

NORTHERN TERRITORY FISHERIES
JOINT AUTHORITY

REPORT FOR PERIOD

1 July 2006

to

30 June 2007

Commonwealth of Australia

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*FISHERIES MANAGEMENT ACT 1991
(COMMONWEALTH)*

*FISHERIES ACT 1988
(NORTHERN TERRITORY)*

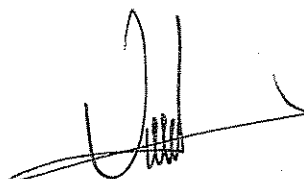
NORTHERN TERRITORY FISHERIES JOINT AUTHORITY

REPORT OF THE NORTHERN TERRITORY FISHERIES JOINT AUTHORITY

FOR THE PERIOD: 1 JULY 2006 TO 30 JUNE 2007



The Hon Tony Burke, MP
Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA



The Hon Konstantine Vatskalis, MLA
Minister for Primary Industry, Fisheries and Resources
Parliament House
DARWIN

Contents

	Page No
1 Introduction	1
2 Members of the Joint Authority	1
3 Functions and Powers of the Northern Territory Fisheries Joint Authority	2
4 Meeting of the Northern Territory Fisheries Joint Authority	2
5 Advisory Committees	2
6 Condition of the Fisheries	3
7 Management Arrangements	15
8 Fisheries Monitoring, Research, Surveillance and Enforcement	22
9 Financial Arrangements	29
10 Management Arrangements and Landings	31
Figure	
1 Area of the Timor Reef Fishery	3
2 Composition of the catch from the commercial Timor Reef Fishery, 2006	4
3 Catch and effort for the commercial Timor Reef Fishery, 1995 to 2006	4
4 Catch rates for the commercial Timor Reef Fishery, 1995 to 2006	5
5 CPUE for the commercial Timor Reef Fishery, 1995 to 2006	5
6 Area of the Demersal Fishery	6
7 Overall catch composition of the commercial Demersal Fishery, 2006	7
8 Comparison of catch composition harvested using different fishing gear in the commercial Demersal Fishery, 2006	7
9 Catch and effort for the commercial Demersal Fishery, 1996 to 2006	8
10 CPUE for the commercial Demersal Fishery, 1996 to 2006	8
11 Area of the Finfish Trawl Fishery	9
12 Catch composition for the commercial Finfish Trawl Fishery, 2006	9
13 Catch and effort for the Finfish Trawl Fishery, 1995 to 2006	10
14 CPUE for the Finfish Trawl Fishery, 1995 to 2006	10
15 Area of the Offshore Net and Line Fishery	11
16 Catch and effort for the commercial Offshore Net and Line Fishery, 1983 to 2006	12
17 Compositions of the commercial Offshore Net and Line Fishery catch, 2006	12
18 CPUE for the commercial Offshore Net and Line Fishery, 1983 to 2006	13
Table 1 Management Arrangements and Landings for NTFJA Fisheries	31
Annex	
A Northern Territory Government Gazette	33
B Record of Decisions	37

1. Introduction

This is the twentieth annual report of the Northern Territory Fisheries Joint Authority (NTFJA). This report details the functions and activities undertaken during the period 1 July 2006 to 30 June 2007. Catch and effort statistics are compiled annually.

The NTFJA assumed management responsibility for the following fisheries in all waters adjacent to the Northern Territory:

- Timor Reef Fishery;
- Demersal Fishery;
- Finfish Trawl Fishery; and
- Offshore Net and Line Fishery

Enabling Legislation

The NTFJA was established in February 1983, under the then Commonwealth legislation (*Commonwealth Fisheries Act 1952*) to provide for the Commonwealth and the Northern Territory to jointly manage declared fisheries and fisheries resources in waters adjacent to the Northern Territory. With the passage of the Offshore Settlement Agreement of 1987, management of the Northern Territory pearl oyster fishery passed to the NTFJA.

On 3 February 1995, the NTFJA, subject to the provisions of the *Commonwealth Fisheries Management Act 1991* and the *Northern Territory Fisheries Act 1988*, assumed responsibility, in waters adjacent to the Northern Territory, for the Demersal, Timor Reef, Offshore Net and Line and Finfish Trawl Fisheries. At that time, management of pearl oysters passed to the Northern Territory. For the reporting period, day to day administration of these fisheries was provided by the Northern Territory Department of Primary Industry, Fisheries and Mines (now known as the Department of Regional Development, Primary Industry, Fisheries and Resources (RDPIFR)).

The NTFJA was established under "The Arrangement between the Commonwealth of Australia and the Northern Territory", published in the Australian Government Gazette of 1 February 1995 and the Northern Territory Gazette of 1 February 1995 (No. S7, 1 February 1995). A copy of this Arrangement is provided at Annex A.

2. Members of the Joint Authority

The members of the NTFJA during the reporting period were:

Senator the Hon Eric Abetz
Minister for Fisheries, Forestry and Conservation
(1 July 2006 to 30 June 2007) and,

The Hon Kon Vatskalis MLA
Minister for Primary Industry and Fisheries
(1 July 2006 to 31 Aug 2006)

The Hon Christopher Natt MLA
Minister for Primary Industry and Fisheries
(1 Sept 2006 to 30 June 2007)

Deputies for the NTFJA during the reporting period were:

For the Commonwealth Minister –

Mr Richard McLoughlin
Managing Director
Australian Fisheries Management Authority
(1 July 2006 to 5 April 2007)

Mr Nick Rayns
(Acting) Managing Director
Australian Fisheries Management Authority
(6 April 2007 to 30 June 2007)

Mr Glenn Hurry
General Manager
Department of Agriculture, Fisheries and Forestry
(1 July 2006 to 30 June 2007)

For the Northern Territory Minister -

Mr William Flaherty
(Acting) Executive Director of Fisheries RDPIFR
(1 July 2006 to 11 Feb 2007)

Ms Heather Brayford
Executive Director of Fisheries RDPIFR
(12 Feb 2007 to 30 June 2007)

Mr William Flaherty
Deputy Director of Fisheries RDPIFR
(12 Feb 2007 to 30 June 2007)

Secretariat services to the NTFJA are provided by RDPIFR.

3. Functions and Powers of the Northern Territory Fisheries Joint Authority

Section 62 of the Commonwealth *Fisheries Management Act 1991* together with Section 66 of the Northern Territory *Fisheries Act 1988* provides for the function of the NTFJA, viz:

"keeping constantly under consideration the condition of the fishery, formulating policies and plans for the good management of the fishery, and for the purposes of the management of the fishery exercising the powers conferred on it by the Northern Territory Fisheries Act and co-operating and consulting with the other authorities including other Joint Authorities within the meaning of the Commonwealth Act, in matters of common concern."

The Commonwealth Act also provides that in undertaking these functions, the Joint Authority must pursue the objectives of –

- (a) implementing cost-effective fisheries management;
- (b) ensuring that the exploitation of fisheries resources and the carrying on of any related activities are conducted in a manner consistent with the principles of ecologically sustainable development and the exercise of the precautionary principle, in particular the need to have regard to the impact of fishing activities on non-target species and the marine environment;
- (c) maximising economic efficiency in the exploitation of fisheries resources; and,
- (d) ensuring accountability of the fishing industry and to the community generally in its management of fisheries resources.

The Northern Territory *Fisheries Act 1988* also provides the following objectives for the NTFJA.

- (a) ensuring, through proper conservation, preservation and fisheries arrangement measures, that the living resources of the waters to which the Act applies are not endangered or over-exploited; and,
- (b) achieving the optimal utilisation and equitable distribution of those resources.

Management of the recreational component of NTFJA fisheries resides with RDPIFR.

4. Meetings of the Northern Territory Fisheries Joint Authority

Meetings of the NTFJA are convened on an "as needs" basis, with RDPIFR coordinating the "day to day" management under the Northern Territory *Fisheries Act 1988*, on behalf of the NTFJA. A meeting of the NTFJA was convened on 14 September 2006 to discuss matters relevant to the NTFJA. A record of this meeting can be found at Annex B.

RDPIFR representatives participated in the annual Northern Australian Fisheries Management (NAFM) Workshop, which was convened in September 2006. The NAFM Workshop is convened annually to consider fisheries management, research and compliance issues in seeking to ensure collaborative and complementary actions in managing fisheries resources throughout northern Australia.

The NAFM Workshop is convened under formal Memorandum of Understandings for cooperative management of fish stocks. The issues considered at the NAFM Workshop have been extended to incorporate recent serious concerns raised over Illegal, Unreported and Unregulated (IUU) fishing impacts on domestic northern shark stocks. This has become an important issue, particularly with domestic shark fisheries in Queensland, Western Australia and the Northern Territory being accredited as sustainable fisheries under the Department of the Environment, Water, Heritage and the Arts (DEWHA) audit process.

5. Advisory Committees

The administrative arrangements implemented in association with the Offshore Constitutional Settlement arrangements envisaged that existing fishery advisory forums would be utilised, wherever possible.

The Northern Territory *Fisheries Act 1988* provides for stakeholder involvement in the formulation of management arrangements and advising the Executive Director of Fisheries on operational arrangements through the appointment of Fishery Management Advisory Committees (FMACs).

FMACs, appointed for the Offshore Net and Line and Timor Reef Fisheries met to discuss fishery

matters during the reporting period. FMAC meetings are convened on an “as needs” basis and may be held more than annually.

Regular communications and consultation occurs between stakeholders to discuss matters of concern within the various fisheries. Stakeholders involved in such discussions include representatives from licensee committees, the Northern Territory Seafood Council, neighbouring jurisdictions, other extractive stakeholders and wider interest groups.

A Northern Territory representative has been afforded membership to the Queensland Gulf of Carpentaria (GoC) Fisheries Management Advisory Committee covering all fisheries (other than the Northern Prawn Fishery) in Queensland’s component of the GoC. This appointment assists in ensuring the consideration of complementary management arrangements and the implications of dual Queensland/Northern Territory licenced vessels operating in the GoC. The GoC Fisheries Management Advisory Committee met twice during the reporting period, 11-12 October 2006 and 27-28 June 2007.

6. Condition of the Fisheries

Offshore Demersal Fisheries

Separate management regimes have been implemented for the Timor Reef, Demersal, Finfish Trawl and Offshore Net and Line Fisheries. These arrangements seek to set commercial participation at relatively low levels and to satisfy legislative objectives of ensuring the sustainability of our fisheries resources.

To assist in this regard, RDPIFR has implemented procedures for the collection, collation and analysis of commercial catch and effort data from commercial fishers, which is supplemented by information obtained through onboard monitoring by research staff. This time series data (including information collected over the last two decades) is the principal source of data for stock assessments undertaken for Joint Authority fisheries.

The Timor Reef, Demersal and Finfish Trawl Fisheries have all been assessed against the

Commonwealth guidelines for sustainable fisheries as required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). All achieved the highest possible level of accreditation, being declared as fully exempt from export controls for a period of five years. The Offshore Net and Line Fishery has also been assessed by DEWHA and has been declared a Wildlife Trade Operation (WTO) for a total period of three years.

Timor Reef Fishery

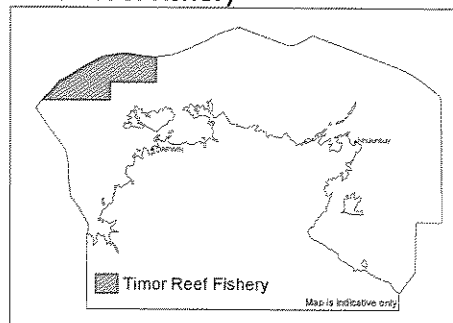


Figure 1. Area of the Timor Reef Fishery

The Timor Reef Fishery operates well offshore out in the Timor Sea, in a remote region extending north-west of Darwin to the Western Australia/Northern Territory border and to the outer limit of the Australian Fishing Zone (AFZ). The fishery has an area of approximately 8400 nm² (Figure 1).

The key fish species landed by commercial operators in the Timor Reef Fishery are goldband snapper (*Pristipomoides* spp.), red snappers (*Lutjanus malabaricus* & *L. erythropterus*) and cods (*Epinephelus* spp.). Commercial operators are using traps and baited lines to catch these main species. A separate licence is required to operate within the confines of the Timor Reef Fishery. There are currently 12 licences in the fishery, a reduction from 22 licences in 1993. A ceiling of 45 fish traps for each licence was agreed to in 2002.

Profile of the Fishery - Commercial Sector

Fishing Method

Commercial operators are authorised to use baited traps and vertical lines, including hand lines and drop lines. Prior to 1999, the majority of operators in the Timor Reef Fishery used drop

lines. However, during 1999-2000 there was an industry-wide change to trap fishing, with only one operator using drop lines during 2002. However, owing to the better quality of line-caught fish, there was a reversal of this trend back to drop lines by many operators in 2004. Presently, two vessels use traps and the remainder use drop lines.

Catch

The principal target species of the Timor Reef Fishery are goldband snapper, which comprise the three species *Pristipomoides multidens*, *P. typus* and *P. filamentosus*. Together these species comprise 57% of the total catch (Figure 2), with *P. multidens* being the most common of the three *Pristipomoides* species. Other key species in this fishery are saddletail snapper (*Lutjanus malabaricus*), red snapper (*L. erythropterus*), red emperor (*L. sebae*) and cods (Family Serranidae) (Figure 2).

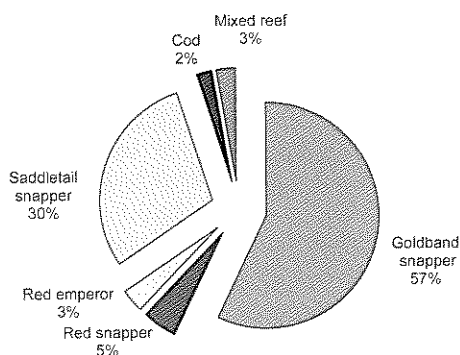


Figure 2. Composition of the catch from the commercial Timor Reef Fishery for 2006

The species composition of the catch is gear dependant (Figure 3). Dropliners catch a higher proportion of goldband snapper, compared with trap boats which catch almost equal proportions of red snappers (*L. malabaricus*, *L. erythropterus*) and goldband snapper (*P. multidens*). There was a higher proportion of trapping this year compared with droplining, hence the species composition of the total catch has changed significantly from 2005 to reflect this.

In 2006, the total catch from the Timor Reef Fishery was 726 tonnes, of which the goldband snapper catch was 416 tonnes. This is an increase in total catch compared to 2005 when 669 tonnes were landed, but a small decrease in the proportion of goldband snapper harvested

compared to the 2005 figure of 453 tonnes.

