

Annual status report 2007

Deepwater Fin Fish Fishery



The Department of Primary Industries and Fisheries (DPI&F) seeks to maximise the economic potential of Queensland's primary industries on a sustainable basis.

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Introduction

The Deepwater Fin Fish Fishery (DFFF) is a relatively 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 calendar year 2006.

Fishery profile 2006

Total harvest from all sectors: approximately 14 t

Commercial harvest: approximately 14 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 \$90 000

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: DPI&F CFISH database, 2 August 2007

Description of the fishery

Fishing methods

Commercial operators working in the DFFF 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.

Fishing area

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



Figure 1: L8 fishery area.

Main management methods used

Management of the DFFF is the responsibility of the Department of Primary Industries and Fisheries (DPI&F). A comprehensive set of management arrangements are 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 DFFF include:

- 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 DFFF 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 do take some of the same species that are targeted in the DFFF, 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 deepwater fin fish caught in Queensland, was granted in October 2005 under Part 13A of the EPBC Act. This approval expires on 28 October 2008.

Catch statistics

Commercial catch statistics are collected through the DPI&F compulsory daily logbook program. However, because a number of east coast commercial line fisheries use the same logbook it can be difficult to accurately separate the catches taken in a single fishery such as the DFFF. As a result, DPI&F introduced a new logbook specific to the DFFF in October 2006 (MHo1 Version 01), which will enhance the accuracy of logbook information in future years.

Figure 2 summarises the variability in catch composition as reported in logbooks for 1998–2006. A significant shift was detected in 2005, from a catch that has historically been dominated by jobfish and cods towards a fishery where pearl perch, pelagic species and flame snapper made up the majority of the catch. This may have been an impact of the introduction of the quota system in the Coral Reef Fin Fish Fishery from mid 2004, and may have reflected an increased contribution to total catches of those DFFF boats that do not hold RQ fishery symbols (and are able to retain jobfish and cods). In 2006, the catch composition reverted back to that seen prior to 2005, where jobfish and cods again made up the majority of the catch.

From trips undertaken to date, independent DPI&F observers have indicated that the main target species tend to be flame snapper (*Etelis coruscans*), ruby snapper (*Etelis carbunculus*), cod (e.g. *Epinephalus ergastularius*, *Epinephalus radiatus*), and jobfish (e.g. *Pristipomoides multidens*, *Pristipomoides sieboldii*). These trips were undertaken on boats endorsed to operate in both the L8 and RQ fisheries.

For the purposes of reporting DFFF catch statistics, reported logbook data have been filtered to include only catch reported by commercial operations with an L8 fishery symbol, and that have reported catch within the L8 fishery area (i.e. outside the 200 m depth contour). Despite this filtering, catches of species that are not permitted to be retained in the fishery (e.g. coral trout) are still observed in the data. These reported catches are not cause for concern due to the overlap between fishery areas; it is likely that these catches have been taken legally in the Coral Reef Fin Fish Fishery using standard commercial line fishing apparatus (as opposed to L8 multi-hook apparatus) by vessels with other line fishery symbols.

The addition of the MH01 Version 01 logbook to the commercial logbook series will mean that catch data from the various fisheries will be separated from October 2006. These non-permitted species have been left out of any analysis given they are managed explicitly in other fisheries. Figure 3 provides an overview of the total catch in the fishery, which has exhibited a decline in catch parallel with a reduction in the number of days fished since 2003.

