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.

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained in this report.


Copyright protects this material. Except as permitted by the Copyright Act 1968 (Cth), reproduction by any means (photocopying, electronic, mechanical, recording or otherwise), making available online, electronic transmission or other publication of this material is prohibited without the prior written permission of the Queensland Primary Industries and Fisheries.

Inquiries should be addressed to:

Intellectual Property and Commercialisation Unit
Queensland Primary Industries and Fisheries
GPO Box 46
Brisbane Qld 4001

or

copyright@dpi.qld.gov.au
Tel: +61 7 3404 6999
Introduction

The Deep Water Fin Fish Fishery (DWFFF) is a small commercial multi-hook line fishery that operates in Queensland waters deeper than 200 m. Target species include various coral reef fin fish (e.g. emperors, cods and lutjanids) and rocky reef fin fish (e.g. pearl perch) as well as a range of other species (including various pelagics). Most product is landed whole and sold domestically, with occasional exports.

This report covers the period 1 July 2007 – 30 June 2008.

Fishery profile 2007–08

Total harvest from all sectors: approximately 47 t
Commercial harvest: approximately 47 t
Recreational harvest: nil using multi-hook apparatus
Indigenous harvest: nil using multi-hook apparatus
Charter harvest: nil using multi-hook apparatus
Commercial Gross Value of Production (GVP): approximately $330 000
Number of licences: 7 L8 fishery symbols (5 with L8 & RQ)
Commercial boats accessing the fishery: 6
Fishery season: most fishing occurs during winter months

Source: QPIF CFISH database, 12 January 2009

Description of the fishery

Fishing methods

Commercial operators working in the DWFFF are permitted to use multi-hook apparatus on trotline or dropline. A maximum of six vertically set droplines, with not more than 50 hooks on each, can be used at one time. Alternatively, operators can use up to three bottom set trotlines, with no more than a total of 300 hooks.

In 2007 limited trap fishing permits were also issued in this fishery to collect further information on the sustainability and viability of the fishing method. These trips require a high coverage by fisheries observers.

Fishing area

Commercial fishers with an L8 fishery symbol are permitted to operate in east coast waters deeper than 200 m (see Figure 1). There is some overlap between the L8 fishery area and the Great Barrier Reef Marine Park (GBRMP). No more than three lines with a total of six hooks per line can be used by operators in the GBRMP.

Main management methods used
Management of the DWFFF is the responsibility of the Department of Employment, Economic development, and Innovation (DEEDI), of which Queensland Primary Industries and Fisheries (QPIF) is a part. A comprehensive set of management arrangements is in place under the Fisheries (Coral Reef Fin Fish) Management Plan 2003 to manage the coral reef fin fish harvest component of this fishery. The range of input and output controls used to manage the DWFFF includes:

- Limited entry
- Prohibition on taking barramundi (*Lates calcarifer*), pink snapper (*Pagrus auratus*), Spanish mackerel (*Scomberomorus commerson*), red emperor (*Lutjanus sebae*), and coral trout (*Plectropomus spp*) when using multi-hook apparatus
- Minimum size limits that apply to a range of species, including coral reef fin fish and rocky reef fin fish
- Restrictions on the type of apparatus that can be used (i.e. number of lines and hooks)
- Restriction on the size of boat that can be used in the fishery
- Requirement to have an RQ fishery symbol and quota to retain any coral reef fin fish that are taken.

Approximate allocation between sectors

The DWFFF is a purely commercial fishery. Recreational and charter fishers are not permitted to use any more than six hooks in total at one time. Recreational and charter fishers may access the fishery area using limited gear, however the remoteness of the fishery area makes it relatively inaccessible. Recreational and charter fishers do take some of the same species that are targeted in the DWFFF, however, they are subject to recreational management restrictions under fisheries legislation.

Fishery accreditation under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act)

A Wildlife Trade Operation (WTO) approval, acknowledging that the fishery was being managed in an ecologically sustainable manner, and allowing the export of deep water fin fish caught in Queensland, was granted in October 2005 under Part 13A of the EPBC Act. This approval expired on 28 October 2008, and a new three-year WTO has been issued until 28 October 2011.