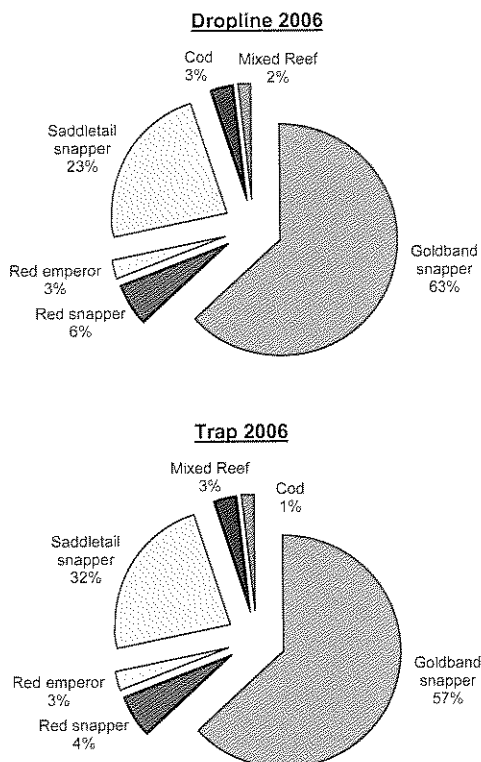


Figure 3. Comparison of catch composition harvested using different fishing gear in the Timor Reef Fishery during 2006

Byproduct Species

Byproduct species for the Timor Reef Fishery only make up 3% of the overall catch. These predominantly include small snappers such as *Lutjanus vitta*, *L. russeli*, and emperors such as red spot emperor (*Lethrinus lentjan*) and Robinson's sea bream (*Gymnocranius grandoculus*).

The 2006 byproduct level is well below the 10% trigger value required to initiate a review of management arrangements for the protection of byproduct species.

Effort

During 2006, seven licences were actively fished and a total of 1178 boat days recorded, a decrease from last year's figure of 1503 boat days (Figure 4).

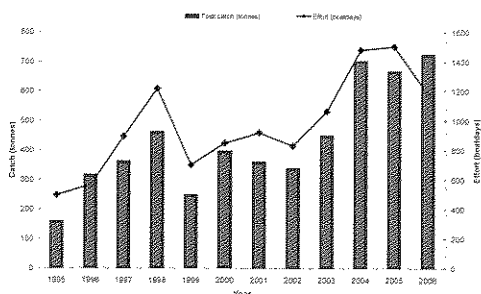


Figure 4. Catch and effort for the commercial Timor Reef Fishery, 1995-2006

Catch Rates

Catch per unit effort (CPUE) increased in 2000 with the introduction of traps, however, there was a decline in CPUE in 2001, with catch rates relatively steady from 2001 to 2005, and an increase in CPUE during 2006 (Figure 5).

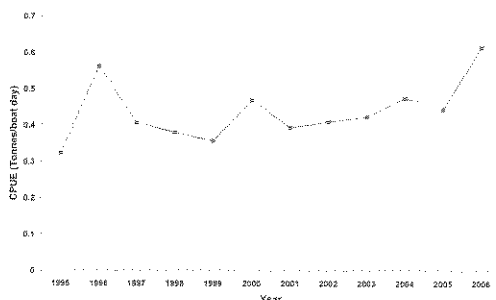


Figure 5. CPUE for the commercial Timor Reef Fishery, 1995–2006

Marketing

Due to the lack of consumer familiarity with tropical snappers and emperors during the early developmental phase of the fishery, initial catches were processed and sold as frozen fillets on southern domestic markets.

Trial shipments of whole fresh “gilled and gutted” goldband snapper were well received. Studies on tropical snappers indicated a shelf-life of up to 20 days after capture. This led to a marketing break-through for these species.

Currently, almost all snappers landed within the line and trap fisheries are sold as “fresh on ice” whole fish (including gills and stomach), with very small amounts sold as fillets. As the Darwin market is small, most of the product is forwarded to interstate markets, principally Brisbane and Sydney. Increasingly, operators are developing marketing arrangements outside the traditional

central marketing systems, with a local representative of a major seafood wholesaler continuing to coordinate consignments to east coast markets. At least one operator independently markets catch from his two vessels.

Non-retained Species (bycatch)

For the Timor Reef Fishery, the reported and observed level of bycatch (non-retained species) is less than 1% of the total catch. The demersal tropical species landed in the fishery are well received throughout existing marketing channels.

Non-retained species include Chinaman fish (*Symphorus nematophorus*), red sea bass (*Lutjanus bohar*), big eye trevally (*Caranx sexfasciatus*), and starry triggerfish (*Abalistes stellatus*).

Bycatch in this fishery is below the 10% trigger value.

Threatened Species Interaction

In 2006, there were no recorded interactions with threatened species in the Timor Reef Fishery. The method of fishing and the location of the fishery generally prevent interactions with threatened species.

Eco-system Impact

The management arrangements for the fishery allow operators to use passive fishing gear comprised of vertical lines and traps. Interaction with the habitat is limited to the effects of traps and vertical line weights on the substrate, and the effect of anchors. Traps are connected individually to an identifying float by a single line. Traps are not attached to each other in order to avoid excessive interaction with the substrate upon hauling. Anchoring is usually limited to overnight stand down of fishing activity.

No interaction between the fishing gear and protected species has been observed. Such interactions are not expected with a deep-water trap fishery.

The impact of “ghost fishing”, i.e. the continued fishing of lost traps, is not considered to be significant in terms of either its impact or occurrence. Underwater video observation of traps during commercial fishing operations throughout northern Australia has shown the unimpeded entry and exit of fish from the traps

used in the fishery.

A prohibition on fish trawling within the area of the Timor Reef Fishery was declared in the late 1980s. Such a declaration sought to provide greater protection of the then emerging fishery from the impact of demersal fish trawling. The Australian Government managed Northern Prawn Fishery allows prawn trawlers to operate year round in offshore waters throughout northern Australia. Prawn and scampi (deepwater shellfish) trawling activity is generally limited to water greater than 200 m deep in areas immediately north of current Timor Reef fishing grounds.

Social Impact

This fishery directly employs over 42 people as boat crew, packagers, marketers and numerous people in other support industries, such as transport and boat repairs.

Economic Impact

At the point of first sale in 2006, the overall catch value of the commercial Timor Reef Fishery was \$4.08m. The goldband snapper component was \$2.77m (in 2005 it was \$3.3m) and the catch value of saddletail snapper was \$0.86m (in 2005 it was \$0.45m).

Demersal Fishery

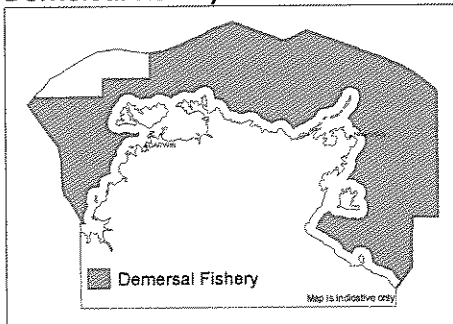


Figure 6. Area of the Demersal Fishery

The Demersal Fishery targets goldband snapper (*Pristipomoides multidens*), but also catches increasingly significant quantities of red snappers (*Lutjanus malabaricus*, *L. erythropterus*), with the remainder of the catch comprising red emperor (*Lutjanus sebae*) and cods (Family Serranidae). Most products from this fishery are marketed as 'fresh on ice' with the majority sold as whole fish on the Australian domestic market.

The Demersal Fishery utilises dropline and trap gears operating in waters 15 nautical miles from shore to the outer limit of the AFZ, excluding the area of the Timor Reef Fishery.

In 2006, many Timor Reef fishers (who also hold Demersal licences) began exploring grounds immediately adjacent to the Timor Reef Fishery area for goldband and red snapper species. The lingering effects of oil and gas exploration companies carrying out seismic surveys within the more productive regions of the Timor Reef Fishery in combination with business decisions to more actively target the Demersal Fishery has led to an expansion of fishing effort in the Demersal Fishery from mid 2006 onwards.

Limited supply, enhanced product quality, improved marketing techniques and a greater acceptance of red snapper by the Australian public has led to an increase in product prices. In turn, these factors have made previously underutilised red snapper stocks within the Demersal Fishery a more attractive prospect.

Red snappers and red emperors are also caught, primarily by hook and line, by the recreational and fishing tour operator sectors. However, there is limited overlap with commercial operators given the offshore nature of the fishery.

The NTFJA, through the Northern Territory *Fisheries Act 1988*, manages all finfish taken in the fishery with the day to day management of the fishery undertaken by RDPIFR.

The Demersal Fishery has been assessed against the Australian Government Guidelines for the Ecologically Sustainable Management of Fisheries to receive full export exempt accreditation under the Commonwealth EPBC Act. The assessment is due for review in May 2009.

Profile of the Fishery - Commercial Sector

Area

The Demersal Fishery operates in waters from 15 nautical miles from the coastal baseline to the outer limit of the AFZ, excluding the area of the Timor Reef Fishery (Figure 6).

Within the Demersal Fishery, the majority of fishing effort occurs in areas adjacent to the Timor Reef Fishery.

Fishing Method

Methods in this fishery are identical to those of the Timor Reef Fishery where operators use either traps or drop lines to target goldband snapper.

Catch

The principal target species of the Demersal Fishery is goldband snapper, which comprises the three species, *Pristipomoides multidens*, *P. typus* and *P. filamentosus*. Together these species make up 49% of the total catch, with *P. multidens* being the most common of the three *Pristipomoides* species. Other major target groups are saddletail snapper (*Lutjanus malabaricus*), red snapper (*L. erythropterus*), red emperor (*Lutjanus sebae*), and cod (Family Serranidae) (Figure 7).

The species composition of the catch is gear dependant (Figure 8). Drop liners catch a higher proportion of goldband snapper, compared with trap boats which catch almost equal proportions of red snappers (*L. malabaricus*, *L. erythropterus*) and goldband snapper (*P. multidens*). A higher proportion of trapping was conducted during 2006 compared with drop lining, hence the species composition of the total catch has changed significantly from 2005.

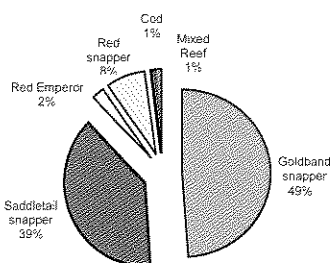


Figure 7. Overall catch composition of the Demersal Fishery for 2006

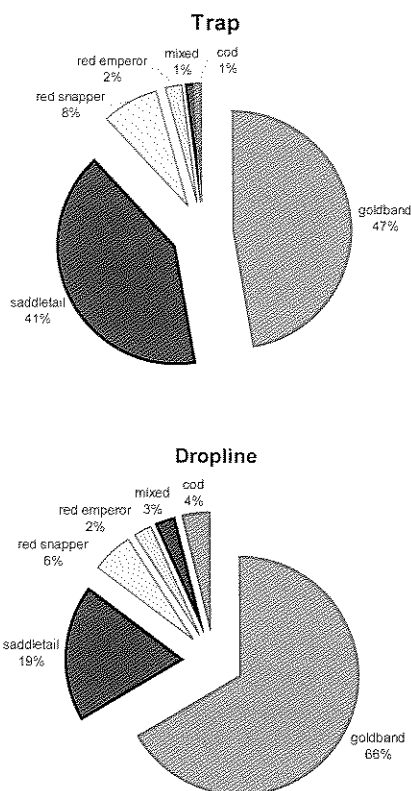


Figure 8. Comparison of catch composition harvested using different fishing gear in the Demersal Fishery during 2006

In 2006, the total catch from the Demersal Fishery was 223 tonnes, a significant increase from the 2005 total catch of 79 tonnes (Figure 9). The goldband snapper component was 109 tonnes. This increase in catch was due to an increase in focus on the Demersal Fishery by Timor Reef Fishery operators, in response to seismic survey activity in the Timor Sea and business decisions to more actively target the Demersal Fishery.

Byproduct Species

Byproduct catch (mixed reef, cod and red emperor) is well below the 10% trigger value required for a review of management arrangements for the protection of byproduct species.

Effort

During 2006, there were six active licences in the

Demersal Fishery. The reported effort in this fishery was 281 boat days, which was substantially higher than the 173 boat days recorded in 2005 (Figure 9).

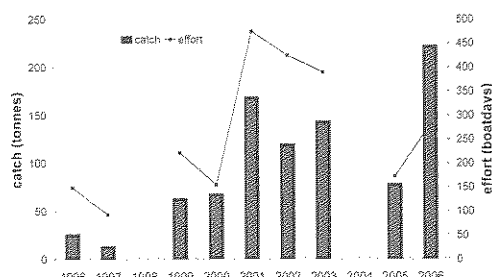


Figure 9. Catch and effort for the commercial Demersal Fishery, 1996 to 2006* (*due to confidentiality constraints data collected in 1998 and 2004 has not been published).

Catch Rates

CPUE has fluctuated considerably over the history of this fishery (Figure 10). However, this is probably a reflection of the small number of operators and small amount of fishing activity rather than changes in fish abundance.

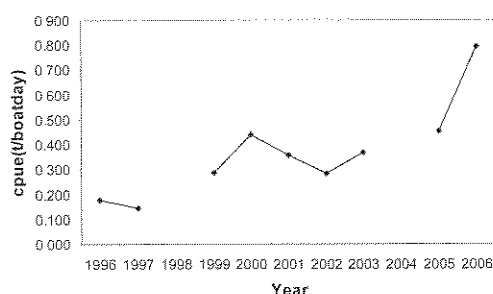


Figure 10. Total CPUE for the commercial Demersal Fishery, 1996 to 2006* (*due to confidentiality constraints, data collected in 1998 and 2004 has not been published).

Marketing

Currently all fish landed within the line and trap fisheries are sold "fresh on ice" as whole fish, with only a small amount sold as fillets. The small local Darwin market means most product is forwarded to interstate markets, principally Brisbane and Sydney. Increasingly, operators are developing marketing arrangements outside the wholesale central interstate marketing systems.

Recreational Sector

Recreational fishers catch some of the same species targeted by the Demersal Fishery, particularly red snappers and red emperor, from inshore waters. However, the overall impact on the offshore commercial fishery is considered negligible.

Fishing Tour Operator Sector

Very few fishing tour operators (FTOs) are active in the Demersal Fishery areas, and therefore their activities are not considered to impact on the commercial fishery catch.

The following 5 sections apply to all sectors

Non-retained Species (bycatch)

No monitoring trips were conducted in the Demersal Fishery during 2006, however, due to its similarity to the Timor Reef Fishery, the same assumptions have been made about the levels of non-retained species, i.e. levels of <7%.