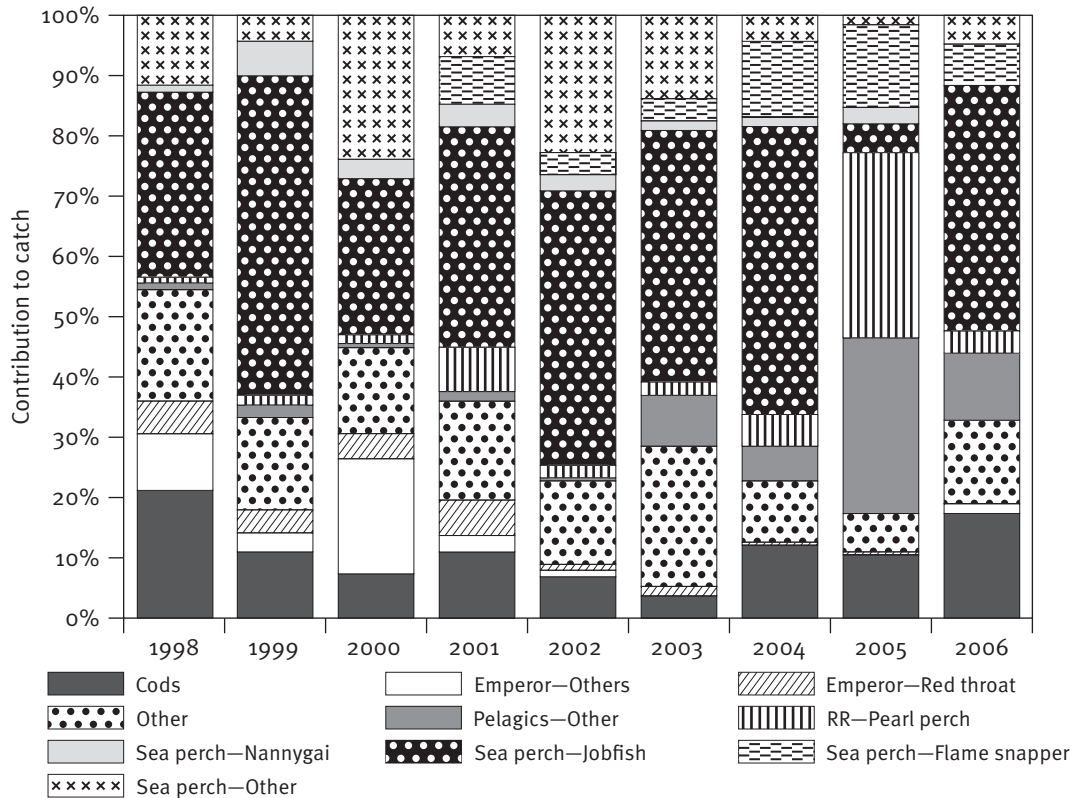


Figure 2: Catch contribution in the Deepwater Fin Fish Fishery from 1998–2006.

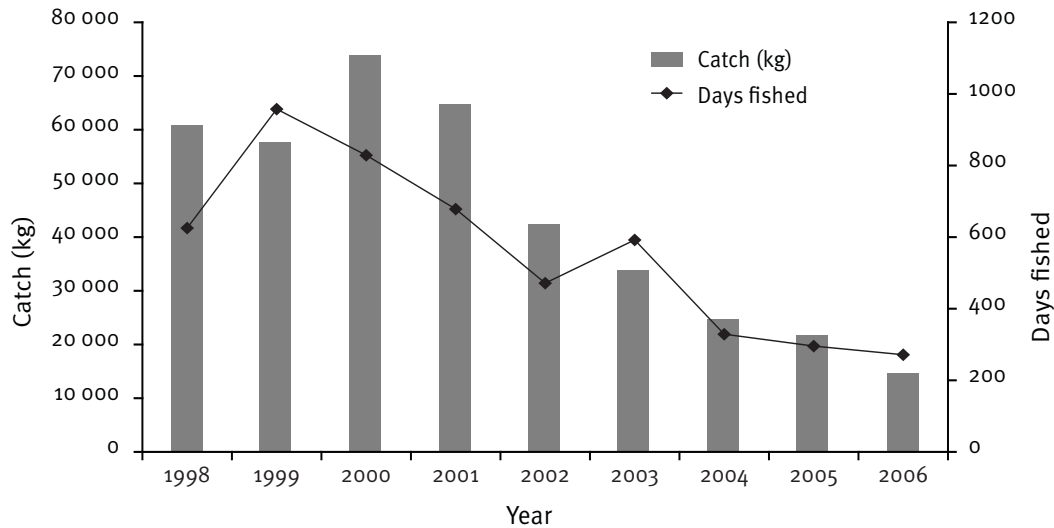


Figure 3: Total catch and days fished in the Deepwater Fin Fish Fishery.

