NORTHERN TERRITORY FISHERIES

JOINT AUTHORITY

REPORT FOR THE PERIOD

1 JULY 2003

TO

30 JUNE 2004

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Commonwealth of Australia

ISSN 1033-9574

Published by:

Australian Fisheries Management Authority
CANBERRA

Compiled by

Department of Primary Industry, Fisheries and Mines (formerly the Department of Business, Industry and Resource Development)
GPO Box 3000
DARWIN NT 0801

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 2003 TO 30 JUNE 2004

Senator the Hon Ian Macdonald
Minister for Fisheries, Forestry and Conservation
Parliament House
CANBERRA

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

Contents

1. Introduction

This is the seventeenth annual report of the Northern Territory Fisheries Joint Authority (NTFJA). This report details the functions and activities undertaken during the period from 1 July 2003 to 30 June 2004. Catch and effort statistics are compiled annually.

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

- Timor Reef fishery;
- Demersal fishery;
- Finfish trawl fishery; and,
- Shark 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 NT pearl oyster fishery passed to the NTFJA.

On 3 February 1995, the NTFJA, subject to the provisions of the Commonwealth *Fisheries Management Act 1991* (FMA) and the Northern Territory *Fisheries Act 1988*, assumed responsibility, in waters adjacent to the Northern Territory, for the Demersal, Timor Reef, Shark and Finfish trawl fisheries. At that time, management of pearl oysters passed to the Northern Territory. Day to day administration of these fisheries is provided by the Fisheries Group of the Northern Territory Department of Business, Industry and Resource Development (DBIRD).

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 Ian Macdonald
Minister for Fisheries, Forestry and Conservation
(1 July 2003 to 30 June 2004) and,

The Hon Dr Chris Burns MLA
Minister for Primary Industry and Fisheries
(1 July 2003 to 14 Dec 2003)

The Hon Kon Vatskalis MLA
Minister for Primary Industry and Fisheries
(15 Dec 2003 to 30 June 2004)

Deputies for the NTFJA during the reporting period were:

For the Commonwealth Minister –

Mr Frank Meere
Managing Director
Australian Fisheries Management Authority (AFMA)
(1 July 2003 to 7 November 2003)

Mr Les Roberts
Acting Managing Director AFMA
(8 November 2003 to 9 May 2004)

Mr Peter Witheridge
Acting Managing Director AFMA
(19 December 2003 to 26 January 2004 - overlap while Mr Les Roberts on leave).

Mr Richard McLoughlin
Managing Director AFMA
(10 May 2004 to 30 June 2004)

Mr Glenn Hurry
General Manager
Department of Agriculture, Fisheries and Forestry (DAFF)
(1 July 2003 to 30 June 2004)

For the Northern Territory Minister -

Mr Richard Sellers
Director of Fisheries DBIRD
(1 July 2003 to 30 June 2004)

Secretariat services to the NTFJA are provided by DBIRD.

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; and,

(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; and,

(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 NT *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 the DBIRD.

4. Meetings of the Northern Territory Fisheries Joint Authority

Meetings of the NTFJA are convened on an "as needs" basis, with DBIRD coordinating the "day to day" management under the NT *Fisheries Act* 1988, on behalf of the NTFJA. A meeting of the NTFJA was convened on 19 August 2003.

DBIRD representatives participated in the annual Northern Australian Fisheries Management Workshop (NAFMW), which was convened in August 2003. The NAFMW 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 NAFMW is convened under formal Memorandum of Understandings for cooperative management of fish stocks. The issues considered at the NAFMW have been extended to incorporate collaborative and complementary management of fish species generally, with recent participation by adjacent international jurisdictions.

5. Advisory Committees

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

The NT *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 NTFJA fisheries, did not meet throughout the reporting period. Fisheries Management Advisory Committee meetings are convened on an "as needs" basis.

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.

6. Condition of the Fisheries

Offshore demersal fisheries

Separate management regimes have been implemented for the Timor Reef, Demersal, Finfish Trawl and Shark 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, DBIRD 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 now all been assessed against the Commonwealth guidelines for sustainable fisheries as required under the *Environment Protection and Biodiversity Conservation (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 Shark Fishery is currently being assessed by the Department of the Environment and Heritage.