Non-retained species include Chinaman fish (*Symphorus nematophorus*), red sea bass (*Lutjanus bohar*), big eye trevally (*Caranx sexfasciatus*), and starry triggerfish (*Abalistes stellatus*).

Bycatch in this fishery is well below the 10% trigger value.

Threatened Species Interaction

In 2006, there were no recorded interactions with threatened species in the Demersal Fishery. The method of fishing and the location of the fishery generally prevent interactions with these species.

Eco-system Impact

The management arrangements for the Demersal Fishery allow operators to use passive vertical lines and traps. The effect of setting and hauling traps on substrate and bottom fauna is unknown. Anchoring is usually limited to overnight stand down of fishing activity.

The impact of "ghost fishing", i.e. the continued fishing of lost traps, is not considered to be significant in terms of either its impact or occurrence. Underwater video observation of traps during commercial fishing operations throughout northern Australia has shown the entry and exit of fish from the traps used in the Demersal Fishery.

Social Impact

The commercial fishery directly employs less than 20 people as crew on boats, and numerous people through other industries, e.g. transport, boat repairs etc. However recreational fishing targets some of these demersal species and forms an important component in the lifestyles and culture of a large proportion of people residing in the Northern Territory.

Economic Impact

In 2006 there were five active operators in the Demersal Fishery. It is the policy of RDPIFR that information obtained from a fishery with less than five active operators will not be released without prior consent from the licensee(s). As a result, the 1998 and 2004 catch value for the fishery remains confidential. The 2006 catch value was \$1.32 million (2005 \$0.49 million).

Finfish Trawl Fishery

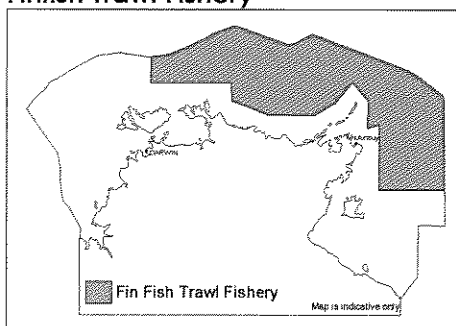


Figure 11. Area of the Finfish Trawl Fishery

The principal species landed in the Finfish Trawl Fishery are red snappers (*Lutjanus malabaricus* and *L. erythropterus*). Products from this fishery are marketed primarily as whole fresh fish with the majority sold on the Australian domestic market.

The Finfish Trawl Fishery is comprised of a single Finfish Trawl operator fishing in offshore waters east of Darwin and includes the northern region of the GoC.

The NTFJA, through the Northern Territory Fisheries Act 1988, manages all finfish taken in the fishery with the day to day management of the fishery undertaken by RDPIFR.

The Finfish Trawl Fishery has been assessed against the Australian Government Guidelines for the Ecologically Sustainable Management of Fisheries, to receive full export exempt

accreditation under the Commonwealth EPBC Act. The assessment is due for review in May 2008.

Profile of the Fishery - Commercial Sector

Area

The Finfish Trawl Fishery operates in waters east of Darwin to the outer limit of the AFZ, excluding the area of the Timor Reef Fishery (Figure 11).

Within this overall area, only a relatively small portion is currently fished due to the single operator targeting the higher yield red snapper fishing grounds. Although legally able, the Finfish Trawl operator does not presently fish the same grounds as the Demersal Fishery licensees.

Fishing Method

This fishery has been limited to a single trawl operator. Fishing operations are conducted using a semi-pelagic demersal trawl. This trawl net was developed cooperatively by industry and RDPIFR to minimise habitat disturbance whilst ensuring commercial catch rates were maintained. The quality of the retained catch was also improved by the reduction in the number of sponges and other unwanted species associated with the operations of traditional demersal trawls.

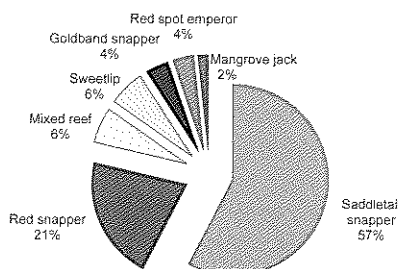


Figure 12. Catch composition for the Finfish Trawl Fishery, 2006

Catch

Saddletail snapper (*Lutjanus malabaricus*) and red snapper (*Lutjanus erythropterus*) are the target species of the Finfish Trawl Fishery, comprising 82% of the total catch (Figure 12).

Since 1995, catches have increased steadily, peaking in 2001 (Figure 13). In 2006, the catch was 866.2 tonnes. As there is only one operator in this fishery, care must be taken in interpreting

catch trends as they may reflect business decisions rather than fishery trends. In 2006, byproduct harvest was 186 tonnes.

In 2006, byproduct harvest was 186 tonnes. These species include primarily goldband snappers (*Pristipomoides multidens* and *P. typus*), red spot (*L. lentjan*), and painted sweetlip (*Diagramma pictum*).

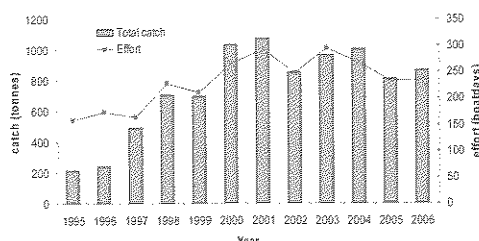


Figure 13. Total catch and effort within the Finfish Trawl Fishery, 1995-2006

Effort

Fishing effort has increased steadily from 158 boatdays in 1995, peaking at 294 boat days in 2001. During 2006 effort was 235 boat days (Figure 13). However as there is only one operator, care should be used in interpreting any trends in this fishery based on effort, as there are many reasons for any changes in fishing effort.

Catch Rates

Since 1997 the CPUE has shown little change, ranging from 3.0 to 3.9 tonnes per boat day (Figure 14). CPUE for 2006 was 3.7 tonnes/boat day.

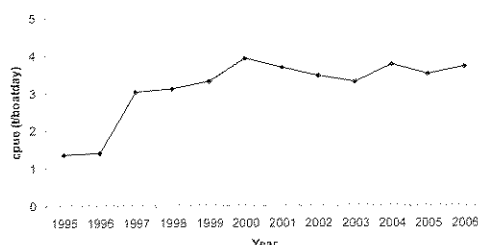


Figure 14. CPUE for the Finfish Trawl Fishery, 1995-2006

Marketing

Product is transported from Darwin in refrigerated trucks as 90% of the product is sold in Australia as fresh fish. Considerable tonnage but a small percentage is sold in Darwin. About 10% is sold

to export markets, 5% frozen to Asia and 5% fresh to the US.

Recreational Sector

Recreational fishers take some of these species, particularly saddletail snapper, red snapper and red emperor from inshore waters, however their impact on the offshore commercial fishery is considered negligible.

Fishing Tour Operator Sector

The majority of fishing tour operator activity is in inshore waters where some of the same species are taken.

The following 5 sections apply to all sectors

Non-retained Species (bycatch)

For the commercial Finfish Trawl Fishery, only 17.3% of the total catch is discarded. High proportions of discarded species (by weight) are sharks and rays (as there is a 'no-take' regulation in place with regard to these species). To assist in vastly reducing release mortality, the operator has developed a system comprising grids and rails on the fish hopper to enable sharks and rays to be returned to the water via a chute, alive and in a timely manner. This system is being evaluated by other trawl fisheries interstate with the intention of incorporating its use as standard operating practice.

Threatened Species Interaction

In 2006, there were no recorded interactions with threatened species in the Finfish Trawl Fishery. The method of fishing and the location of the fishery generally prevent interaction with these species.

Eco-system Impact

Fishing practices that cause minimal ecosystem impact are encouraged. The development, in conjunction with industry, of a semi-pelagic demersal trawl net that minimises sea bed disturbance and reduces the amount of bycatch was important in reducing the environmental impact of this fishery.

Social Impact

This fishery directly employs less than 10 people. However, there are flow-on benefits from the fishery for other industries (eg. freight haulage

and vessel repairs). Recreational fishers also target some of these species (within coastal waters) and recreational fishing forms an important component of the lifestyles and culture of a large proportion of people residing in the Northern Territory.

Economic Impact

The value of this particular fishery (one operator only) is confidential. Under current policy information obtained from a fishery with less than five active operators will not be released without prior consent from the licensee(s).

Offshore Net and Line Fishery

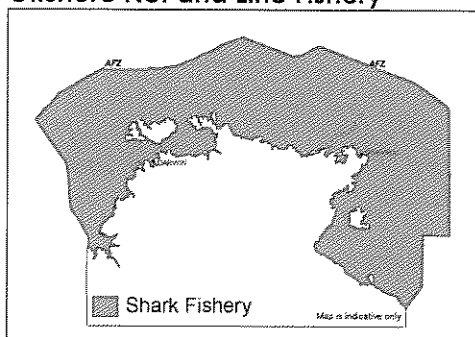


Figure 15. Area of the Offshore Net and Line Fishery

The commercial Offshore Net and Line Fishery (formerly known as the Shark Fishery) is a mixed target fishery. The target species are the blacktip sharks (*Carcharhinus tilstoni* and *C. sorrah*) and grey mackerel (*Scomberomorus semifasciatus*), with a variety of other sharks and pelagic finfish also landed.

A Joint Authority between the Northern Territory and the Commonwealth established under an Offshore Constitutional Settlement arrangement manages the Offshore Net and Line Fishery. This provides for the Territory to manage the day to day operations of the fishery on behalf of the NTFJA. A conservative approach has been adopted in managing the northern Offshore Net and Line Fishery, given the well-documented low productivity of many shark species. This is a limited entry fishery in which the number of commercial participants has been reduced considerably through a three for one licence reduction scheme.

Cooperative research efforts are under way with adjacent jurisdictions, with the Northern Territory

actively contributing to the implementation of an Operational Plan for the Sustainable Use of Northern Australian Shark Resources.

In 2004 the Offshore Net and Line Fishery received a WTO level of export accreditation against the Australian Government Guidelines for the Sustainable Management of Fisheries under the Commonwealth EPBC Act. The management arrangements of the fishery are recognised by the Australian Government to be operating in a sustainable manner, and the fishery is exempt from export regulation for three years. The fishery is due for reassessment in November 2007.

Concerns over IUU activities by foreign fishing vessels operating in Northern Territory waters led to a contraction of domestic fishing activity closer to the mainland during 2005 which is apparent again in 2006.

Sharks are also taken as limited byproduct in a range of fisheries targeting other species. The incidental take of sharks in other Northern Territory fisheries remains around 5% of the total combined fisheries shark catch indicating that the dedicated Offshore Net and Line Fishery accounts for 95% of the total shark catch.

Profile of the Fishery - Commercial Sector

Area

Operators are authorised to fish in Northern Territory waters from high water to the AFZ boundary, an area of approximately 522 632 km², with spatial restrictions placed on the use of certain gear. However, the majority of the fishing is undertaken within the coastal zone (within 12 nm of the coast or baseline) and immediately offshore in the GoC. Little fishing was undertaken in the offshore area of the fishery during 2006.

Fishing Method

Operators may use either longlines or pelagic nets, but the use of bottom set gillnets is prohibited.

Most shark fishing is undertaken by pelagic gill net. Although the legal maximum length is 2000 m, for operational reasons, nets are generally 1000 to 2000 m in length with a mesh size of 160 mm to 185 mm. Most nets are constructed of monofilament nylon, with a drop of

50 to a maximum 100 meshes. The nets are weighted and have a buoyed headline.

Catch

As described above, operations in the Offshore Net and Line Fishery are such that there are two separate target species groups - sharks, principally the blacktip sharks, and grey mackerel.

Logbook records indicated a total catch of all species for the fishery in 2006 of 1292 tonnes, decreasing slightly (7.6%) from the 2005 catch of 1398 tonnes. The total shark catch for 2006 was also a small decline (6.1%) to 780 tonnes, from the 831 tonnes of 2005 (Figure 16).

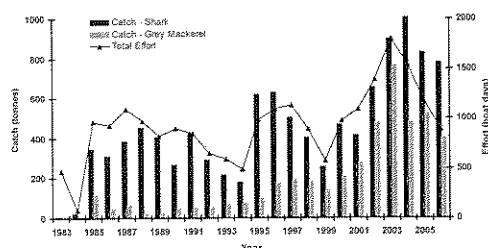


Figure 16. Catch and effort for the commercial Offshore Net and Line Fishery, 1983-2006

Effort in the fishery again decreased, with 899 days fished. Precautionary measures introduced to contain effort in the fishery in 2005, as well as IUU fishers and operational considerations, have successfully led to reduced domestic effort in both 2005 and 2006, relative to the preceding few years (Figure 16).

Blacktip shark catches were 457 tonnes, similar to the 440 tonnes landed in 2004 and represents a 20.6% increase over the 379 tonnes landed in 2005. The proportion of blacktips in the landed catch was 37.2% compared to 27% of the catch in 2004 and 2005. The grey mackerel catch of 404 tonnes (32.8% of the total landings) was a 23% decrease from the 526 tonnes taken in 2005 (Figure 17).

The previously strong increasing trend in catches evident since 1999 came to an end in 2005. Although grey mackerel remained the principal single target species in the fishery, operators report that market forces and other operational considerations such as weather conditions may be among the principal drivers of variation within grey mackerel catches. Catch variations largely

result from variations in targeting. However, it has not been possible to deduce from recorded catches and effort whether, in any fishing operation, the target was any particular species or species group, or just the suite of species typical of the fishery.

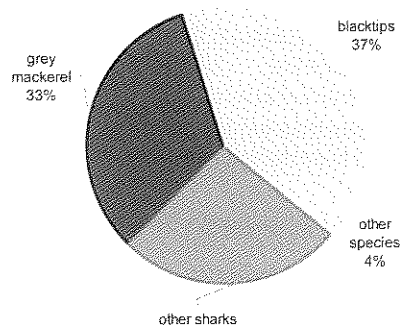


Figure 17. Composition of the commercial Offshore Net and Line Fishery catch, 2006

Byproduct Species

The catches of sharks other than blacktips was 323 tonnes (26.2% of the total catch, Figure 17), decreasing from 452 tonnes in 2005. Byproduct species were principally several species from the Family Carcharhinidae (the whaler or requiem sharks), mostly *Carcharhinus* spp. and *Rhizoprionodon* spp., as well as hammerhead sharks (*Eusphyra blochii* and *Sphyrna* spp.)

