report for the fishery. QPIF will review catch data at taxa/category level to identify drivers of change (e.g. market forces etc) in consultation with industry. Subsequent management action will depend on the magnitude of the change and the key driving forces identified.
Evaluation of current fishery performance	<ol style="list-style-type: none"> <li>1. Indicator not measured – 2 years of logbook data are required. The indicator will be measured following the completion of the 2008–09 season.</li> <li>2. Indicator partially measured - not triggered for taxa recorded on current logsheet (does not include species breakdown for <i>Blastomussa</i>, <i>Plerogyra</i> spp. or <i>Entacmea quadricolor</i> – logsheet is in process of amendment to meet the PMS and will come into effect with release of the new Policy for the Management of the Coral Fishery on July1 2009).</li> </ol>
Robustness <u>Levels (from Fletcher <i>et al.</i> 2002)</u> <u>High</u> – The indicator is a direct measure of the objective, or if indirect, is known to closely reflect changes in the area of interest. <u>Medium</u> – The indicator is suspected to be reasonably accurate measure against the objective, or if the known error is in the conservative direction <u>Low</u> – The degree to which the indicator measures against the objective is largely unknown, or known to be low.	<b>Medium</b> <ul style="list-style-type: none"> <li>• The indicator is based on the evaluation of Queensland logbook data that provides compulsory reporting of daily fishing activities and harvest in the QCF. While there are accuracy and compliance issues with any logbook program, QPIF considers that the information provides a valuable monitoring tool.</li> </ul>

Current and future management	<p>Current—controls outlined in the Policy for the Management of the Coral Fishery, limited entry, gear and vessel restrictions—harvesting restricted to hand collection, spatial management measures (e.g. CCAs, marine protected areas).</p> <p>Future—Fishery operators' reporting requirements will be refined to ensure at risk species collection data is recorded through the compulsory logbook.</p> <p>– The indicator may need to consider gradual decreases/increases in take over a longer period of 3–10 years in species abundance. Studies are now suggesting that the degradation of reefs from anthropogenic impacts is usually very gradual. The PMS will be reviewed annually while the ERA which informs development of the PMS will be reviewed every three years. Both processes aim to consider the latest scientific information in their reviews.</p>
Actions if performance measure is triggered	<p>QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF will review catch data and identify drivers of change (e.g. market forces etc) in consultation with industry. Subsequent management action will depend on the makeup of the influencing forces.</p>
Comments and action	<p>Changes to logbook reporting to record information on the low risk species is a priority for implementation.</p>
External drivers	<ul style="list-style-type: none"> <li>• Targeting activity is influenced heavily by market forces. Assessments of sustainability risks if the Review Reference Points (RRPs) are triggered will need to take market drivers into account.</li> </ul>
Other issues	<p>Nil</p>