The number of days fished reflects the decline in the number of commercial fishers endorsed to operate in the fishery to an historic low of only seven L8 fishery symbols in 2006. Six operators recorded a total catch of approximately 14 tonnes in 2006. Up until 1 July 2006, L8 fishery symbols were not transferable. In addition, a DPI&F policy for the fishery required that an L8 symbol be used in the previous year in order to guarantee annual renewal of that symbol. This policy is no longer applicable as commercial fishing boat licences are now ongoing rather than requiring annual renewal. This is the result of the new fisheries licensing and fees system implemented in July 2006.

Figure 4 shows the total catches and catch rates for a range of key species taken in the fishery. Jobfish represent one of the historically significant key groups of species that are taken in the DFFF. In 2006, the total catch (kg) of jobfish increased for the first time in five years, reflecting the increased number of days on which this the species group was retained.

Crimson sea perch (*Lutjanus erythropterus*) and saddletail sea perch (*Lutjanus malabaricus*), also commonly known as nannygai, are an important species contributing to the DFFF. Total nannygai catches have been variable over the past five years in response to less effort being applied. In 2006 there was a shift away from targeting nannygai, with only 32 kg reportedly caught over seven days fishing.

A number of species of cod, predominantly bar cod (*Epinephelus ergastularius*), are regularly taken in the DFFF. Figure 4 shows a marginal increase in catch since 2005.

While pearl perch is predominantly taken in the Rocky Reef Fin Fish Fishery, it is also permitted to be taken with multi-hook apparatus in the DFFF. The catch and catch rate significantly decreased from the unusually high catch rates reported in 2005, indicating a shift back to traditionally targeted species such as jobfish.

Total catch of flame snapper has declined since 2004, mirroring other major species in the DFFF. Again, it is suggested this reflects decreasing effort being applied in the fishery.

Red throat emperor (RTE) has been managed explicitly as part of the Coral Reef Fin Fish Fishery since mid 2004 through a total allowable commercial catch for the species. The total catch of red throat emperor in the DFFF has declined in 2006 to only a few kilograms. This provides additional evidence to suggest that RTE has now become an incidental species in the DFFF, rather than the target species it was prior to 2001.