There were 26.4 tonnes of mackerels other than grey mackerel landed (2.2% of the total catch), all declared to be narrow-barred Spanish mackerel, *Scomberomorus commerson*. Small quantities of other fish species landed included tunas, mainly *Thunnus tonggol*, (corresponding to a combined total of 10.4 tonnes), 3.8 tonnes of trevallies (mostly *Caranx* spp. and *Carangoides* spp.), 1.8 tonnes each of queenfish (*Scomberoides* spp.) and pomfret (*Parastromateus niger*) as well as several coastal species each with landings of less than one tonne.

Sharks were also landed as an incidental catch in a range of commercial fisheries targeting other species. Catches in 2006 under the Restricted Bait Net entitlement held by these fisheries were 18.3 tonnes. The Barramundi Fishery harvested 11.9 tonnes, while the Coastal Net Fishery landed 6.1 tonnes, and the Coastal Line Fishery

4.5 tonnes. The total catch of 41 tonnes of shark landed by fisheries other than the Offshore Net and Line Fishery in 2006 was similar to the 44 tonnes landed by these fisheries in 2004, and a reduction from the 54 tonnes of 2005. Shark landings from fisheries other than the Offshore Net and Line Fishery have fluctuated between 32 and 79 tonnes since 1994.

Effort

Effort fluctuations have largely driven the high variability in catches of sharks and mackerel in the Offshore Net and Line Fishery. Fishers indicate that effort reflects both operational and market conditions. Recorded effort prior to 1 July 2005 (when known as the Shark Fishery) did not indicate target species. As a result only effort directed at the fishery as a whole can be reported. This constraint has been addressed through recently-introduced logbook amendments.

After initial low effort in the early 1980s, effort in the Offshore Net and Line Fishery was stable at around 900-1000 boat days through the late 1980s and early 1990s (Figure 16; the mean for 1985-1991 was 932.6 boat days). The 1990s was a period of particular variability. After a low point of 490 boat days in 1994, effort generally increased, deviating from this pattern with a sharp increase in 1997 (to 1127 boat days) but declining again over the next two years, to 892 boat days and 573 boat days in 1998 and 1999 respectively. Effort then steadily increased in following years to the series peak of 1800 boat days in 2003. Measures introduced to contain effort resulted in a decline through 1538 boat days in 2004, 1176 boat days in 2005, thence to 899 boat days in 2006.

Catch Rates

Catch rates for shark (Figure 18) have shown a relatively flat trend over the last two decades, excepting high points during the mid-1990s and 2004-6. Catch rates for total shark in the Offshore Net and Line Fishery, for most years since 1983, have been between 300 and 500 kg/day fished, but reached 626 kg/day in 1995, exceeded 700 kg/day in 2004 and 2005, and were 877 kg/day in 2006. Catch rates for blacktip sharks have shown a similar pattern, varying in the range 244-398 kg/day between 1997 and 2003. However, with catch rates of

286 kg/day in 2004 and 322 kg/day in 2005, only in 2006 was there a similar increase in catch rate to that shown by sharks in total, with the catch rate for 2006 being 514 kg/day. Grey mackerel catch rates have generally followed a pattern of a steady increase from the early 1990s, with the average catch rate in 2006 of 455kg/day similar to 2005's 448 kg/day.

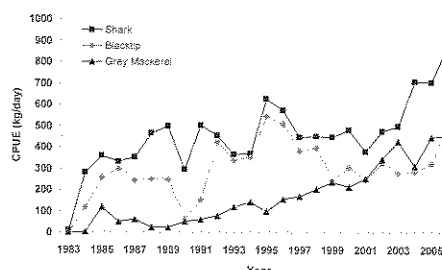


Figure 18. CPUE for the commercial Offshore Net and Line Fishery, 1983 to 2006

Marketing

Grey mackerel is marketed domestically as fillet, trunks and whole fish. Shark is marketed in trunk, fillet and whole forms, both as fresh and frozen product. Fin is a valuable product but must be landed with a prescribed proportion of shark meat. This measure is designed to contain wasteful practices in which only the fins are retained and the shark body is returned to the water. While some shark product is retained for local processing and consumption, most is sent interstate, with over 20% of total shark catch earmarked for direct export overseas.

Recreational Sector

Area

The significant areas for recreational shark catches are the Darwin Harbour, McArthur River and the Cobourg Peninsula areas.

Fishing Method

Most sharks are taken during reef fishing and general fishing (fishing with no specific target). These types of fishing generally use baited lines.

Catch

Sharks are not specifically targeted by recreational fishers, but are caught during other targeted fishing activities. In 1995, over 80,000 individuals were caught, but only 18% were retained, giving a harvest of 15,000 individuals.

Reef fishing and non-target fishing accounted for 74% and 18% of the total shark catch respectively. The proportion of shark harvested depends on the type of fishing undertaken. During non-target fishing 34% of sharks caught are harvested, whilst reef fishers only harvest 12%.

In 2000, a survey of recreational fishers found that over 76,000 sharks were caught, with 8,000 harvested and the remainder released. This indicates a 47% reduction in harvest rate since 1995. Barramundi fishing, reef fishing and non-target fishing accounted for 14%, 26% and 52% of the total shark catch respectively. The mortality rate of released sharks is not known.

Fishing Tour Operator Sector

Area

Sharks are not specifically targeted by FTOs, but are landed during other targeted fishing activities.

Catch

In 2006, 8039 sharks were caught by FTOs. Of these, 7639, or 95%, were released, representing a 6% increase in sharks caught by FTO clients over 2005 figures. The species of sharks caught and harvested were not recorded and the mortality rate of released sharks is not known.

The number of sharks caught by FTO clients has more than doubled since 1995, when fewer than 3000 sharks were caught.

The proportion of captured sharks that are harvested by FTO clients is about the same as the general recreational fisher community.

Indigenous Sector

Area

Most Indigenous fishing activity occurs in the close vicinity of communities and outstations, inland or near coastal waters.

Catch

Sharks and rays were one of the more important groups of fish caught by Indigenous people in the coastal areas of the Northern Territory. In 2000, a survey of Indigenous fishing activities found that over 12,000 sharks and rays were harvested, comprising just over 3% of the total finfish harvest. The species of sharks and rays caught

and harvested were not identified.

The following 5 sections apply to all sectors

Non-retained Species (bycatch)

Sharks are generally seen as a non-targeted or incidental catch for the recreational sector. Only the Offshore Net and Line Fishery harvests more than the generally low proportion of sharks caught, although this does depend on the type of fishing and the fishing location. Besides various mackerel species, the majority of other species caught by the recreational sector during targeted game fishing activities are trevally and queenfish (Family Carangidae). Most of these fish are retained, with a harvest rate of over 83%. Other minor species caught also have a high retention rate of 78%.

Although gill nets are often regarded as non-selective fishing gear, when used by a skilled operator they are very effective at taking the targeted catch. Nevertheless, the amount of bycatch depends strongly on location and season. Most shark species are now retained apart from the tawny shark, *Nebrius ferrugineus*, and species subject to 'no take' policy, the sawfishes and *Glyphis* spp. Rays are an uncommon bycatch in the surface set nets. Non-retained, rays are usually released alive. Some finfish with poor market acceptability (for example some trevally and queenfish) are retained only when there are suitable markets.

Threatened Species Interaction

In the Offshore Net and Line Fishery, operators reported interactions with one speartooth shark (*Glyphis* spp) and seventeen turtles which were recorded as caught and released. To assist with the release of animals, operators in the fishery are well versed with the recovery methods for turtles and all vessels carry a copy of the 'Protected Species Awareness Information for Professional Fishing Operations – Marine Turtles', which details recovery methods. To assist accurate reporting, operators also carry the National Heritage Trust publication 'Protected Marine Species Identification Guide' to assist with identification of turtles, sawfish, sharks and other protected species.

Ecosystem Impact

A number of studies are underway which

examine the relative impact of harvesting sharks and grey mackerel.

Little is known about the large scale stock structure of most of the shark species harvested, particularly the extent to which Indonesia, Western Australia, Queensland and the Northern Territory share fishery resources. However, this problem has been investigated in an Australian Centre for International Agricultural Research (ACIAR) sponsored project, led by the CSIRO. The project *Artisanal Shark and Ray Fisheries in Eastern Indonesia: Their Socioeconomic and Fisheries Characteristics and Relationship with Australian Resources* was a collaborative effort between several Australian and Indonesian agencies. The project provided basic biological information, examined stock status and described socioeconomic attributes of the fisheries. Although, as an aid project, it was principally designed for the benefit of fisheries management in Indonesia, the project has made a substantial contribution of biological data to the regional fund of knowledge on shark stocks. Important results are that Australian and Indonesian populations of *Carcharhinus sorrah* and *Rhizoprionodon acutus* were demonstrated to be genetically separate, so that these stocks can be managed separately. Populations of *Sphyrna lewini*, *Prionace glauca*, *C. falciformis*, *C. obscurus* and *Rhynchobatus* spp. however, were genetically not distinguishable across the two countries, so that caution and cooperation in their management is suggested.

The Fisheries Research and Development Corporation (FRDC) project, *Northern Australian Sharks and Rays: the Sustainability of Target and Bycatch Species, Phase 2* was recently completed (Salini et al. 2007). The project has provided comprehensive data on species composition and biological characteristics of sharks and rays taken in northern Australia fisheries, including those fisheries for which the sharks and rays are bycatch. The major output of the project was a risk analysis which provides for prioritisation for research and management direction. Both the ACIAR and FRDC funded projects provide genetic and other information that adds to the understanding of the spatial relationships of northern shark stocks.

The catch composition information provided by these projects forms a baseline against which the Offshore Net and Line Fishery can be monitored

for biodiversity change in the future, and is considered of particular importance in assessing the potential ecological impact of foreign illegal fishing on Australian shark stocks.

In 2006, government observers initiated four observer trips on shark fishery vessels. A FRDC funded research project (representing further collaboration among the northern research agencies) is examining the spatial stock structure of grey mackerel. The project began during 2005 and will continue into 2008.

Controls on fishing gear have been introduced to minimise any physical impact on the seabed, other than anchoring. A prohibition on the use of bottom set gill nets was introduced following interactions with turtles.

Social Impact

In 2006, there were a total of 17 licences operating in the Offshore Net and Line Fishery. Most vessels employ a skipper and have two or three crew members.

Economic Impact

At the point of first sale in 2006, the overall catch value of the commercial shark fishery was just over \$4.34 million (\$6.2 million 2005). The black tip shark component was valued at \$0.70 million (2005 - \$0.66 million), \$1.6 million for other sharks (2005 - \$2.2 million) and \$ 1.87 million for grey mackerel (2005 - \$3.14 million).

7. Management Arrangements

Timor Reef Fishery

Management

Management objectives for the Timor Reef Fishery are achieved by maintaining target, incidental and non-retained catch levels within acceptable ranges. Should landings of goldband snapper rise above sustainable yield estimates, a review of the management arrangements will commence. Similarly, a significant decline in catch rates would prompt a review of the management measures for this fishery (Table 1).

Existing arrangements also seek to ensure the sustainability of byproduct species taken in the Timor Reef Fishery. Acceptable catch ranges for by-product are not more than 10% of the weight

of aggregate landings in the fishery.

Monitoring of the fishery is achieved through analysis of commercial logbook reports and onboard observers.

Controls on the construction and use of fish traps and vertical lines minimise the effects on ecosystem components. Should significant interaction with components be identified, the appointed advisory group will make recommendations regarding appropriate remedial action. No such interactions were identified throughout the reporting period.

History

A joint venture feasibility study between an Australian and Japanese company was undertaken in the early 1980s to investigate the potential for a domestic dropline fishery. Landings from the trial were around 1500 tonnes per annum. It was not until 1987 that commercial droplining by domestic operators commenced. Jurisdictional arrangements were changed in 1995, at which time management responsibility for line fishing and trapping in waters adjacent to the Northern Territory passed to the Northern Territory Government.

In responding to concerns that excess fishing capacity may lead to the over-exploitation of goldband snapper stocks, a moratorium on the issue of further entitlements for what is now known as the Timor Reef Fishery was announced in December 1991. Only those fishers active in the fishery or licence holders able to demonstrate a commitment to entering the fishery retained access.

Separate management measures were implemented for the Timor Reef Fishery in 1993 when it was annexed from the Demersal Fishery. Overall fishing capacity within the boundary of the Timor Reef Fishery was reduced from a potential 60 to 22 licences. Limits on the number of operators were implemented in responding to concerns that fishers displaced from interstate fishing restructuring programs may lead to over exploitation of goldband snapper stocks.

A further revision of the jurisdictional arrangements occurred in 1995. At that time management responsibility for the Timor Reef Fishery was passed to the NTFJA. The NTFJA provided for the Commonwealth and the Northern Territory to jointly manage the fishery

given the likelihood of shared resources with adjacent national and international jurisdictions. RDPIFR undertake day-to-day management of the Timor Reef Fishery.

Agreement was reached on a ceiling of 45 fish traps during 2002. The limit was imposed as a precautionary measure and to provide clarity on the amount of fishing gear used under each licence.

Current Issues

Anecdotal reports from domestic fishers suggest illegal foreign fishing catches are increasing significantly.

The impacts of IUU fishing in northern Australian waters, primarily by foreign fishers are poorly understood. The Northern Territory Government continues to lobby the Federal Government to ensure adequate resources are allocated by the Australian Government (governing body is the Australian Fisheries Management Authority (AFMA)) to mitigate IUU impacts on the sustainability of red snapper stocks.

While it is accepted that most IUU fishers are primarily targeting sharks, apprehended vessels holding significant quantities of red snapper are becoming more prevalent. Coastwatch surveillance aircraft reported over 7,800 sightings in 2006, (13,000 sightings in 2005) highlighting a significant illegal foreign fishing vessel presence in northern Australian waters. Research to determine the probable impact this illegal foreign presence is having on domestic shark and snapper stocks is continuing with AFMA funding a number of research projects attempting to determine the species and volumes of sharks and snappers being harvested. It is not yet possible to determine the potential effect IUU fishing is having on the tightly regulated domestic Timor Reef Fishery.

Oil and gas exploration companies carrying out 3D seismic surveys within the Timor Reef Fishery have impacted on commercial harvests from the immediate survey areas. Industry and RDPIFR, with financial assistance from exploration companies, are carrying out additional research and monitoring of the survey areas in an attempt to better quantify the surveys impacts. Industry and RDPIFR continue to lobby oil and gas exploration companies in an effort to increase cooperation and to reduce economic impacts on

fishing operators. These surveys have forced operators to temporarily relocate fishing activities to elsewhere within the fishery.