## **All collected taxa - unsustainable harvest through localised concentrations of fishing effort**

Rationale for inclusion of issue	<p>The main purpose of the <i>Fisheries Act 1994</i> (the Act) includes applying and balancing the principles of ecologically sustainable development (ESD). Among the principles of ESD, as defined in the Act are:</p> <ul style="list-style-type: none"> <li>• “protecting biological diversity, ecological processes and life-support systems”</li> <li>• “the precautionary principle”, which is defined in the Act as “the principle that , if there is a threat of serious or irreversible environmental damage, lack of scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation, because of the threat”.</li> </ul> <p>There are two designated ‘high use’ areas termed Coral Collection Areas (CCAs) in the QCF (Cairns &amp; Keppel). CCAs represent areas with historically high concentrations of fishing effort. As a management measure to control the potential excessive collection in these areas, the Policy for the Management of the Coral Fishery introduced Review Reference Points that if reached would initiate investigation into the collection activities in the region and whether management intervention was required. CCAs are to be monitored annually for indications of unsustainable harvest levels brought about by localised concentration of effort through this PMS measure.</p> <p>Additionally all hard coral species are listed under the Convention for International Trade in Endangered Species (CITES). The ERA identified the particular species at risk from the QCF and these will receive closer monitoring through the previous PMS measure. All other hard coral species require a level of monitoring to satisfy our international obligations under CITES.</p>
<b>Operational objective</b>	<p><b>Ensure coral resources are harvested in an ecologically sustainable manner, including:</b></p> <ul style="list-style-type: none"> <li>- <b>Insuring the fishery against unsustainable effects of localised concentration of effort;</b></li> </ul>
<b>Indicator</b>	<p><b>Total annual catch in high use management areas (reported through logbooks)</b></p>
<b>Performance measure</b>	<p><b>1. Cairns Region:</b>  Live rock &gt;80t  Ornamental &gt;5t  Specialty (formerly “Live”) &gt;13t</p> <p><b>Keppel Region:</b>  Live rock &gt;24t  Ornamental &gt;1t  Specialty &gt;11t</p> <p><b>2. &gt;75% of quota used in &lt;6 months</b></p>
Justification	<p>There is potential for the designated high use areas (termed CCAs) to undergo significant collection pressure. QPIF aim to ensure that the amount of fishing pressure in these areas is closely monitored. Review Reference Points have been developed in the Cairns and Keppel CCAs for the major catch categories. Potentially unsustainable localised catches of taxa identified as low risk are monitored in the previous measure. This measure will also ensure the monitoring of CITES listed hard coral species that were ranked by the ERA as not at risk from the fishery.</p>

Data requirements/availability	Commercial logbook data – total catch and effort for individual CCAs.																									
Monitoring and assessment of PMS	Logbook data will be monitored annually and reported on in context of the performance measures in the Annual Status Report for the fishery. QPIF will review catch data at species level to identify drivers of change (e.g. market forces etc) in consultation with industry. Subsequent management action will depend on the makeup of the influencing forces.																									
Evaluation of current fishery performance	<p>1. Not triggered.</p> <table border="1"> <thead> <tr> <th>Product form</th> <th>Year</th> <th>Cairns (t)</th> <th>Keppel (t)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Live rock</td> <td>06-07</td> <td>54</td> <td>16</td> </tr> <tr> <td>07-08</td> <td>51</td> <td>12</td> </tr> <tr> <td rowspan="2">Ornamental</td> <td>06-07</td> <td>2</td> <td>-</td> </tr> <tr> <td>07-08</td> <td>2</td> <td>&lt;1</td> </tr> <tr> <td rowspan="2">Specialty coral</td> <td>06-07</td> <td>8</td> <td>3</td> </tr> <tr> <td>07-08</td> <td>8</td> <td>3</td> </tr> </tbody> </table> <p>2. Not triggered – only 52.5% of the overall quota used in 2007–08</p>	Product form	Year	Cairns (t)	Keppel (t)	Live rock	06-07	54	16	07-08	51	12	Ornamental	06-07	2	-	07-08	2	<1	Specialty coral	06-07	8	3	07-08	8	3
Product form	Year	Cairns (t)	Keppel (t)																							
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Robustness <u>Levels (from Fletcher <i>et al.</i> 2002 – refer to first indicator for level definitions)</u>	<p><b>Medium</b></p> <ul style="list-style-type: none"> <li>The indicator is based on the evaluation of Queensland logbook data that provides compulsory reporting of daily fishing activities and harvest in the QCF. While there are accuracy and compliance issues with any logbook program, QPIF considers that the information provides a valuable monitoring tool.</li> </ul>																									
Current and future management	<p>Current—controls outlined in the Policy for the Management of the Coral Fishery, limited entry, gear and vessel restrictions—harvesting restricted to hand collection, spatial management measures (e.g. CCAs, marine protected areas).</p> <p>Future – Current system is comprehensive and adequate for managing the fishery.</p>																									
Actions if performance measure is triggered	QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF will review catch data and identify drivers of change (e.g. market forces etc) in consultation with industry. Subsequent management action will depend on the makeup of the influencing forces.																									
Comments and action	Nil																									
External drivers	<ul style="list-style-type: none"> <li>High fuel costs may significantly influence the economics of fishing in the QCF (e.g. reducing the distance travelled for collection trips). The SMAs were originally selected partly based on their close proximity to transport hubs such as airports. SMAs may come under increased pressure as fuel costs increase.</li> </ul>																									
Other issues	Nil																									