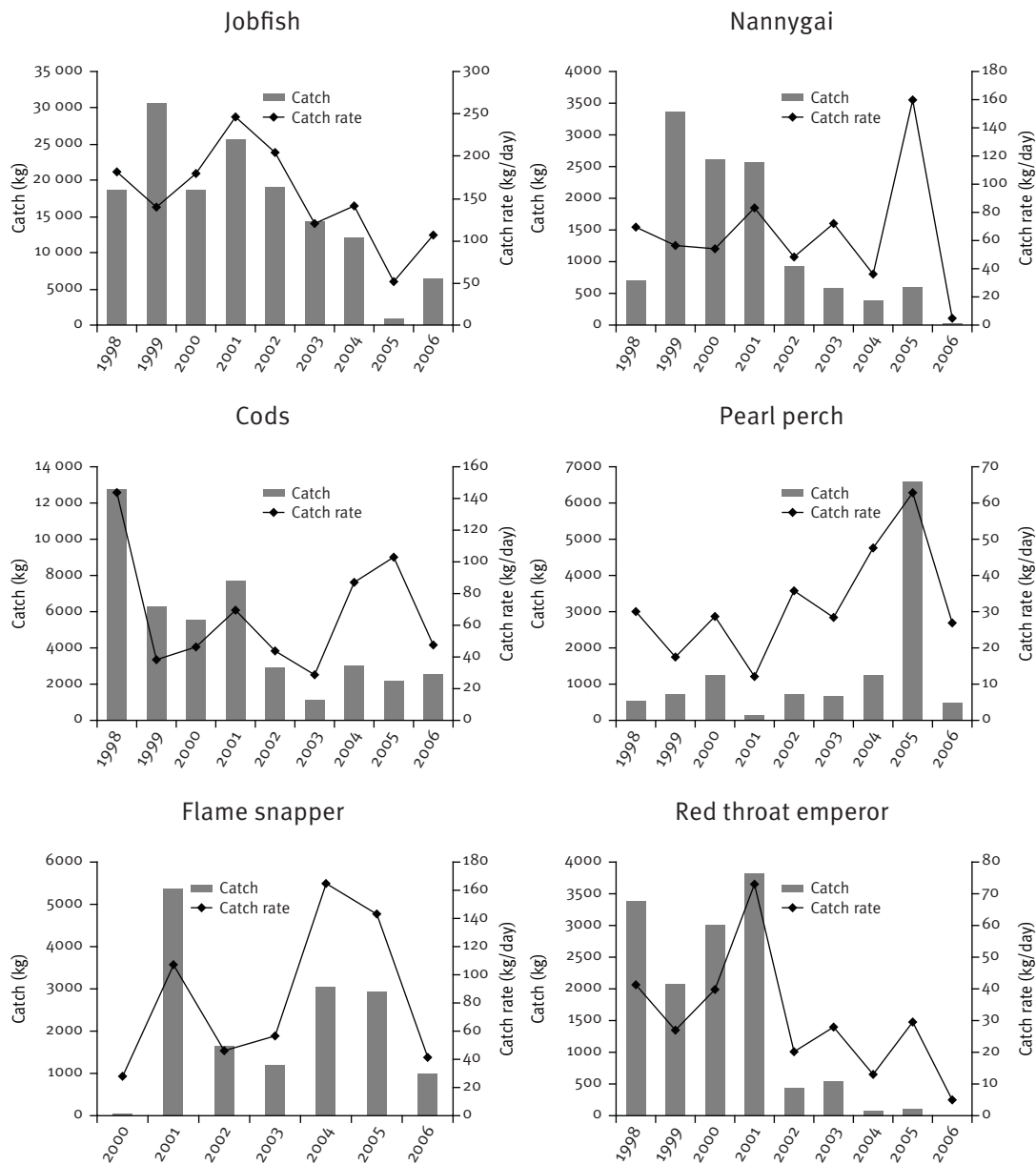


Figure 4: Catch and catch rate for a range of target species 1998–2006¹.

Spatial issues/trends

Most of the fishing effort is applied in areas where the 200 m depth contour is relatively close to the coast. Areas off Fraser Island are regularly fished, particularly over recent years when rocky reef fin fish have been targeted. The current DFFF operators are based predominantly in the southern section of the state.

Because of difficulties differentiating what type of fishing method is used, it is hard to ascertain which fishery the catch should be attributed to. Recent improvements to the logbook (implementation of the MHO1 Version 01) should provide greater certainty in this regard.

¹ Previously reported catch and catch rates in the 2006 Annual Status Report (for the 2005 calendar year) for this fishery have been revised in this report, due to difficulty in separating the L8 catch and effort data from other line data. The correct figures are presented here.

Socio-economic characteristics and trends

The DFFF is primarily a winter fishery. Most product is sold domestically, with occasional exports. Prices obtained on the domestic market range from \$5 to \$8 per kg at the wharf, depending on the species and marketability.

Fishery Performance

Appraisal of fishery in regard to sustainability

The DFFF is a relatively small-scale fishery operating over a large geographical area, with only seven commercial fishers permitted to use multi-hook apparatus. Based on current harvest levels, catch rates and management arrangements, the fishery is considered sustainable. Review events contained in the Fisheries (Coral Reef Fin Fish) Management Plan 2003, are designed to help identify if or where there may be increases in the catch of particular species or species groups. Once developed, the new performance measurement system will further build on the review events and formalise the fishery objectives, performance indicators, and management responses that have been developed by DPI&F 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 bycatch species) and consequently better monitoring and assessment of the fishery.

Progress in implementing Department of Environment and Water Resources (DEW) recommendations

DEW made a range of recommendations to DPI&F during its assessment of the fishery, in order to address any perceived risks or uncertainties. Further details of the progress DPI&F has made in implementing each of these recommendations are provided in Table 1.

Table 1: Implementation progress

| Recommendation | Progress | Improvements to management regime |
|---|---|---|
| DPI&F to inform DEW of any intended amendments to the management arrangements that may affect sustainability of the target species or negatively impact on bycatch, protected species or the ecosystem | <i>Ongoing</i> No changes were made to management arrangements in 2006 that impacted negatively on resource sustainability. A new fisheries licensing and fees system was implemented in July 2006. | N/A. |
| By the end of 2006 DPI&F to develop fishery specific objectives linked to performance indicators and performance measures for target species, bycatch, protected species (fish species) and impacts on the ecosystem. | <i>In progress</i> DPI&F and the ReefMAC SAG have developed performance measurement systems (PMS) for a range of line fisheries during 2006 and 2007. The PMS for the DFFF will be combined with the Coral Reef Fin Fish Fishery due to the significant overlap in target species and management arrangements. The PMS are to be finalised before the expiry of the WTO. | The effectiveness of fisheries management in ensuring the sustainable use of deepwater fish stocks and minimising any impacts on the broader ecosystem will be measured in the near future. |