Future Plans

An industry request to review the levels of permitted gear (handlines and droplines) and management arrangements will be undertaken throughout 2006/07 with a view to developing a formal plan of management for the fishery. The Timor Reef Fishery Management Advisory Committee (TRFMAC) has formed and tasked a Timor Reef Fishery Assessment Group (TRFAG) to explore the potential of introducing catch quota management of the target species into revised management arrangements. The TRFAG is expected to report its findings, along with recommendations to a meeting of the TRFMAC in early 2007.

Goldband snapper are also landed outside the boundary of the Timor Reef Fishery, but are likely to be part of the same stock. Management triggers recognise this, with the management arrangements under constant review.

Consultation, Communication and Education

Regular consultation occurs between RDPIFR, the Northern Territory Timor Reef Fishermen's Association and the Northern Territory Seafood Council. In addition to this, RDPIFR staff undertake regular visits to the wharf to speak informally with fishers.

The low levels of participation in the Timor Reef Fishery allow all stakeholders to be directly involved in discussions on any proposed management arrangements. The TRFMAC met in February and formally represents the interests of all stakeholders and provides a forum to discuss any proposed amendments to the management regime. The TRFAG was convened in June to discuss the potential for alternative management arrangements and recommendations from this group will be passed to the TRFMAC for consideration.

Conservation groups and non-government organisations are advised and consulted on topical fisheries issues, including the Timor Reef Fishery as relevant. Members of the public, including community and environmental/conservation groups are also invited to provide their views through the release of public discussion papers and other

consultative processes.

RDPIFR also puts out publications in the form of Fisheries Reports and newsletters to inform and educate stakeholders.

Demersal Fishery

Management

Management arrangements for the Demersal Fishery aim to maintain catches of goldband snapper and red snappers by all sectors within acceptable ranges. Red snappers are also a target species of the Finfish Trawl Fishery. Should landings of goldband snapper from the Timor and Arafura Seas rise above sustainable yield estimates, a review of the management arrangements will commence. Similarly, a significant decline in catch rates would prompt a review of the management measures for this fishery (see Table 1).

History

With the passage of the revised jurisdictional arrangements contained in the Offshore Constitutional Settlement of 1988, management responsibility for line fishing and trapping in waters adjacent to the Northern Territory passed to the Northern Territory Government from the Commonwealth.

In 1993, the area of the Timor Reef Fishery was annexed from the Demersal Fishery and the inshore boundary was altered to separate the Demersal Fishery from the inshore Coastal Line Fishery. All operators who had previously held a fishing entitlement to this area were issued a demersal licence if they did not already hold such an entitlement.

A further revision of the jurisdictional arrangements occurred in 1995. At that time, management responsibility for the Demersal Fishery was passed to the NTFJA.

The NTFJA provided for the Commonwealth and the Northern Territory to jointly manage the fishery given the likelihood of shared resources with adjacent national and international jurisdictions.

Under this arrangement, RDPIFR undertakes day to day management of the Timor Reef, on behalf of the NTFJA.

Current Issues

Encouraging further development of this under-utilised fishery and encouraging operators to undertake fishing throughout the entire fishery area continue to be the key objectives for industry and government.

The impacts of IUU fishing in northern Australian waters, primarily by foreign fishers are poorly understood. The Northern Territory Government continues to lobby the Federal Government to ensure adequate resources are allocated by the Australian Government (governing body is AFMA) to mitigate IUU impacts on the sustainability of red snapper stocks.

While it is accepted that most IUU fishers are primarily targeting sharks, apprehended vessels holding significant quantities of red snapper are becoming more prevalent. Coastwatch surveillance aircraft reported over 7800 sightings in 2006 highlighting the significant illegal foreign fishing vessel presence in northern Australian waters. Research to determine the probable impact this illegal foreign presence is having on domestic shark and snapper stocks is continuing with AFMA funding a number of projects attempting to determine the species and volumes of sharks and snappers being harvested. It is not yet possible to determine the potential effect IUU fishing is having on the tightly regulated domestic Demersal Fishery.

Future Plans

RDPIFR, in consultation with industry have held a series of workshops to develop a sectorial development plan for offshore snappers. The levels of permitted gear (hand and drop lines) will be incorporated into discussions with industry over the development plan for the combined offshore snapper fisheries.

Fishers in the Demersal Fishery share the same offshore snapper stocks with the Finfish Trawl Fishery and operators from both fisheries are involved in discussions to develop the shared resource. Discussions held so far have indicated a conservative development plan for the offshore snapper resource. Fisheries sharing the offshore snapper resource in the Arafura Sea have sought to introduce an additional Finfish Trawl licence to increase resource utilisation, particularly in the more remote regions.

Other issues discussed by industry have been

long term protection of the deepwater goldband snapper habitat areas from potential finfish trawl gear damage and the re-allocation of potential red snapper catch from the Demersal Fishery to the Finfish Trawl Fishery. This is to be achieved through a licence reduction scheme that should avoid any potential for future catch conflicts and ensure the on-going sustainability of red snappers.

The management arrangements relating to the Demersal Fishery have been assessed against the Guidelines for the Ecologically Sustainable Management of Fisheries under the EPBC Act. The fishery has received the highest level of accreditation and thus declared exempt from export regulations under the EPBC Act for five years.

The Northern Territory and Australian Governments are working closely with the Indonesian Government to develop a bilateral Management Plan for red snapper shared stocks in the Arafura Sea.

Consultation, Communication and Education

Regular consultation occurs between RDPIFR, the Northern Territory Demersal Fishermen's Association and the Northern Territory Seafood Council. In addition, RDPIFR officers make regular visits to the wharf to speak informally with fishers.

The low levels of participation in the Demersal Fishery allow all stakeholders to be directly involved in discussions on any proposed management arrangements. A framework for a Demersal Fishery Management Advisory Committee has been developed to formally represent the interests of all stakeholders and provide a forum for any proposed amendments to the management regime.

Conservation groups and non-government organisations are advised and consulted on topical fisheries issues, including the Demersal Fishery, as relevant. Members of the public, including community and environment/conservation groups are also invited to provide their views through the release of public discussion papers and other consultative processes.

RDPIFR also put out publications in the form of Fisheries Reports and newsletters to inform and educate stakeholders.

Finfish Trawl Fishery

Management

Management of the Finfish Trawl Fishery seeks to ensure the ecological sustainability of target, byproduct and bycatch species. Trigger points and management actions for the Finfish Trawl Fishery are listed in Table 1. An appropriate management response would be made in consultation with stakeholder groups should a trigger point be reached. Amended arrangements are to be implemented within 12 months of a trigger being activated.

History

With the passage of the revised jurisdictional arrangements contained in the Offshore Constitutional Settlement of 1995, management of the trawl, shark and line fishing and trapping in waters adjacent to the Northern Territory passed to the NTFJA.

The NTFJA provides for the Commonwealth and the Northern Territory to jointly manage the fishery given the likelihood of shared resources with adjacent national and international jurisdictions. RDPIFR on behalf of the NTFJA undertakes the day-to-day management of the fishery.

Current Issues

The Finfish Trawl Fishery has been assessed against the Australian Government Guidelines for the Sustainable Management of Fisheries under the EPBC Act. The fishery received the highest level of accreditation and has been added to the list of fisheries exempt from export regulations for five years.

The impacts of IUU fishing in northern Australian waters, primarily by foreign fishers are poorly understood. The Northern Territory Government continues to lobby the Commonwealth to ensure adequate resources are allocated by the Australian Government (governing body is AFMA) to mitigate IUU impacts on the sustainability of red snapper stocks.

While it is accepted that most IUU fishers are primarily targeting sharks, apprehended vessels holding significant quantities of red snapper are becoming more prevalent. Coastwatch surveillance aircraft reported 7800 sightings in 2006 (13,000 in 2005) highlighting the significant, but declining illegal foreign fishing vessel

presence in northern Australian waters. Research to determine the probable impact this illegal foreign presence is having on domestic shark and snapper stocks is continuing with AFMA funding a number of projects attempting to determine the species and volumes of sharks and snappers being harvested. It is not yet possible to determine the potential effect IUU fishing is having on the tightly regulated domestic Finfish Trawl Fishery.

Future Plans

RDPIFR, in consultation with industry have held a series of workshops to develop a sectorial development plan for offshore snappers.

Fishers in the Demersal Fishery share the same offshore snapper stocks with the Finfish Trawl Fishery and operators from both fisheries are involved in discussions to develop the shared resource. Discussions held so far have indicated a conservative development plan for the offshore snapper resource. Fisheries sharing the offshore snapper resource in the Arafura Sea have sought to introduce an additional Finfish Trawl licence to increase resource utilisation, particularly in the more remote regions. In 2006, the NTFJA granted approval to issue an additional Finfish Trawl licence for the fishery subject to certain criteria being filled. RDPIFR is developing a fair and transparent Expressions of Interest document seeking applications from persons wishing to be selected for the right to apply for a single finfish trawl licence. The Expressions of Interest is expected to be publicly available during 2007-08.

Other issues discussed by industry have been long term protection of the deepwater goldband snapper habitat areas from finfish trawling and the permanent re-allocation of potential red snapper catch from the Demersal Fishery to the Finfish Trawl Fishery to avoid any potential for future catch conflicts and ensure the on-going sustainability of red snappers.

RDPIFR will continue to monitor the fishery to ensure catches are maintained within agreed ranges.

Consultation, Communication and Education

Joint industry/government forums are used to consult with the single Finfish Trawl operator. RDPIFR also put out publications such as Fisheries Reports and newsletters to inform and

educate stakeholders.

Offshore Net and Line Fishery

Management

Management of the Offshore Net and Line Fishery seeks to maintain shark and grey mackerel catches within appropriate ranges, dictated by scientific understanding of sustainable harvest levels and the underlying value of the fishery in providing food and economic value. This is achieved through a range of input and output controls and containment of fishing capacity through a "three for one" licence reduction program. This licence reduction program requires new entrants to acquire and transfer three restricted Offshore Net and Line Fishery licences to the Territory for the issuance of an unrestricted Offshore Net and Line Fishery licence. By 2005, overall capacity had been reduced from 38 licences to 17 licences.

Fin ratio licence conditions were imposed on Offshore Net and Line licensees in late 2003 and seek to prevent the targeting of large shark for their fins alone. The fin ratios are reviewed periodically and have resulted in a general ratio reduction of 17%. A review of the fin ratios was conducted in 2006 with another review scheduled for late 2007.

The current ratios are 6.5% fresh or frozen fin as a proportion of trunk weight, 13% fresh or frozen fin as a proportion of fillet weight and 3% fresh or frozen fin as a proportion of whole weight. Licensees must have an appropriate amount of meat for every fin in their possession. The ratio is designed to factor in operational circumstances such as unintentional loss of useable product through machinery malfunctions, chiller breakdowns, predator and sea-lice attack.

Catch restrictions apply to the harvest of Spanish mackerel in the Offshore Net and Line Fishery. The byproduct limit is intended to link landings of Spanish mackerel to grey mackerel catches. Such a measure was agreed to address concerns by other sectors regarding pelagic net fishers targeting Spanish mackerel.

A prohibition on the possession of sharks and shark product is in place for the Timor Reef, Demersal, Finfish Trawl and Spanish Mackerel Fisheries. The Barramundi, Coastal Net and

Coastal Line Fisheries have allowances for incidental catches of sharks. The fin to meat ratios also apply to these fisheries, with the fin to meat ratios imposed in addition to trip limits.

In 2004, the Offshore Net and Line Fishery underwent an ecological assessment of management arrangements by the Australian Government against the Guidelines for Ecological Sustainable Fisheries under the EPBC Act. The Offshore Net and Line Fishery was found to be operating in a sustainable manner and accredited with a WTO which permits the fishery to export shark products until November 2007.

The approval of the WTO imposed recommendations to be undertaken by the fishery. Annual advice regarding the status of the fishery and progress in meeting the recommendations of the WTO is required and has been provided by RDPIFR.

In 2006, as part of the WTO recommendations RDPIFR reviewed the catch logbook program. Logbooks were amended to include the capacity to record bycatch by weight on a shot-by-shot basis. Validation of the logbook program is conducted by observer trips and compliance checks. Data collected from observer trips compared with logbook returns from non-observer trips is consistent, indicating that the logbook returns are factual. Similarly Northern Territory police officers conducting compliance checks of logbook returns with catches onboard the vessels have found no irregularities.

To improve the identification and quantification of shark catch on a species specific basis, RDPIFR has developed a shark identification guide booklet which has been provided to each vessel in the fleet. RDPIFR is also participating in a National Heritage Trust funded research project, *Pilot Study to Develop Methodology to Determine Indigenous Fishing Impacts on Sharks and Rays in the Northern Territory*, to gain an understanding of the harvest of shark by the Indigenous sector.

History

A large commercial shark fishery commenced throughout northern Australia in the early 1970s. At that time, a Taiwanese gill net fleet targeted a range of pelagic shark and fish species, with foreign fishing vessels working as close as 12

nautical miles (approximately 22 km) off the coast prior to 1978. Foreign fishing vessels were excluded from the GoC in 1979.

With the declaration of the AFZ in 1979, the foreign fishing fleet's exclusion zone adjacent to Arnhem Land and the Wessel Islands increased to between 40 and 50 nautical miles offshore. A bilateral agreement between Australia and Taiwan permitted continued access for 30 gill netters to land up to 7000 tonnes of shark from northern Australian waters. Further restrictions were introduced in 1986 due to declining catch rates and concerns about the incidental capture of dolphins. These restrictions limited the length of gill nets to not more than 2.5 km, thereby rendering foreign gillnetting uneconomic. Despite the permitted use of baited longlines, foreign fishing operations in northern Australian waters ceased in late 1986.

Direct involvement by dedicated domestic shark fishers in coastal waters began in the early 1980s. At that time, the Northern Territory actively encouraged the development of the inshore component of the fishery. Landings remained low with catches ranging from 100 to 500 tonnes, with shark filets sold on established markets throughout southern Australia.

Current Issues

The Northern Territory is signatory to a multi-jurisdictional "Operational Plan" for northern Australian shark fisheries to achieve the outcomes of the National Plan of Action for Sharks (NPOA). This Northern Operational Plan was endorsed at a meeting of fisheries officers from all jurisdictions in September 2004 and is the only Operational Plan to address issues raised in the NPOA in Australia at this time.

A review of the impacts of IUU fishing in northern Australian waters, primarily by foreign fishers, is currently underway. An expected outcome of this review is to ensure adequate resources are allocated by the Australian Government (its operational arm is AFMA) to mitigate IUU impacts on the sustainability of shark stocks. This review is expected to conclude in 2007-08.