Catch statistics

Commercial catch statistics are collected through the QPIF compulsory daily logbook program. Prior to October 2006, L8 fishers used the same logbook as both the Coral Reef Fin Fish (CRFF) and Rocky Reef Fin Fish (RRFF) fishers, resulting in difficulties accurately separating the catches taken in the deep water fishery. As a result, QPIF introduced a new logbook.
The total weights recorded for each species cannot be reported due to QPIF’s five-boat confidentiality policy, however QPIF do monitor catch rates and compositions annually.
The DWFFF is a relatively small-scale fishery operating over a large geographical area, with multi-hook apparatus permitted for use on only seven commercial licences. Based on current harvest levels, catch rates and management arrangements, the fishery is considered sustainable. In 2008, QPIF removed a number of review events from the *Fisheries (Coral Reef Fin Fish) Management Plan 2003*, which became obsolete with the development of the joint Performance Measurement System (PMS) for the CRFFF and DWFFF. The new performance measurement system formalises the fishery objectives, performance indicators, and management responses that have been developed by QPIF with input from stakeholders.

Independent fishery observers have been introduced into the fishery on a voluntary basis, which will facilitate improved data collection (particularly encouraging accurate species identification and documenting by-catch species) and consequently better monitoring and assessment of the fishery.

**Progress in implementing Department of Environment, Water, Heritage and the Arts (DEWHA) recommendations**

DEWHA made a range of recommendations to QPIF during its assessment of the fishery, in order to address any perceived risks or uncertainties. In November 2008 the fishery was reassessed and a new three-year WTO was granted, along with a new set of conditions and recommendations. Details of the final progress QPIF has made in relation to the Round 1 recommendations are provided in Table 1. Progress against Round 2 recommendations are in Table 2.

---

**Table 1: Progress against Round 1 DEWHA recommendations for the DWFFF.**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>QPIF to inform DEWHA of any intended amendments to the management arrangements that may affect sustainability of the target species or negatively impact on by-catch, protected species or the ecosystem</td>
<td>Completed and ongoing&lt;br&gt;No changes were made to management arrangements in 2007–08 that impacted negatively on resource sustainability.</td>
</tr>
<tr>
<td>By the end of 2006 QPIF to develop fishery specific objectives linked to performance indicators and performance measures for target species, by-catch, protected species (fish species) and impacts on the ecosystem.</td>
<td>Completed&lt;br&gt;QPIF and the ReefMAC SAG developed PMSs for a range of line fisheries during 2006 and 2007. The PMS was finalised and implemented in July 2008.</td>
</tr>
<tr>
<td>QPIF to monitor the status of the fishery in relation to the performance measures once developed. Within three months of becoming aware of a performance measure not being met, QPIF to finalise a clear timetable for the implementation of appropriate management responses.</td>
<td>Completed&lt;br&gt;As above.</td>
</tr>
<tr>
<td>From 2006, QPIF to report publicly on the status of the DFFF on an annual basis including explicitly reporting against performance measures once developed.</td>
<td>Completed and ongoing&lt;br&gt;This annual status report is the third to be completed for the fishery since its WTO approval was gazetted in late 2005.</td>
</tr>
<tr>
<td>QPIF to implement a program to validate logbook data in the Deepwater Fin Fish Fishery by June 2006.</td>
<td>Completed and ongoing&lt;br&gt;The logbook validation project for this fishery was completed in September 2006 and considered by fishery managers, logbook and compliance officers.</td>
</tr>
</tbody>
</table>
Recommendation Progress

QPIF instigate measures to ensure compliance with the CRFFF Management Plan and relevant legislation, in particular compliance with the prohibition of the take of snapper by DFFF operators and take of coral reef fin fish by DFFF operators without appropriate quota symbols.