| Recommendation | Progress | Improvements to management regime |
|---|--|--|
| <p>DPI&F 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, DPI&F to finalise a clear timetable for the implementation of appropriate management responses.</p> | <p><i>In progress</i> The PMS for the DFFF will identify the monitoring and reporting activities that will be required to support the system.</p> | <p>The effectiveness of fisheries management in ensuring the sustainable use of deepwater fish stocks and minimising any impacts on the broader ecosystem will be measured in the near future.</p> |
| <p>From 2006, DPI&F to report publicly on the status of the DFFF on an annual basis including explicitly reporting against performance measures, once developed.</p> | <p><i>Ongoing</i> This annual status report is the second to be completed for the fishery since its WTO approval was gazetted in late 2005.</p> | <p>Public reporting on the status of Queensland's fisheries is an important aspect of managing fisheries on behalf of the Queensland community. These reports provide an important catalogue of historical information on the status of Queensland fisheries, links to ecological assessments demonstrating to the Australian Government that fisheries meet sustainability guidelines, assessment of management effectiveness against performance measures and the most up-to-date information on Queensland's fisheries.</p> |
| <p>DPI&F to implement a program to validate logbook data in the Deepwater Fin Fish Fishery by June 2006.</p> | <p><i>Completed and ongoing</i> DPI&F's logbook validation strategy encompasses a range of activities that may be undertaken across different fisheries. For the purposes of the DFFF, DPI&F used fishery observer and quota monitoring information (for RQ species) to implement a robust logbook validation system. The first logbook validation results for this fishery were obtained in September 2006 and considered by fishery managers, logbook and compliance officers.</p> | <p>Validation of logbook information provides confidence in the level of reporting accuracy by commercial fishers. With reliance on logbook data for quantitative resource assessments and ecological assessments, there is a need to verify the accuracy of the information reported by fishers through the logbook program.</p> |
| <p>DPI&F 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.</p> | <p><i>In progress</i> DPI&F conducted a compliance risk assessment for the DFFF in June 2006 in order to determine compliance priorities and allow for the most effective targeting of DPI&F'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.</p> | <p>A compliance risk assessment is used by the QBFP in undertaking operational planning activities associated with management of the fishery. Through identification and prioritisation of compliance risks associated with the fishery, planning and operational processes at the district level may be improved and risks mitigated.</p> |

| Recommendation | Progress | Improvements to management regime |
|--|---|---|
| DPI&F to enhance fishery specific data collection in the DFFF to inform stock status assessments | <i>Completed</i> DPI&F 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. | The new logbook enables more accurate data specific to the DFFF to be obtained. |
| DPI&F 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. | <i>Completed</i> The DPI&F fishery observer program also represents the Department's program for collecting information on the composition, abundance and status of bycatch in the DFFF. See Fishery observer program section. | The fishery observer program provides independently obtained information for the bycatch component of this fishery. |
| DPI&F 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. | <i>No action necessary at this stage</i> 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, DPI&F 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. | N/A. |

Management performance

A performance measurement system (PMS) for the DFFF (combined with the Coral Reef Fin Fish Fishery) is currently in development and will be implemented before the WTO expires. Development of performance measures is being conducted in consultation with ReefMAC. These measures will be reported against in future status reports for the DFFF.

Resource concerns

There are currently no concerns for the sustainability of species targeted in the DFFF on the basis that the catch of individual species is quite small, the number of operators in the fishery is low, and the area fished is large in proportion to the number of operators. However, there is limited biological information on some of the species harvested.

Ecosystem

Non-retained species/bycatch

Observer data shows that bycatch in the fishery is negligible (0.4%). All fish captured during observer trips were retained with the exception of a black marlin and two sharks, which were returned to the water alive.

A small amount of pink snapper (*Pagrus auratus*) is thought to be caught in the DFFF fishery area using single hook apparatus. Currently, operators are not permitted to retain snapper caught on multi-hook apparatus. Because of concerns for the sustainability of pink snapper stocks in general, catches in the DFFF are being closely monitored.