The impacts of foreign IUU fishing in northern Australian waters are poorly understood. The Northern Territory Government continues to lobby the Australian Government to ensure adequate resources are allocated to mitigate IUU

impacts on the sustainability of shark stocks.

Most IUU fishers are primarily targeting sharks, and are a significant illegal presence in northern Australian waters. Coastwatch surveillance aircraft reported 7800 sightings, a decrease of 40% in 2006 from 2005. Research to determine the probable impact IUU is having on domestic shark stocks is continuing with AFMA funding a number of projects attempting to determine the species and volumes of sharks being harvested. It is not yet possible to determine the potential effect IUU fishing is having on the predominately inshore, tightly regulated, small domestic Offshore Net and Line Fishery.

The collaborative research project to develop mark-recapture (tagging) protocols to provide ongoing monitoring for the Northern Territory Offshore Net and Line Fishery will also assist in determining movement rates and life history linkages between inshore (where most domestic fishing occurs) and offshore (mostly IUU activity) stocks.

The Offshore Net and Line Licensee Committee of the Northern Territory Seafood Council (formally the Shark Fishermen's Association) implemented a voluntary 'no-take' policy in December 2004 for all sawfish in Northern Territory waters in recognition of the higher risk these species face in the fishery. Logbooks were amended in 2005 to allow for accurate reporting of threatened species and species of scientific interest. This will enable recording of sawfish interactions by species and assist to determine their distribution and status.

A review of the management objectives, performance indicators, and trigger points (see Table 1) was undertaken in early 2005 to determine if imposed gear and effort reductions were adequate to address trigger reference points being exceeded for grey mackerel and other shark byproduct during 2004. New effort reduction strategies were put in place in 2005 with catch and effort statistics for 2005 and 2006 indicating that the new strategies were having the desired effect.

The fishery will be subject to further review during 2007 based on the recommendations of the FRDC report *Northern Australian Sharks and Rays: The Sustainability of Target and Bycatch Species, Phase 2* (Salini et al. 2007). RDPIFR will continue to develop species specific

management measures in light of information in the report with respect to the identified risks for northern shark species in combination with other information at hand.

Future Plans

The incidental landings of sharks in fisheries targeting other species are subject to annual review. The fin ratios are to be reviewed periodically to ensure they meet the sustainability criterion. Due to changing fishing methods within the fishery, the fishery was reviewed at the annual Offshore Net and Line Fishery Management Advisory Committee (ONLMAC) meeting held in September 2006.

The Australian Government assessment of the Offshore Net and Line Fishery for ecological sustainability under the EPBC Act was completed in May 2005, with accreditation of the WTO being extended until November 2007. The implementation of new effort controls into the management arrangements of the fishery during 2005 has ensured a significant reduction in shark catches taken by the long-line fishing method. The Offshore Net and Line Fishery is now working toward meeting all WTO recommendations with industry committed to ensure ecological sustainability through a cooperative working relationship with government.

Consultation, Communication and Education

Regular communication and consultation occurs between stakeholders to discuss matters of concern within the Offshore Net and Line Fishery. Stakeholders involved in such discussions include the Northern Territory Offshore Net and Line Licensee Committee, the Northern Territory Seafood Council, neighboring jurisdictions, other extractive stakeholders and wider interest groups.

Workshops have been convened as required, and these serve as a forum for industry, management and researchers to canvass all issues of interest to the Offshore Net and Line Fishery.

The ONLMAC comprises membership from a wide range of stakeholder interest groups to provide expert advice to the Executive Director of Fisheries. This committee met in September 2006 to work through issues to ensure the fishery continues to be sustainably managed in an open

and transparent manner.

8. Fisheries Monitoring, Research, Surveillance and Enforcement

Timor Reef Fishery

Monitoring

This fishery is monitored primarily through logbooks, which operators are required to fill out on a daily basis during fishing operations. These logs provide detailed catch and effort information, as well as information on the spatial distribution of the fishery. Logbooks are submitted with monthly marketing information by the 28th day of the following month. In addition to logbooks, RDPIFR officers conduct onboard monitoring of commercial fishing trips. While onboard, observers document vessel and gear information, location, depth, fishing practices, catch composition (including by-catch), and where possible, measure all landed species.

Eight onboard monitoring trips were conducted during 2006. This increased number of observer trips was due to the need to monitor immediately before, during and after seismic surveys that were conducted within the fishery. These additional trips were funded by Santos Ltd.

Stock Assessment Methods and Reliability

A stock assessment of goldband snapper for the Timor Reef Fishery was undertaken in 2003. This analysis also included part of the Demersal Fishery from the boundary of the Timor Reef Fishery to longitude 133° E, as 95% of the Demersal Fishery catch of goldband snapper is within this area. These two sectors encompass the same goldband snapper stocks. The models used in this stock assessment were an extension of those developed by Professor Carl Walters at a workshop in Darwin in 1996 and details can be found in Ramm (1997).

An absolute figure cannot be placed on sustainable harvest because key parameters (Indonesian catch and effort, the level of interchange of fish and recruits, and important productivity parameters for goldband snapper) are not known. However, the goldband snapper biomass has been estimated to be between 3,000-20,000 tonnes, with 9,000 tonnes

considered the more realistic estimate. It has been recommended that the harvest level of goldband snapper should not exceed 10-15% of estimated biomass.

Current Harvest Status

In the Timor Sea, goldband snappers are targeted by Indonesian long line vessels as well as Australian trap and dropline vessels. These methods target fish above the size of maturity. Harvest levels in the Australian sector of the Timor Sea are below current reference points.

Future Assessment Needs

Future assessment needs to concentrate on the degree of movement of snappers between Australia and Indonesia, the identification of goldband and red snapper juvenile habitats, and obtaining more accurate growth parameters from the capture of juvenile goldband snapper.

Research

Summary to Date

Fine spatial analysis of this fishery was undertaken as part of a FRDC funded project 2005/047 which commenced in October 2005. This project used GIS spatial statistics methods to look at new ways to incorporate the very diverse forms of physical and environmental data, often on different scales, with Timor Reef Fishery logbook data. This study showed that bathymetry and geomorphology strongly influence catches of goldband snapper.

The stock structure of goldband snapper (*P. multidentis*) has been determined using both genetic methods and otolith microchemistry, and was funded by FRDC (1996/131, 1998/154). These studies were collaborative projects between RDPIFR, the Western Australian Department of Fisheries and the Queensland Department of Primary Industries (QDPI). Both studies used fish from the same sites.

The genetic study showed no differences between Australian sampling sites in the Timor and Arafura Seas, but a significant difference in the Timor Sea between Kupang (West Timor) and the north-west Australian site. These sites were located less than 200 nautical miles from each other on either side of the Timor Trench (Ovenden et al., 2002). Otolith microchemistry revealed distinct populations for all sites sampled, indicating that substantial movement of

adults between sites is unlikely (Newman et al., 2000).

Growth and reproductive studies were undertaken on *P. multidentis*, as part of the collaborative ACIAR funded project between Australia and Indonesia (FIS/1997/165). This study provided updated parameters that were incorporated into stock assessment models for the current assessment.

Incorporation into Management

The recent research findings have confirmed the validity of present management arrangements for this fishery between the Northern Territory, Western Australia and Indonesia.

Current Research

Current research is focused on developing a holistic approach to fisheries management using geospatial statistics and fuzzy rule-based modelling. This work, funded by FRDC (project 2005/047), explores new ways of incorporating the very diverse forms of physical and environmental data (often on different spatial scales), with catch and effort data from the Timor Reef Fishery. This will enable analysis of the many components that may affect fish abundance and catchability in a geo-referenced framework. The fuzzy rule-based modelling allows the uncertainties of human knowledge to be captured as hard data. This work is expected to be completed in 2007.

A project to ascertain if hearing damage has occurred in goldband snapper due to seismic survey exposure was undertaken by Curtin University with RDPIFR as collaborators. This project was funded by Santos Ltd and is expected to be completed in December 2007.

Compliance

Compliance with the Timor Reef Fishery management arrangements is undertaken by the Marine and Fisheries Enforcement Section (MFES) of the Northern Territory Police, Fire and Emergency Services, under the NT *Fisheries Act 1988*.

The MFES effectively monitors compliance and enforces the Timor Reef Fishery management arrangements through the inspection of vessel arrivals and departures through the single port of Darwin. This includes verification of catch returns against processor returns (i.e. requirement for all

operators to specify where they are selling their product).

The MFES has the power, if necessary, to investigate the records of wholesalers and licensees.

In 2006, there were no significant domestic compliance issues recorded for this fishery.

Demersal Fishery

Monitoring

The Demersal Fishery is monitored primarily through logbooks, which operators are required to fill out on a daily basis during fishing operations. These logs provide detailed catch and effort information, as well as information on the spatial distribution of the fishery. Logbooks are submitted with monthly marketing information by the 28th day of the following month.

No monitoring trips were conducted in the Demersal Fishery during 2006, due to the high level of observer activity required in the Timor Sea to monitor fish catches prior to, during and following seismic survey activity in the area. However, due to the similarity of methods, fishing grounds and catch composition of this fishery with the Timor Reef Fishery, it is felt that observer information from the Timor Reef Fishery adequately covers the Demersal Fishery, especially given the low level of fishing activity in this fishery.

Stock Assessment Methods and Reliability

Stock assessment for goldband snapper has been combined for both the Demersal and Timor Reef fisheries, as 95% of fishing effort undertaken in the Demersal Fishery occurs on grounds adjacent to the Timor Reef Fishery, which encompass the same goldband snapper stocks.

Current Harvest Status

The most recent stock assessments of tropical snappers in relation to sustainable harvest levels indicate that current catch levels in the Australian sector of the Arafura Sea are below triggers set for a review of management arrangements.

Future Assessment Needs

Future assessments need to concentrate on the degree of movement of both goldband and red

snappers between Australia and Indonesia, the identification of juvenile snapper habitats and obtaining more accurate growth parameters from the capture of juvenile snapper.

Research

Summary to Date

GIS spatial statistical methods have shown that there is a relationship between bathymetry and geomorphology and high catches of goldband snapper. Although this work (FRDC project 2005/047), was undertaken in the Timor Reef Fishery, there are implications for the Demersal Fishery with respect to these findings.

The stock structure of goldband snapper (*P. multidentis*) has been determined through a number of externally funded projects.

The FRDC funded projects 1996/131; 1998/154, were collaborative projects between RDPIFR, the Western Australian Department of Fisheries and QDPI. These studies used mitochondrial DNA and otolith microchemistry techniques to determine the stock structure of *P. multidentis* resources between the Northern Territory and Western Australia. Opportunistic samples were obtained from Kupang (Indonesia). Both studies used fish from the same sites.

The genetic study showed no differences between Australian sampling sites in the Timor and Arafura Seas, but a significant difference in the Timor Sea between Kupang (West Timor) and the north-west Australian site less than 200 nautical miles on either side of the Timor Trench (Ovenden et al., 2000). Otolith microchemistry revealed distinct populations for all sites sampled, indicating that substantial movement of adults between sites is unlikely (Newman et al., 2000).

Growth and reproductive studies were undertaken on *P. multidentis*, as part of the collaborative ACIAR funded project between Australia and Indonesia (FIS/1997/165). This study provided updated stock assessment parameters which were incorporated into stock assessment models for the current assessment.

Incorporation into Management

The recent research findings have confirmed the validity of present management arrangements for this fishery between the Northern Territory, Queensland and Indonesia.

Current Research

Current research is focused on developing a holistic approach to fisheries management using geospatial statistics and fuzzy logic rule-based modeling (FRDC project 2005/047). This work explores new ways of incorporating the very diverse forms of physical and environmental data (often on different spatial scales), with catch and effort data. The project has enabled us to analyse the many components that may affect fish abundance and catchability in a geo-referenced framework. The fuzzy rule-based modeling allows the uncertainties of human knowledge to be captured as hard data. This work is expected to be completed in 2007.

Compliance

Compliance with the Demersal Fishery management arrangements are undertaken by the MFES of the NT Police, Fire and Emergency Services, under the Northern Territory *Fisheries Act 1988*.

The MFES effectively monitors and enforces the Demersal Fishery management arrangements through the inspection of vessel arrivals and departures through the single port of Darwin. This includes verification of catch returns against processor returns (i.e. requirement for all operators to specify where they are selling their product). The MFES has the power, if necessary, to investigate the records of wholesalers and licensees.

In 2006, there were no recorded compliance issues for the Demersal Fishery.

Finfish Trawl Fishery

Monitoring

Due to resource constraints in 2006, only one monitoring trip was conducted in the calendar year. While on-board, observers document vessel and gear information, location and depth fished, fishing practices, catch composition, and measure landed species.

Stock Assessment Methods and Reliability

Stock assessments for the Finfish Trawl Fishery have been undertaken in 1996 and 2004. The initial assessment used a Stock Reduction Analysis model developed by Prof Carl Walters (Ramm 1997). The more recent assessment, Yield Per Recruit and Biomass Dynamics

models, incorporated updated biological parameters.

An absolute figure cannot be placed on sustainable harvest for the fishery because key parameters (Indonesian catch and effort, and level of interchange of fish and recruits, and important productivity parameters for red snapper) are not known. However for the Australian sector of this fishery, the biomass of red snappers has been estimated from a fishery independent survey in 1990 to be 24,000 tonnes. It has been agreed that a trigger point be implemented for management purposes if harvest levels exceed 10% of this figure.

Genetic studies undertaken as part of an ACIAR project (FIS/1997/165) indicate that red snapper (*L. erythropterus*) and saddletail snapper (*L. malabaricus*) stocks are shared with Indonesia in the Arafura Sea (Salini et al. 2006).

Current Harvest Status

The high level of Indonesian trawl fishing in the Arafura Sea adjacent to the AFZ does not necessarily imply that the Australian sector is unsustainable. The question of sustainability of the Australian sector of this fishery depends upon where recruitment occurs and the level of movement of fish between the two countries. If movement rates of red snapper between Indonesia and Australia are low, and there is good recruitment to the Australian fishery from nursery areas within Australia, then the effect of large scale Indonesian fishing may be small. However if recruitment was primarily from Indonesia and movement rates between sectors high, then the effect would be more significant.

In the past five years CPUE has remained relatively constant and harvest levels in the Australian sector of the Arafura Sea are below current reference points.