Completed
QPIF conducted a compliance risk assessment for the DWFFF in June 2006 in order to determine compliance priorities and allow for the most effective targeting of QPIF’s Queensland Boating and Fisheries Patrol (QBFP) resources to higher risk issues.

Outcomes of the risk assessment were incorporated into QBFP district operational plans in 2006.

QPIF to enhance fishery specific data collection in the DFFF to inform stock status assessments

Completed
QPIF introduced a new logbook for the DFFF in October 2006. Independent fishery observers have also been introduced into the fishery to identify catches and obtain information on bycatch.

QPIF to implement an ongoing and robust program to collect information on the composition, abundance and life status of bycatch (including shark species, and discards of target species) in the DFFF by June 2006.

Completed
The QPIF fishery observer program also represents the Department’s program for collecting information on the composition, abundance and status of bycatch in the DWFFF. See Fishery observer program section.

QPIF to assess the need for bycatch mitigation measures in the DFFF based on relevant research and bycatch data, when collected, and implement such measures where required, by June 2008.

No action necessary at this stage
Data collected by independent observers suggests that bycatch in the fishery is extremely low (i.e. 0.4%). Because of the already highly selective nature of the fishery, QPIF does not consider it necessary at this time to introduce any bycatch mitigation measures. In addition, because the scale of the fishery is small, the level of risk to bycatch is considered negligible. If the observer program detects a significant increase in bycatch taken in the fishery, the need for bycatch mitigation measures will be reviewed.

QPIF to continue to improve the level of species specific reporting of both Reef Quota and non-Reef Quota species in the DWFFF.

In progress
QPIF are currently reviewing the Fisheries Observer Program (FOP) in order to re-prioritise the tasks conducted by observer staff. Outcomes are expected by mid 2009.

QPIF to implement management arrangements to ensure the take of sharks and rays is sustainable.

In progress
Changes to management arrangements for shark and ray, which will apply to the DWFFF, were developed as part of the East Coast Inshore Fin Fish Fishery (ECIFFF) review. Changes include commercial size limits and in-possession limits which will come into effect on 1 July 2009.

Table 2: Progress against Round 2 DEWHA recommendations for the DWFFF.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>QPIF to continue to improve the level of species specific reporting of both Reef Quota and non-Reef Quota species in the DWFFF.</td>
<td>In progress</td>
</tr>
<tr>
<td>QPIF are currently reviewing the Fisheries Observer Program (FOP) in order to re-prioritise the tasks conducted by observer staff. Outcomes are expected by mid 2009.</td>
<td></td>
</tr>
<tr>
<td>QPIF to implement management arrangements to ensure the take of sharks and rays is sustainable.</td>
<td>In progress</td>
</tr>
<tr>
<td>Changes to management arrangements for shark and ray, which will apply to the DWFFF, were developed as part of the East Coast Inshore Fin Fish Fishery (ECIFFF) review. Changes include commercial size limits and in-possession limits which will come into effect on 1 July 2009.</td>
<td></td>
</tr>
</tbody>
</table>
**Recommendation**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>QPIF to continue to monitor and, where appropriate, improve the identification and recording of the composition and quantity of retained sharks and rays.</td>
<td>In progress</td>
</tr>
<tr>
<td>Improvements in the identification and documentation of sharks and rays are being undertaken across several fisheries, including the DWFFF, as a part of the shark and ray review in the ECIFFF.</td>
<td></td>
</tr>
<tr>
<td>QPIF to develop objectives and performance measures for by-product species taken in the DWFFF.</td>
<td>In progress</td>
</tr>
<tr>
<td>A performance indicator for by-product species in this fishery will be developed in line with the PMS review, mid 2009.</td>
<td></td>
</tr>
<tr>
<td>DPI&amp;F to continue to improve validation of logbook catch and effort data and protected species reporting, including a review of the level of observer coverage needed to allow for effective implementation of the Performance Measurement System.</td>
<td>In progress</td>
</tr>
<tr>
<td>QPIF are currently reviewing the Fisheries Observer Program (FOP) in order to re-prioritise the tasks conducted by observer staff. Outcomes are expected by mid 2009.</td>
<td></td>
</tr>
</tbody>
</table>