Sampling undertaken as part of an assessment of the DFFF in Queensland² in 2002 showed negligible bycatch. No bycatch was recorded on the first two-day research sampling trip, including no undersized fish. On the second sampling trip (two days) the total bycatch consisted of three conger eels and three sharks (species unknown).

Interactions with protected species

Commercial operators using an LFo4 logbook are required to fill in a Species of Conservation Interest (SOCI) logbook. This requirement has continued with the introduction of the new MHo1 Version 01 logbook, which supersedes any previous logbooks that may not have encompassed the SOCI reporting requirement. All line fisheries now have the requirement to report protected species interactions. No interactions with protected species were recorded by line fishers that filled in SOCI logbooks in 2006. In addition, DPI&F fishery observers on L8 vessels have not recorded any interactions to date.

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 DFFF during 2006.

Monitoring programs and results

There is currently no fishery independent monitoring specific to the DFFF, however, there is independent monitoring undertaken for coral reef fin fish, which are taken in the DFFF. Structured line surveys undertaken for the program however occur outside the area of the deepwater 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 DPI&F Long Term Monitoring Program 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

A voluntary fishery observer program (FOP) was introduced into the commercial sector of the DFFF in 2005. In this fishery, DPI&F observers collect information on catch composition, effort, by-product, bycatch and any interactions with SOCI. In addition, the FOP also provides data for the validation (non compliance) of logbooks.

² E White & W Sumpton, *Assessment of the Deep Water Line Fishery in Queensland*. Queensland Department of Primary Industries Q102081. Brisbane, Australia, 2002.

Observation of the DFFF forms part of the overall Fisheries Observer Program (FOP), and as such, the limited resources available to the program must be balanced between fisheries while also providing adequate coverage to adequately address objectives. The strategic direction for the program considered the risks of high bycatch levels to be the governing factor to determine the priority to assess individual fisheries. Through this process it was considered that the FOP will provide 50 days coverage of this fishery in 2009 as a part of a three year rolling plan. The plan allows for each fishery sector to be investigated in more detail than would be possible if a smaller number of days (and hence fishing trips) were allocated each year.

Collaborative research

No collaborative research is undertaken specific to the DFFF. Research is undertaken on coral reef fin fish and rocky reef fin fish. Research information related to these fish groups will be provided as part of the respective annual status reports.

Fishery management

Compliance report

During 2006, seven inspections of commercial fishing vessels were conducted in the Deepwater Fin Fish Fishery with no offences detected.

A compliance risk assessment was completed for this fishery in conjunction with the Coral Reef Fin Fish Fishery in May–June 2006 in order to determine compliance priorities and allow the most effective use of QBFP resources. The risk assessment identified breach of size and in-possession limits; recreational fishers taking fish for commercial purposes; infringement of Great Barrier Reef Marine Park zoning provisions; and failure to keep required information/providing inaccurate information as the highest priorities for enforcement and compliance in these fisheries. There were also a number of activities rated as having a moderate risk, which are also being addressed. 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.

Changes to management arrangements in the reporting year

No changes were made to the fisheries management regime during 2006.

Consultation/communication/education

Promotion of regulations applying to both commercial and recreational fishers, including those relating to the DFFF, is an ongoing role of DPI&F. Approximately 200 000 recreational fishing brochures containing size and possession limit information were distributed in 2005–06. Details of fisheries regulations are also on the DPI&F website. In addition, approximately 750 stakeholders were sent copies of the fisheries newsletter 'Fish' four times during 2005. The newsletter highlights recent achievements, the latest research and proposed changes to management arrangements. The newsletter went 'electronic' in 2006 and is now distributed via the DPI&F website and email. The newsletter includes links to other fisheries websites around the world containing all the latest fisheries news and is gaining more subscribers on a daily basis.

Consultation also occurs through the ReefMAC and ReefSAG³. ReefMAC provides an opportunity for stakeholders to provide advice to DPI&F on management measures in place for deepwater stocks.

³ The SAG includes technical expertise from DPI&F (fishery managers and scientists), the commercial fishing industry, Sunfish, James Cook University, GBRMPA and the charter fishing sector.

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 DFFF.

Information compiled by

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Image

Flame snapper (*Etelis coruscans*)