## **Collected taxa – mitigating fishery flow on effects from impacts on critical coral habitat**

Rationale for inclusion of issue	<p>The main purpose of the <i>Fisheries Act 1994</i> (the Act) includes applying and balancing the principles of ecologically sustainable development (ESD). Among the principles of ESD, as defined in the Act are:</p> <ul style="list-style-type: none"> <li>• “protecting biological diversity, ecological processes and life-support systems”</li> <li>• “the precautionary principle”, which is defined in the Act as “the principle that , if there is a threat of serious or irreversible environmental damage, lack of scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation, because of the threat”.</li> </ul> <p>Healthy, productive coral structures underpin reef fish and other invertebrate communities. The loss of or damage to these structures through natural or anthropogenic impacts (e.g. coral bleaching, cyclones, freshwater runoff etc.) has been shown to have flow-on impacts to fish and invertebrate communities closely associated with this habitat. QPIF must ensure that fishery activity in the QCF does not exacerbate these impacts by establishing mechanisms to modify collection activity in the event of an impact, and that the modification to collection activity is commensurate with the level or severity of the impact.</p>
<b>Operational objective</b>	<b>Insure against unsustainable effects of harvesting following severe impacts on critical coral habitat</b>
<b>Indicator</b>	<b>Bleaching detected (GBRMPA Bleachwatch monitoring program) as defined in QPIF Coral Stress Response Plan</b>
<b>Performance measure</b>	<b>Bleaching severity &amp; interaction with fishery is &gt; Level 2 as defined in QPIF Coral Stress Response Plan</b>
Justification	<p>The aim of the performance measure is to mitigate the potential exacerbating impacts of fishing activity on damaged coral ecosystems to provide sufficient time for a system to return to a relatively healthy state. The key objectives of the Coral Stress Response Plan are to:</p> <ul style="list-style-type: none"> <li>• ensure that fishing activities do not compromise the resilience of coral reefs that are subject to stress events</li> <li>• maintain open communication with all stakeholders to achieve balanced and appropriate fishery-based responses when coral reefs exhibit signs of stress (i.e. bleaching)</li> <li>• improve stakeholders’ understanding of the interactions between coral bleaching events (most apparent indicator of stress) and the Queensland Coral Fishery and MAFF.</li> </ul> <p>The Coral Stress Response Plan is integrated with the GBRMPA Coral Bleaching Response Plan and the industry Code of Conduct.</p>
Data requirements/availability	<p>Access to Bleachwatch data reports. BleachWatch is a program that collates observation data on coral condition that has been collected and reported by community members/reef users.</p> <p>Commercial logbook data – total catch and effort for combined species.</p>
Monitoring and assessment of PMS	<p>The monitoring process is outlined in the QPIF Coral Stress Response Plan. Bleachwatch reports will be monitored. If reports of early signs of bleaching are received from BleachWatch participants in January, site inspections are conducted by GBRMPA in late January or early February. If substantial bleaching is observed, full ecological surveys are undertaken by GBRMPA in March (Pers. comm., Johanna Johnson, 2007).</p> <p>QPIF will review catch data at species level to identify levels of fishery activity in stressed coral areas and assess whether subsequent action is required.</p>