---

**Performance against fishery objectives**

In 2008, QPIF finalised a joint performance measurement system which will now be reported on annually for the CRFF and DWFF fisheries. The PMS functions as a transparent reporting framework that outlines the measures against which QPIF can assess and report on the performance of the fishery (Table 3). Within three months of becoming aware that a performance measure has been triggered, QPIF is required to finalise a clear timetable for implementation of appropriate management responses. QPIF became aware of the triggers in February 2009. The results of a detailed analysis of the catch and effort data will be considered by ReefMAC and ReefMAC Scientific Advisory Group (SAG) in early 2009, and an appropriate management response developed.

Table 3: Performance measures and outcomes for the Coral Reef Fin Fish and Deep Water Fin Fish Fisheries in 2007–08.

<table>
<thead>
<tr>
<th>Performance measure</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target species</strong></td>
<td></td>
</tr>
<tr>
<td>(i) Annual CPUE for coral trout and red throat emperor shows a decrease of at least 10% in each consecutive year over three years OR decreases by 20% from the preceding quota year.</td>
<td>Not triggered</td>
</tr>
<tr>
<td>Annual CPUE has remained stable.</td>
<td></td>
</tr>
<tr>
<td>(ii) Total mortality (Z) exceeds 1.5 times estimate of natural mortality (M) for coral trout and red throat emperor. [Future measure]</td>
<td>Not measured</td>
</tr>
<tr>
<td>QPIF have not yet completed the weighting of catch data required to calculate these estimates.</td>
<td></td>
</tr>
<tr>
<td>(iii) The estimate of exploitable biomass of red throat emperor falls below 40% of the estimated virgin biomass.</td>
<td>Not triggered</td>
</tr>
<tr>
<td>Exploitable biomass of RTE is around 70% as per the last stock assessment in 2006.</td>
<td></td>
</tr>
<tr>
<td>Performance measure</td>
<td>Performance</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>(iv) There is a 20% decrease in recreational CPUE for coral trout, red throat emperor and key OS species between consecutive surveys.</td>
<td>Not measured</td>
</tr>
<tr>
<td>(v) The catch of a relevant group of species of coral reef fin fish under OS line units in a quota year is at least 20% higher than the catch of the relevant group of species under the line units in the preceding quota year.</td>
<td>The last survey estimate was obtained in 2005 and is not reflective of the current fishery conditions.</td>
</tr>
</tbody>
</table>

**Bycatch and protected species**

| (i) Observer information [for a three year collection period] shows the amount of bycatch exceeds 10% of the total catch taken by commercial fishers with a RQ fishery symbol when targeting coral reef fin fish (by numbers of fish). | Not measured |
| (ii) Percentage of each category of protected species released alive falls below 90%. | Not triggered |

**Ecosystem impacts**

| (i) The Shannon-Wiener index for a bioregion shows a decrease of at least 10% in each consecutive year over three years OR decreases by 20% from the preceding quota year. [Future measure] | Not measured |

**Social**

| (i) That the rate of compliance falls below 95% in the commercial fishery and/or 95% in the recreational fishery. | Not triggered |

**Economic**

| (i) The proportion of the available TAC for CT, RTE and OS landed in any year is <80%. | Triggered |

**Resource concerns**

There are currently no resource concerns for this fishery.

**Ecosystem**

**Non-retained species / bycatch**

Bycatch information is currently collected through LTMP structured line surveys, as well as by fishery observers on commercial operations (see Monitoring Programs and Results section).

**Interactions with protected species**

Annual Status Report 2008 — Deep Water Fin Fish Fishery
No interactions have been recorded in the logbook by DWFFF line fishers since its introduction 2002, demonstrating of the low-impact nature of the fishery.

Fishery impacts on the ecosystem

Line fishing is generally considered a relatively low impact form of fishing. The small number of operators in the L8 fishery and the distance offshore that they operate means that any minor impacts would pose only a negligible risk to the ecosystem.