Future Assessment Needs

Identification of the future assessment needs for red snapper research is being addressed at a national level through the NAFM forum and the Northern Stock Assessment Group. There is consensus that the following areas are of high priority:

- Completion of an updated red snapper stock assessment
- Data warehousing for historical data

- Investigation of the degree of movement of red snappers
- Investigation of the effect of IUU fishing on red snapper stocks
- Identification of juvenile habitats, and
- Undertaking of fishery independent surveys.

Research

Summary to Date

A joint project between RDPIFR, CSIRO and Indonesia (funded by ACIAR) has investigated the biology, life history and sustainability of the target species for this fishery (*Lutjanus malabaricus*, *L. erythropterus*) which account for 78% of the Finfish Trawl Fishery catch. Findings from this project are outlined in the final report of ACIAR project FIS/1997/165 (available on the ACIAR website, <http://www.aciar.gov.au>).

Incorporation into Management

Stock assessment findings have been incorporated into management plans, ensuring trigger points are set within sustainable limits for the Australian sector of these stocks.

Current Research

Research is presently being undertaken to identify juvenile red snapper grounds.

Compliance

Compliance with the Northern Territory Finfish Trawl Fishery management arrangements are undertaken by the MFES of the Northern Territory Police, Fire and Emergency Services, under the NT *Fisheries Act 1988*.

The MFES effectively monitors and enforces the Finfish Trawl Fishery management arrangements through the inspection of vessel arrival and departures through the port of Darwin. This includes verification of catch returns against processor returns (i.e. requirement for all operators to specify where they are selling their product). The MFES has the power, if necessary, to investigate the records of wholesalers and licensees. In 2006 there were no recorded compliance issues with this fishery.

The compliance operations for the Finfish Trawl Fishery are appropriate to the size of the fishery (i.e. one operator). A compliance risk assessment has been undertaken for the fishery,

with no major domestic fishery issues identified.

Offshore Net and Line Fishery

Monitoring

The basic monitoring information from the Offshore Net and Line Fishery comes from compulsory catch and effort logbooks. Monthly summary returns for the commercial fishery form a time series from 1983 onwards. A transition from monthly summary returns to recording each gear set has been managed since the late 1990s, and from July 2005 the target species have additionally been recorded. This reflects a policy of improving the quality and utility of logbook information collected.

Observer trips add information on species composition and provide other biological and ecological data. Four observer trips on commercial shark boats were undertaken during 2006. These provided data on species composition for both harvest and bycatch (retained and non-retained catch); an increased program of such monitoring activities has been planned for the future.

Research has been initiated to develop a tagging protocol for monitoring the harvest rates for the principal target shark species, as well as indicator species. The project, funded under the Australian Research Council Linkage program, and the Northern Territory Fishing Industry Research and Development Fund, entitled *Estimating Fishing-related Mortality and Designing Sustainable Management Protocols for Shark Fisheries in Northern Australia* is led by the Charles Darwin University in collaboration with the fishing industry, RDPIFR and the Australian Institute of Marine Science. The project will evaluate various combinations of monitoring and management regimes through experimentation to present managers with an informed choice of management options. A total of 877 sharks of different species were tagged and released, with 7 recaptures reported during 2006.

Stock Assessment Methods and Reliability

The Offshore Net and Line Fishery has a history of continual assessment. In the 1980s, a joint assessment was conducted between the then Northern Territory Department of Primary Industries and Fisheries, CSIRO, and the

Australian Fisheries Service. The *Pelagic Fish Stock Assessment Program* estimated that, in waters adjacent to the Northern Territory, the maximum sustainable yield for the blacktip sharks, *C. tilstoni* and *C. sorrah*, was 3,400 tonnes annually. This consisted of 1,900 tonnes in the Arafura and GoC zones and 1,500 tonnes in the Northern Territory zone.

Although CSIRO studies indicated that blacktip sharks form a single large genetic stock throughout northern Australia, mark-recapture studies showed that movement rates both alongshore and offshore are relatively restricted between the northern Australia Arafura Sea, the GoC and the Bonaparte Gulf. Mixing is sufficient to ensure a genetically homogeneous population but, at the same time, interactions are sufficiently restricted that segments of the population could be fished down without impacting on production throughout the population as a whole (Stevens et al. 2000).

Assessment in the mid-1990s (Walters and Buckworth 1997) suggested a potential yield estimate for Western Australia, the Northern Territory and Queensland of at least 2,000 tonnes per year. The optimum annual harvest rate is 6-7% per year of the component of the stock vulnerable to gill net fishing. The age-structure modelling (Walters and Buckworth 1997) indicated that the overall stock should have been increasing, at a rate of between 5% and 10% per year since the mid 1980s, when Taiwanese catches were greatly reduced.

However, CPUE data from the Northern Territory gill net fishery to 1995, on which the assessment was based, suggested a decline in relative abundance since the mid 1980s, for which several potential, unquantified sources were identified. These sources included losses to other fisheries, across the northern border or undeclared within other Australian fisheries which, it was calculated, could account for up to 1500 tonnes of catches, as well as localised depletion effects. However, the unreliability of the assessment was emphasised. In particular, it was recognised that the CPUE statistics, on which the assessment relied, were a poor index of abundance. A 2005 update of the age structured model by the Northern Assessment Group (consisting of researchers and managers from the management agencies responsible for the northern shark fisheries) noted that the

declining trend shown to 1995 in the previous assessment was no longer a feature of the time series. Nevertheless, the assessment of the stock remained uncertain. The model incorporated the additional eight years of CPUE data available since Walters and Buckworth (1997). The dominant characteristic of the CPUE data is strong variation, particularly the large peaks of 1995 and 1996.

The basic problem with CPUE as an index of abundance is that it may reflect other factors, such as the ways in which fishers respond to markets and cost structures, much more than it does the abundance of the fish. This is illustrated by apparent targeted fishing within the fishery. The very strong and persistent increasing trend in the catch rate of grey mackerel suggests that this species has been increasingly targeted, rather than the abundance of stocks increasing steadily. The downturn of 2004 probably reflected general targeting of sharks during that year, in response to market pressures, while the resumption of the trend in 2005 and 2006 again probably reflected target fishing of grey mackerel. The catch rate variations among the total sharks, blacktip sharks and grey mackerel are substantially in counterpoint i.e. those years in which catch rates of grey mackerel peaked, shark catch rates declined, and vice versa. Existing logbook effort data could not be allocated among the target groups, but the inference from these observations is that catch rate trends presented for sharks and mackerel in this fishery are unlikely to capture all but the strongest trends in abundance. The slight variations evident for blacktip shark catch rates may simply reflect diversion of effort by operators to whichever fishing target they predicted would have the greatest net value at any time.

Current Harvest Status

Exploitation by the FTO and recreational sectors is considered to be quite low. The harvest by the commercial sector is below most estimates of sustainable yield, and is a small fraction of the catch taken by the Taiwanese-Australian joint venture fishery of the 1970s and 1980s, or current estimated landings for Indonesia (Blaber et al. 2006).

Logbooks did not indicate target species until July 2005. Given the very strong increasing trend in grey mackerel catches and catch rates,

variations and trends in CPUE could result from increased direction of fishing in response to contrasting market demands for mackerel or shark. However, given the high degree of uncertainty in stock estimates and declining CPUE trend in blacktip and total shark in the late 1990s, and uncertainties about the status of grey mackerel, conservative management currently precludes any significant increase in harvest rates. The Offshore Net and Line Fishery is thus considered to be fully-fished.

Future Assessment Needs

There is clearly a need for continued updated assessment of the Offshore Net and Line Fishery. It is planned that target species in the fishery will be re-assessed at least every three years. However the information on fishery status that can be provided by logbook catch and effort data alone is limited and new assessments are unlikely to be more informative without additional information.

A key recommendation from previous assessments has been to establish sources of information on harvest rates or abundance levels of the Northern Territory shark stocks, independent of logbook data. Consequently, research to develop mark-recapture (tagging) to provide an on-going index of harvest levels for the Offshore Net and Line Fishery has been instituted (as described above). Further, there should be a concerted effort to obtain blacktip catch statistics from the foreign fisheries currently operating in the Arafura Sea, north of the AFZ. Constraints on resources have meant that these recommendations are yet to be implemented.

As yet, there is little information available on the magnitude and impact on northern Australian shark and finfish stocks of IUU fishing by foreign vessels operating in northern Australian waters. The consequences of this fishing for the Australian fishery are difficult to predict. This is not only because we do not yet know the magnitude and composition of IUU fishing over time, but also because movement rates and life history linkages between inshore (where most Australian fishery effort is directed) and offshore (most IUU fishing) are poorly known for most species. Thirdly, we do not know the ecological effects that may arise by fishing down many of the top predatory fish from the offshore area. Thus broader ecosystem effects of fishing, and

the effect of high levels of IUU effort, need to be addressed in future assessments. The magnitude of IUU effort and catches, as well as ecosystem effects, are being examined in current CSIRO/AFMA projects.

An initial assessment for grey mackerel was undertaken during 2006. The main conclusion of this assessment was that the fishery is not currently over-fished. However, the assessments were limited by their reliance on catch and effort data, and the inability to determine whether sharks or grey mackerel were the principal target. Additionally, spatial dynamics of the species as described by the project *Determination of Management Units for Grey Mackerel Fisheries in Queensland and the Northern Territory*, (FRDC 2005/010) will need to be addressed in future assessment work.

Research

Summary to Date

In the mid 1980s, the Northern Territory Shark Fishery (now known as the Offshore Net and Line Fishery) was the subject of a major joint Commonwealth/NT/Qld/WA Pelagic Fish Stock Assessment Program, sampling extensively around the Northern Territory coastline, to establish species and size composition and provide basic biological information. Sharks were tagged to provide growth and movement information. The project provided substantial information, including extensive and long-term information on movements and growth from the mark-recapture work (Stevens et al. 2000). The most recent tag recovery from this program occurred in 2004. Outcomes from this research were discussed above. With the fishery being very small until the mid 1990s, research during the 1990s was mostly limited to monitoring of trends in the commercial fishery data and stock assessment using all available data (Walters and Buckworth 1997). However, the recognised need for more information on the broad suite of sharks species taken in northern Australia prompted a series of national projects on the sustainability of sharks and rays in northern Australia, conducted since the late 1990s (Stobutzki et al. 2003; Rose et al. 2003; Salini et al. 2007). These projects progressively characterised catches, species composition and gear types across all northern Australian fisheries that take sharks. The projects developed observer programs and

provided a substantial body of biological knowledge on sharks and rays in the northern Australian fisheries. The principal outputs of this project series included risk analyses that indicate knowledge gaps that should be addressed, and or the need for mitigative management.

Incorporation into Management

Results of research have allowed informed and conservative management regimes to be implemented for the Offshore Net and Line Fishery.

Current Research

An ongoing observer program has been developed to yield information on catch composition, an important basis for monitoring biodiversity, as well as size and reproductive status of the catch species. Although the blacktip species are well-known biologically, this has not been true of many of the species that are less frequent catch components. Thus the biological information accumulated and communicated (e.g. Beatty and Crofts 2004) from previous and ongoing projects is valuable for the future management of the fishery.

Development of a collaborative tagging program with commercial fishers is also under way, as described above, with the intention of delivering a protocol for monitoring harvest rates of the principal shark species. In addition, the participation of the Charles Darwin University and the Australian Institute of Marine Science has expanded the scope of projects undertaken on Northern Territory sharks. Projects for 2007 and 2008 include studies of the distribution and abundance of *Glyphis* spp., and the genetics and biology of bull and pig eye sharks (*Carcharhinus leucas* and *C. amboinensis*, respectively).

Given the value of the grey mackerel in the fishery, there is also a need for further information on this species. An initial FishNote was prepared to increase stakeholder information on grey mackerel (Crofts and de Lestang 2004). Information on stock structure, movements and age structure of the population will be provided by current research in FRDC project 2005/010, *Determination of Management Units for Grey Mackerel Fisheries in Queensland and the Northern Territory*, initiated during 2005.

Compliance

Compliance activities for the Offshore Net and Line Fishery management arrangements are undertaken by the MFES of the Northern Territory Police, Fire and Emergency Services, under the NT *Fisheries Act 1988*.

The MFES effectively monitors and enforces management arrangements for the Offshore Net and Line Fishery through the inspection of vessel arrivals and departures through the single port of Darwin. This includes verification of catch returns against processor returns (i.e. requirement for all operators to specify where they are selling their product). The MFES has the power, if necessary, to investigate the records of wholesalers and licensees.

In 2006, there were no significant domestic compliance issues recorded for this Fishery.

9. Financial Arrangements

The Northern Territory Government has previously determined to provide financial resources for the management of NTFJA fisheries.

This revenue was paid into the Northern Territory Fishing Industry Research and Development Fund. A summary of revenue and expenditure follows.

The Northern Territory received \$80 095 (preliminary figures) in licence fees for Joint Authority Fisheries (Offshore Net and Line \$14 960; Demersal \$52 800; Finfish \$1 775; Timor Reef \$10 560) in 2006-2007.

The revenue generated from licences partially offsets management and research costs. Research projects carried out to ensure ongoing sustainability of the NTFJA fisheries during 2006-2007 are listed below. Amounts shown depict direct NT cash committed to the projects during 2006-2007.