Evaluation of current fishery performance	Not measured.
Robustness Levels (from Fletcher <i>et al.</i> 2002 – refer to first indicator for level definitions)	<b>Medium</b>
Current and future management	Current—controls outlined in the Policy for the Management of the Coral Fishery, limited entry, gear and vessel restrictions—harvesting restricted to hand collection, spatial management measures (e.g. CCAs, marine protected areas).  Future—Industry/government partnership agreements (e.g. Memorandum of Understanding – MOUs) and Industry Codes of Conduct.
Actions if performance measure is triggered	When responding to bleaching observations, QPIF will adhere to the response timetable in the Coral Stress Response Plan which has been set dependent on the severity of the stress event.
Comments and action	Nil
External drivers	<ul style="list-style-type: none"> <li>This PMS measure is tied to the Coral Stress Response Plan. Climate change is predicted to increase the level of coral bleaching. Greater political pressures to protect coral communities for future generations may influence the response gradient currently in place in the Coral Stress Response Plan.</li> </ul>
Other issues	Nil

## **Social – community confidence in management arrangements**

Rationale for inclusion of issue	<p>The main purpose of the <i>Fisheries Act 1994</i> (the Act) includes applying and balancing the principles of ecologically sustainable development (ESD). Among the principles of ESD, as defined in the Act are:</p> <ul style="list-style-type: none"> <li>• “protecting biological diversity, ecological processes and life-support systems”</li> <li>• “the precautionary principle”.</li> </ul> <p>The suite of management arrangements currently in place for the QCF ensure the principles of ESD are adhered to and provide community confidence that Queensland’s wild fisheries resources are being sustainably managed for the long term. The public have the right to question these arrangements. A common method for expressing community dissatisfaction is through letters to the Minister for Primary Industries &amp; Fisheries.</p>
Operational objective	<p><b>1. Ensuring that operations of the QCF do not reduce the community benefit provided by coral resources in Queensland.</b></p> <p><b>2. Ensuring community confidence in management arrangements</b></p>
Indicator	<b>Number of DPIF ministerial letters referring to sustainability concerns with the Coral Fishery</b>
Performance measure	<b>Greater than 5 Ministerial Letters are prepared per calendar year</b>
Justification	The measure of > 5 letters per annum may indicate significant community concern that the principles of ESD are not being adhered to.
Data requirements/availability	Ministerial letters
Monitoring and assessment of PMS	The content of each letter will be assessed to determine whether there is a significant concern that the conduct of the fishery is not supportive of sustainability.
Evaluation of current fishery performance	Not assessed. To be reviewed annually.
Robustness <u>Levels (from Fletcher <i>et al.</i> 2002 – refer to first indicator for level definitions)</u>	<p><b>Low</b></p> <ul style="list-style-type: none"> <li>• This measure is untested as to whether it will be sufficient to ensure the objective. Measuring of this indicator after the first year will provide an understanding of robustness.</li> </ul>
Current and future management	<p>Current—controls outlined in the Policy for the Management of the Coral Fishery, limited entry, gear and vessel restrictions—harvesting restricted to hand collection, spatial management measures (e.g. CCAs, marine protected areas).</p> <p>Future—Industry/government partnership agreements (eg. MOUs) and Industry Codes of Conduct.</p>
Actions if performance measure is triggered	QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF will review the circumstances relevant to each Ministerial Letter to gauge whether further actions/ changes to the QCF management arrangements may be required.
Comments and action	Nil
External drivers	Nil
Other issues	Nil