Research and monitoring

Recent research and implications

There was no new research undertaken specifically relating to the DWFFF during 2007–08.

Monitoring programs and results

Long Term Monitoring Program (LTMP)

There is currently no fishery independent monitoring specific to the DWFFF, however, there is independent monitoring undertaken for coral reef fin fish, which are taken in the DWFFF. Structured line surveys undertaken for the program however occur outside the area of the deep water fishery, using different gear. Notwithstanding this, some biological information is collected on species that overlap line fisheries. Similarly, a new monitoring program as part of the QPIF LTMP has been developed for the rocky reef fishery to collect a range of biological information for inclusion in assessments on a number of species including pearl perch.

Fishery observer program

The primary objectives of the Fisheries Observer Program (FOP) in the DWFFF are to collect fishery dependent information to:

- Validate the accuracy of catch and effort data detailed within logbooks
- Detail the composition and fate of species of conservation interest (SOCI), and validate data supplied through SOCI logbooks
- Determine composition of bycatch for the fishery.

These objectives are achieved by collecting information on:

- Total catch numbers, size and form of product retained (target and by-product species)
- Catch per unit effort
- Total species catch compositions (target, by-product and bycatch)
- Vessel and gear information (handline, rod or power assisted, number of lines, hook setup type)
- Interactions with SOCI.

There was no coverage in the DWFFF for the 2008 fishing year, however two observer trips were conducted in 2007 on trapping trips, operating under general fisheries permits. Of these trips:

- 79% catch retained – largest contributors being rosy snapper (42.4% – Pristipomoides filamentosus), spotcheek emperor (19.5% – Lethrinus rubrioperculatus) and paddletail seabream (4.8% – Gymnocranius euanus)
- 3% catch discarded dead – major contributors being undersized rosy snapper (1.2% - Pristipomoides filamentosus) and the no take species, red bass (0.4% - Lutjanus bohar)
• 18% catch discarded alive (at release) – major contributors being rabbit fish (7% - Siganus spp.), schooling bannerfish (3.4% - Heniochus diphreutes) and a hermit crab (1.3% - Dardanus undifferentiated)²

The FOP functions as a condition of the permit within this fishery (trap component). Vessels are required to contact the observer program and trips are scheduled in line with their permit requirements. No permits for this fishing method have been re-applied for in 2009.

In 2009, 56 observer days have been allocated to investigate the DWFFF.

Collaborative research
No collaborative research is being undertaken specific to the DWFFF.

Fishery management

Compliance report
During 2007–08, sixteen inspections were conducted in the DWFFF including eight commercial fishing vessel inspections. The majority of the remaining inspections were of marketer premises. One Fisheries Infringement Notice was issued during the period for a commercial fisher failing to produce a document required to be available for immediate inspection.

A compliance risk assessment was completed for this fishery in conjunction with the Coral Reef Fin Fish Fishery in May 2006 in order to determine compliance priorities and allow the most effective use of QBFP resources. Detailed strategies to address the risks identified by this assessment were developed through the QBFP strategic and operational planning processes and were first implemented in July 2006. A new compliance risk assessment will be conducted in late 2009.

Changes to management arrangements in the reporting year
No changes were made to management arrangements in 2007–08.

Complementary management
Fisheries managers routinely discuss complementary management among jurisdictions for a range of line fisheries. Discussions with the Australian Fisheries Management Authority (AFMA) and New South Wales Department of Primary Industries usually revolve around a range of line and trap fisheries taking these same or similar species, not just the DWFFF.

Information compiled by
Bonnie Holmes

Acknowledgements
Nadia Engstrom, Anna Garland, Dr Tracey Scott-Holland, Jason Stapley, Dr Julia Davies, Chad Lunow, Stephanie Slade, Dr Brigid Kerrigan, Michelle Winning.

Image
Flame snapper (Etelis coruscans)

² All trapping data is reported with operators permission due to less than five boat confidentiality policy.