- Grey Mackerel Stock Structure Project – NT funds committed \$ 8 000
- NTFJA Fisheries DEW Accreditation Maintenance \$ 18 000
- Shark Monitoring Project, including contribution to ARC project to develop appropriate monitoring protocols for the Offshore Net and Line Fishery - \$ 32 000

- Contribution to NT Seafood Council consultation costs - \$32 500
- Pilot project to develop GIS spatial analysis techniques (Timor Reef, Demersal Fishery) - \$ 11 000
- Industry contribution to FRDC Research Fund - \$22 000

Table 1. Management Arrangements, Trigger Reference Points and Landings for NTFJA Fisheries

Fishery	No. of Restricted Licences	No. of Unrestricted Licences	Management Regime	Target Species Trigger Reference Points	Sustainable Yield Estimates	Landings (2006)
Offshore Net & Line	6	11	<p>Effort controls – 234 long line method days, 1599 pelagic net method days</p> <p>Restriction of the total number of licences issued</p> <p>2000 m of net mesh size 160 mm to 185 mm</p> <p>15 nautical miles of longline, 1000 snoods, no autobaiting devices</p> <p>3:1 licence reduction program</p>	<p>Blacktip sharks Catch levels increase to 2000 t over the next calendar year</p> <p>Catch levels decline by 30% over the previous two calendar years</p>	2000 tonnes for northern Australia	<p>Blacktip shark 457 t</p> <p>Other shark 323 t</p> <p>Grey mackerel 404 t</p> <p>Spanish mackerel 26 t</p> <p>Other 20 t</p>
Demersal	Not applicable	60	<p>Effort controls</p> <p>Limit on licences issued</p> <p>Vertical lines with a maximum of 5 hooks, droplines with 6-40 hooks</p> <p>Restrictions on the possession of sharks and mackerels</p>	<p>Goldband and Red Snappers Catch levels increase to 90% of estimated sustainable annual yield</p> <p>Red Emperor and Cod Annual catch increase in proportion of the total catch by greater than 10% above the 5 year average</p>	<p>Red Snapper –</p> <p>Arafura Sea 1500t (Ramm 1997b)</p> <p>Timor Sea 600-2500t (Ramm 1994)</p> <p>GoC 2880-9015t (Anon 1994)</p>	<p>Red snappers 105 t</p> <p>Goldband 109 t</p> <p>Red emperor 4.5 t</p> <p>Other species 4.5 t</p>

Timor Reef	2	10	<p>Effort Controls</p> <p>Limit on licences issues</p> <p>Vertical Lines with a maximum of 5 hooks</p> <p>Droplines with 6-40 hooks</p> <p>Maximum of 45 traps per licence</p> <p>Transferability on amalgamation of two restricted licences</p> <p>Must hold a Demersal Licence</p> <p>Restrictions on the possession of sharks and mackerels</p>	<p>Goldband and Red Snappers</p> <p>Catch levels for goldband and red snapper increase to lower sustainable yield estimates over the next calendar year</p> <p>Goldband snapper trigger = 900t</p> <p>Red snapper trigger = 1300t</p> <p>Catch levels decline by 30% over the next calendar year</p> <p>Red Emperor and Cod</p> <p>Catch rates of red emperors increase to 25% of the catch and cods increase to 10% of the catch over the calendar year</p> <p>Catch levels decline by 30 % over the next calendar year</p>	<p>Gold Band Snapper –</p> <p>Arafura Sea 100-400t (Ramm 1994)</p> <p>Timor Sea 900t (Ramm 1997)</p> <p>GoC: No estimate currently available</p>	<p>Goldband 416 t</p> <p>Red snappers 254 t</p> <p>Red emperor 22 t</p> <p>Other reef fish 36 t</p>
Fish Trawl	Not Applicable	1	<p>Effort Controls</p> <p>Restrictions on the use of fishing gear</p>	<p>Red Snappers</p> <p>Combined Finfish Trawl and Demersal fishery catch levels increase to 2500 t over the next calendar year</p> <p>Catch levels decline by 30% over the next calendar year (Finfish Trawl only)</p>	<p>Arafura Sea 1500 t (Ramm 1997b)</p> <p>GoC 2880-9015t (Anon 1994)</p>	<p>Red snappers 676 t</p>

Please note that the details outlined provide a general summary of the management arrangements only and should not be relied upon as a complete description of all legislative requirements. The Northern Territory Fisheries Act and Regulations provide precise information about legislative arrangements implemented for the fisheries nominated.

Annex A: Excerpt of the Northern Territory Government Gazette of February 1995

ARRANGEMENT BETWEEN THE COMMONWEALTH AND THE NORTHERN TERRITORY IN RELATION TO THE NORTHERN SHARK FISHERY

An ARRANGEMENT entered into between the Commonwealth of Australia (the Commonwealth) of the one part and the Northern Territory (the Territory) of the other part.

WHEREAS-

- (a) paragraph 4(i)(a) of the Acts Interpretation Act 1901 of the Commonwealth provides that where an Act is enacted on or after the date of commencement of this section that it is not to come into operation immediately upon its enactment, is expressed to confer power, inter alia, to make an instrument of a legislative or administrative character, then, unless the contrary intention applies, the power may be exercised, and anything may be done for the purpose of enabling the exercise of the power, before the Act concerned comes into operation as if it had come into operation;
- (b) subsection 2(2) of the Fisheries Management Act 1991 of the Commonwealth (the Management Act) provides that Part 5 of the Management Act, which provides for co-operation with the States and Northern Territory in the management of fisheries, commences upon the repeal or the ceasing to have effect (as the case may be) of Part IVA of the *Fisheries Act* 1952 of the Commonwealth;
- (c) by subsection 7(3) of the Fisheries Legislation (Consequential Provisions) Act 1991 of the Commonwealth (the Consequential Provisions Act) as amended by section 24 of the Primary Industries and Energy Legislation Amendment Act 1993 Part IVA of the *Fisheries Act* 1952, unless sooner repealed, ceases to have effect at the end of the period of 3 years beginning 3 February 1992, the day on which section 7 of the Consequential Provisions Act commenced;
- (d) paragraph 7(4)(a) of the Consequential Provisions Act provides that upon the commencement of Part 5 of the Act, the Northern Territory Fisheries Joint Authority, established by subsection i2D(i) of the *Fisheries Act* 1952, continues in existence as if it had been established under Part 5 of the Management Act;
- (e) arrangements were entered into under section 12H (4) of the *Fisheries Act* 1952 between the Commonwealth and the Territory in relation to the:
 - (i) Pelagic Fishery, published in the Commonwealth of Australia Gazette No 8109 on 14 April 1988;
 - (ii) Pelagic Fishery except with pelagic gillnets in waters within 12 nautical miles seaward of the baseline or by trolling, published in the Commonwealth of Australia Gazette No 8109 on 14 April 1988;
- (f) paragraph 7(4) (b) of the Consequential Provisions Act provides that upon the commencement of Part 5 of the Act, any arrangement made with a State or Territory under subsection i2H(i) or (4) of the *Fisheries Act* 1952 that was in force immediately before that commencement continues in force as if it had been made under Part 5 of the Management Act;

- (g) the Arrangements referred to in paragraph (e) of this Arrangement were made under Division 3 of Part FVA of the *Fisheries Act* 1952;
- (h) subsection 75(1) of the Management Act provides that an Arrangement under Division 3 of Part 5 of the Management Act may be terminated by instrument approved by the Governor-General and the Governor or Governors of the State or States concerned;
- (i) section 59 of the Management Act provides:
 - (i) that Part 5 of the Management Act Has effect as if the Northern Territory was a State
 - (ii) that a reference in that Part to the Governor of a State shall be read, in relation to the Northern Territory, as a reference to the Administrator of the Territory;
- (j) subsection 33 (3) of the Acts Interpretation Act 1901 provides inter alia that where an Act confers a power to make any instrument, the power shall, unless the contrary intention appears, be construed as including a power exercisable in the like manner and subject to the like conditions (if any) to repeal any such instrument;
- (k) subsection 8(1) of the Interpretation Act 1978 of the Territory provides that where a provision of an Act is expressed to confer power, or to amend a provision of another Act in such a manner that the other Act, as amended, will confer power, to take any action, including power to make an appointment or to make an instrument of a legislative or administrative character then, before the first-mentioned provision or the second-mentioned provision as amended, as the case may be, comes into operation, that power may be exercised and anything may be done for the purposes of enabling the exercise of the power or of bringing the appointment or instrument into effect;
- (l) subsection 64(2) of the *Fisheries Act* 1988 of the Territory (the Territory Act) empowers the Territory to terminate an arrangement under Part 5 of the Management Act;
- (m) subsection 71(1) of the Management Act provides that the Commonwealth may make an arrangement with a State or States represented on a Joint Authority that the Joint Authority is to have the management of a particular fishery in waters relevant to that State or any of those States;
- (n) subsection 74(1) of the Management Act provides that an arrangement under, inter alia, section 71 is to be made by an instrument approved by the Governor-General and the Governor or Governors of the State or States concerned;
- (o) subsection 64(1) of the Territory Act as amended by section 37 of the Fisheries Amendment Act 1994 of the Territory empowers the Territory to make an arrangement under Part 5 of the Management Act;
- (p) both the Commonwealth and the Territory are desirous of exercising their powers to make a further Arrangement in relation to the fishery referred to in clause 2 of this Arrangement.

NOW THEREFORE, in pursuance of the Management Act and the Territory Act and of all the powers so enabling, it is mutually arranged as follows:

1. The Arrangements entered into between the Commonwealth and the Northern Territory as referred to in paragraph (e) of the recitals to this Arrangement are, pursuant to subsection 75 (i) of the Management Act and subsection 64(2) of the Territory Act, terminated.
2. The Commonwealth and the Territory hereby arrange that the fishery, being for any purpose other than recreation, in waters relevant to Northern Territory, being coastal waters and waters of the Australian fishing zone that lie within the area described in Schedule 2 to the Petroleum (Submerged Lands) Act 1967 under the heading "Area that includes the Adjacent Area in respect of the Northern Territory", for:
 - (a) all fish of the Class Chondrichthyes (cartilaginous fishes) using any fishing method;

but excluding fish to which this paragraph otherwise would apply taken in the exercise of a right conferred in relation to another fishery by a fishing concession granted by the Australian Fisheries Management Authority under the Management Act;

- (b) all fish of the Class Osteichthyes (bony fish) taken in the exercise of a right conferred by a licence or other authority granted by the Territory on behalf of the Northern Territory Fisheries Joint Authority for the fish to which paragraph (a) applies;

is to be managed by the Northern Territory Fisheries Joint Authority in accordance with the law of the Territory.

3. The Minister responsible for administering the Management Act and the Minister responsible for administering the Territory Act may agree in writing to the maximum quantity of other fish the subject of paragraph 2(b) that may be taken from time to time under a licence or other authority referred to in that paragraph and on matters of mutual interest in relation to the fishery.
4. This Arrangement shall, upon being executed on behalf of the Commonwealth and of the Territory and upon being approved by the Governor-General of the Commonwealth and the Administrator of the Northern Territory, take effect on 3 February 1995.
5. Without affecting the construction which this Arrangement would have if no provision of this Arrangement or part thereof is invalid, it is the intention of this Arrangement that if any provision of this Arrangement or part thereof is invalid, the remainder of that provision or part thereof was not included in this Arrangement even if the result is to extend the fishery by this Arrangement.

Dated 19th December, 1994

Signed for and on behalf of the
Commonwealth of Australia by the
Honourable DAVID PETER BEDDALL,
Minister for Resources

Signed for and on behalf of the
Northern Territory by the
Honourable MICHAEL JAMES PALMER
Minister for Primary Industries and Fisheries

In the presence of
P. STEVEN

In the presence of
A.R.SPRIGG

Annex B: Record of Decisions

MEETING OF THE NORTHERN TERRITORY FISHERIES JOINT AUTHORITY

14 September 2006
Ambassador Room
Crown Plaza Hotel
32 Mitchell St, DARWIN, NT

RECORD OF DECISIONS

Attendance Members:

Delegate for the Australian
Government Minister for
Fisheries, Forestry and
Conservation
Russell James

Deputy for the Northern
Territory Minister for Primary
Industry, Fisheries and Mines
William Flaherty

Secretary
David McKey (NTDPIFM)

Observers
Richard McLoughlin (AFMA)
Wade Whitelaw (AFMA)
Steve Sly (NTDPIFM)
Giles Hartwell (DAFF)
Olivia Haine (AFMA)

Russell James (Chair) opened the meeting at 16.20.

PROCEDURAL MATTERS

Officials of the Commonwealth and NT Fisheries met on 14 September 2006 to discuss current issues relevant to the NTFJA. Details of the discussion and recommendations from this meeting are detailed below.

1.1 Identification of Deputies and Secretaries to the NTFJA

The identification of present delegates, deputies and appointment of a secretary and

the identification of observers to the meeting was noted.

Officials of the Commonwealth and NT Fisheries confirmed that their status as members' delegates and deputies was in order. David Mokey (NTDPIFM) was appointed as secretary to the NTFJA. Observers at the meeting were noted and are recorded as present in this record.

1.2 Confirmation of Agenda.

Members confirmed the agenda (attachment 1) as it stood.

1.3 The Record of Decisions from the NT Fisheries Joint Authority (NTFJA) meeting of 22 September 2005.

William Flaherty informed members that the recommendation in item 2.1 seeking the NT member to convey the NTFJA's decision to deny Mr Warford's application for a Shark Fishery licence has been carried out.

The Record of decisions arising from the NT Fisheries Joint Authority (NTFJA) meeting of 22 September 2005 were reviewed, it was noted all recommendations have been actioned and was deemed to be an accurate reflection of decisions taken.

Recommendation to the JA: that the record of decisions of the NTFJA meeting of 22 September 2005 be confirmed.

1. MATTERS FOR CONSIDERATION

2.1 Update on status of annual reports for 2005-2006.

The information paper included in the agenda was noted, and the issue discussed. Members noted the progress to date and the commitment of the NT to provide a draft NTFJA annual report for 2005/2006 to members by the end of December 2006. The NT confirmed their commitment to producing the NTFJA annual report within one year of the reporting period.

It was also noted that a budget summary inclusive of income and expenditure, and an appendix containing a record of decisions taken throughout the reporting period is included in the 2004-2005 annual report and that this practice will be continued in future reports.

Recommendations to the JA: -

1. That members note the completion of NTFJA annual reports for 2003/2004 and 2004-2005.

2. That members note the commitment of the NT to provide a draft NTFJA annual report for 2005/2006 to members by the end of December 2006 in line with previous agreements.

2.2 Update on the issue of an additional Finfish Trawl licence

William Flaherty provided an update on the NT's progress to issue an additional Finfish trawl Licence. It was noted that once some legal issues were resolved that the drafting of a document seeking submissions for a Finfish trawl licence application would be finalised. It is anticipated the documents will be ready for public release by December 2006.

It was noted that commitments made at the last NTFJA meeting relating to documenting reference points and decision rules for the Finfish Trawl Fishery, consistent with accreditation under the *EPBC Act*, have been completed and are included in the 2004-2005 annual report.

Recommendation to the JA: - That members note the information provided in the update.

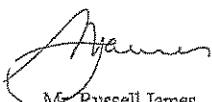
OTHER BUSINESS

Richard McLoughlin flagged to the meeting that AFMA would be looking to share their strategic directions in relation to harvest strategies and catch controls for shared stocks at the next JA meeting.

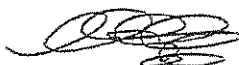
NEXT MEETING

Members agreed that the next meeting of the NTFJA would be held in conjunction with NAFM 2007.

With no further business, the meeting was closed at 16.35.



Mr. Russell James
Senior Manager
Delegate for the Australian Government
Minister for Agriculture, Fisheries and
Forestry
Northern Territory Fisheries Joint
Authority



Mr. William Flaherty
Acting Director of Fisheries
Deputy for the Northern Territory
Minister for Primary Industry, Fisheries
and Mines
Northern Territory Fisheries Joint
Authority