## Social – compliance

Rationale for inclusion of issue	<p>The main purpose of the <i>Fisheries Act 1994</i> (the Act) includes applying and balancing the principles of ecologically sustainable development (ESD). Among the principles of ESD, as defined in the Act are:</p> <ul style="list-style-type: none"> <li>• “enhancing individual and community wellbeing through economic development that safeguards the wellbeing of future generations”</li> <li>• “protecting biological diversity, ecological processes and life-support systems”.</li> </ul> <p>QCF management arrangements have been established to ensure sustainability of the target species and other ecosystem components. Ensuring adequate compliance with fishery regulations strengthens the protection to biological diversity, ecological processes and critical habitats provided by these management arrangements.</p>
<b>Operational objective</b>	<b>Ensuring adequate compliance with management arrangements for the fishery</b>
<b>Indicator</b>	<b>Compliance activity reports</b>
<b>Performance measure</b>	<b>Greater than 10% of the active vessels in the fleet are used to commit an offence under the <i>Fisheries Regulation 2008</i></b>
Justification	<ul style="list-style-type: none"> <li>• The measure equates to approximately 3 out of 34 boats committing an offence – this level of non-compliance is deemed significant and warrants a management response.</li> <li>• The measure recognises that compliance rate (number of offences per inspection) is a poor indicator of compliance levels for small fleets.</li> </ul>
Data requirements/availability	Compliance activity reports in relation to the QCF.
Monitoring and assessment of PMS	Compliance activity reports will assess compliance against the performance measure and be reported in the Annual Status Report.
Evaluation of current fishery performance	Indicator has not been triggered. No commercial or recreational offences relating to the QCF were detected in 2007–08.
Robustness <u>Levels (from Fletcher <i>et al.</i> 2002 – refer to first indicator for level definitions)</u>	<b>Medium</b> Compliance Activity Reports have improved the QPIF ability to track compliance in the fishery. A compliance risk assessment for the QCF has been conducted and a strategy is in place to deal with risks ranked as moderate or higher.
Current and future management	<p>Current—controls outlined in the Policy for the Management of the Coral Fishery, limited entry, gear and vessel restrictions—harvesting restricted to hand collection, spatial management measures (e.g. CCAs, marine protected areas).</p> <p>Future—Industry/government partnership agreements (eg. MOUs) and Industry Codes of Conduct.</p>
Actions if performance measure is triggered	QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF in collaboration with Harvest MAC to finalise a clear timetable for implementation of appropriate management responses. This would involve consultation with stakeholders.
Comments and action	Compliance strategy incorporating the outcomes of the Compliance Risk Assessment workshop is to be developed and implemented
External drivers	QBFP capacity to survey this remote fishery
Other issues	Nil

## Economic

Rationale for inclusion of issue	<p>The main purpose of the <i>Fisheries Act 1994</i> (the Act) includes applying and balancing the principles of ecologically sustainable development (ESD). Among the principles of ESD, as defined in the Act are:</p> <ul style="list-style-type: none"> <li>• “enhancing individual and community wellbeing through economic development that safeguards the wellbeing of future generations”</li> <li>• “protecting biological diversity, ecological processes and life-support systems”.</li> </ul> <p>QPIF is an economic development agency with primary aims of profitable primary industries and long-term sustainability of our natural resources. QPIF will use this measure to provide an early warning signal if business conditions are becoming less conducive to deriving profit for the Queensland Coral industry on an ecological sustainable basis.</p>
<b>Operational objective</b>	<b>Reducing impediments to economic efficiency and/or development of industry</b>
<b>Indicator</b>	<b>Quota usage (reported through AIVR)</b>
<b>Performance measure</b>	<p><b>Less than 25% of fishery quota used in &gt;6 months.</b></p> <p><b>More than 10 licence holders use &lt;25% of their quota holding.</b></p>
Justification	The two measures will provide an early warning of very low commercial activity in the fishery that may require investigation by QPIF as to the causes. These measures will identify whether declines in commercial activity are being caused by the arrangements under the Policy for the Management of the Coral Fishery and whether steps can be taken from a management perspective to remedy the issues.
Data requirements/availability	Logbook records and quota usage reported through AIVR.
Monitoring and assessment of PMS	QPIF will review logbook records at 6 month intervals to determine the level of quota used and the catch history associated with the active licences in the QCF.
Evaluation of current fishery performance	Indicator has not been measured.
Robustness <u>Levels (from Fletcher <i>et al.</i> 2002 – refer to first indicator for level definitions)</u>	<p><b>Medium</b></p> <p>See Justification</p>
Current and future management	<p>Current—controls outlined in the Policy for the Management of the Coral Fishery, limited entry, gear and vessel restrictions—harvesting restricted to hand collection, spatial management measures (e.g. CCAs, marine protected areas).</p> <p>Future—Industry/government partnership agreements (eg. MOUs) and industry Codes of Conduct.</p>

Actions if performance measure is triggered	QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF in collaboration with Harvest MAC to finalise a clear timetable for implementation of appropriate management responses. This would involve consultation with stakeholders.
Comments and action	Nil
External drivers	High fuel costs may significantly influence the economics of fishing in the QCF. In its role as an economic development agency, QPIF review management arrangements to provide for profitable primary industries in an ecological sustainable manner. External factors such as rising fuel costs are considered during management arrangement reviews.
Other issues	Nil

## ***Ecosystem***

Rationale for inclusion of issue	<p>The main purpose of the <i>Fisheries Act 1994</i> (the Act) includes applying and balancing the principles of ecologically sustainable development (ESD). Among the principles of ESD, as defined in the Act are:</p> <ul style="list-style-type: none"> <li>• “protecting biological diversity, ecological processes and life-support systems”</li> <li>• “the precautionary principle”, which is defined in the Act as “the principle that , if there is a threat of serious or irreversible environmental damage, lack of scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation, because of the threat”.</li> </ul> <p>While the Ecological Risk Assessment of the fishery established that this fishery is having minimal impact on the species base it collects from, commercial operators recognise the industry has the potential to harm the ecosystem through indiscriminate collection practices. The industry peak representative body, ProVision Reef, developed a Code of Conduct outlining best practice fish handling and collection techniques that are aimed at reducing the risk of ecosystem harm.</p>
<b>Operational objective</b>	<b>Ensure QCF resources harvested in an ecologically sustainable manner</b>
<b>Indicator</b>	<b>Proportion of industry adopting identified best practice protocols*</b> *Measure is dependent on formalisation of protocols within the industry developed Code of Conduct to be implemented in May 2009
<b>Performance measure</b>	<b>Less than 80% of active operators have adopted best practice protocols</b>
Justification	The measure is a proxy for ecosystem health and will indicate the level of commitment to best practice, non-harmful collection techniques by industry members.
Data requirements/availability	Membership levels in the peak representative body - ProVision Reef.
Monitoring and assessment of PMS	Membership data will be monitored annually and reported on in context of the performance measures in the Annual Status Report for the fishery.

Evaluation of current fishery performance	<p>This is an aspirational performance measure. Indicator has not been measured as the Code of Conduct has not been implemented formally. This is planned to occur in May 2009.</p> <p>However the membership statistics indicate that the indicator will not be triggered in 2008–09 with the 88% of active licences members of Pro-vision Reef.</p>
Robustness <u>Levels (from Fletcher <i>et al.</i> 2002 – refer to first indicator for level definitions)</u>	<p><b>Low</b></p> <p>Measure robustness is dependent on the best practice techniques outlined in the Code of Conduct once developed.</p>
Current and future management	<p>Current—controls outlined in the Policy for the Management of the Coral Fishery, limited entry, gear and vessel restrictions—harvesting restricted to hand collection, spatial management measures (e.g. CCAs, marine protected areas).</p> <p>Future—Current system is comprehensive and adequate for managing the fishery.</p>
Actions if performance measure is triggered	<p>QPIF will report on the PMS annually in the Annual Status Report following the availability of all relevant data. Within three months of becoming aware that a review has been triggered, QPIF &amp; F in collaboration with Harvest MAC to finalise a clear timetable for implementation of appropriate management responses. This would involve consultation with stakeholders.</p>
Comments and action	<p>Ecosystem objectives will need further development as more information on the ecosystem indicators is received.</p>
External drivers	<p>Climate change may influence regional ecosystems and result in change of collection practices</p>
Other issues	<p>Nil</p>