Timor Reef Fishery

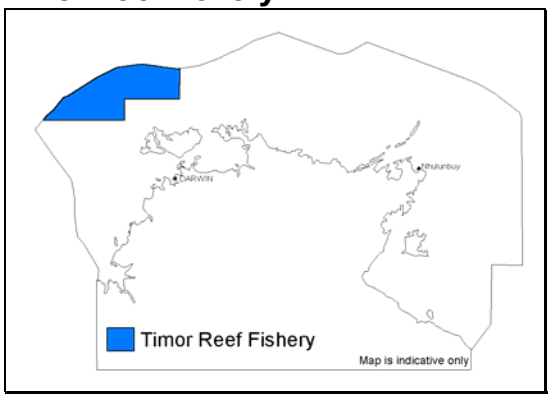


Figure 1. Area of the Timor Reef fishery

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 licensees 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 handlines and droplines. Although some operators used traps during the early development phase of the Timor Reef fishery, most chose to use vertical lines as the fishery developed.

However, during 1999 and 2000 there was an industry wide change to trap fishing, and during 2002 only one operator was using droplines, with the remainder having changed to traps. There was a reversal of this trend back to droplines by many operators during 2003, as dropline caught fish generally generally received a price premium.

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*.

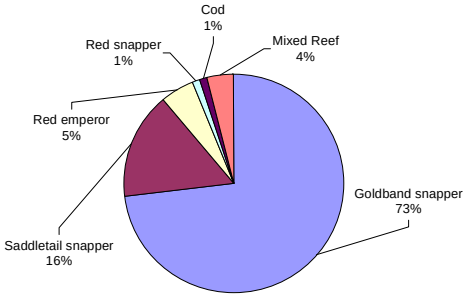


Figure 2. Composition of the catch from the commercial Timor Reef fishery, 2003

Together these species comprise 73% 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).

Total catch from the Timor Reef fishery during 2003 was 450 tonnes, while the goldband snapper catch component was 308 tonnes.

Byproduct Species

The byproduct predominantly comprises small snappers from the Family Lethrindae. The 2003 byproduct level of less than 5% of overall catch is well below the 10% trigger value required for a review of management arrangements for the protection of byproduct species.

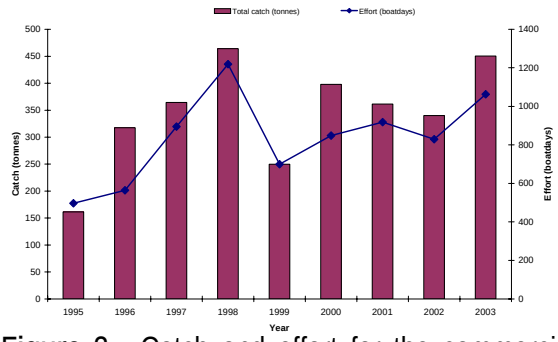


Figure 3. Catch and effort for the commercial Timor Reef fishery, 1995 to 2003

Effort

Over the past three years fishing effort (boat days) has been relatively constant (Figure 3). During 2003, eight operators fished for 1063 boat days (Figure 3).

There are currently 12 licences in this fishery. The number of licences was reduced from 22, by a two for one licence reduction program.

Catch rates

Catch per boat day increased in 2000 with the introduction of traps. There was a decline in catch per unit effort (CPUE) in 2001, followed by a steady increase since then (Figure 4).

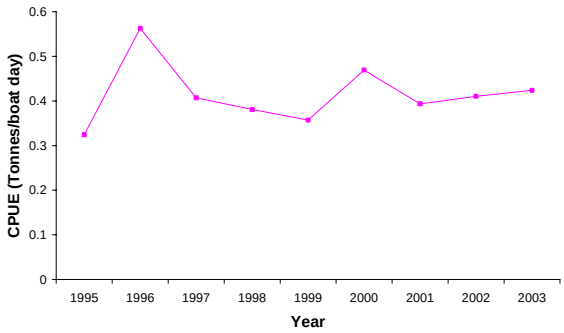


Figure 4. CPUE for the commercial Timor Reef fishery, 1995 to 2003

Marketing

Due to the lack of consumer familiarity with tropical snapper 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, most 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 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 the catch from his two vessels.

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

For the Timor Reef fishery, the reported and observed level of Bycatch is very low, being less than 1% of total catch. The demersal tropical species landed in the fishery are well received throughout existing marketing channels, with operators reporting that most species can be sold. Bycatch in this fishery is well below the 10% trigger value.

Threatened species interaction
There was no recorded interaction with threatened species in the Timor Reef fishery for 2003. The method of fishing and the location of the fishery generally prevent interactions with these species.

Eco-system Impact
The management arrangements for the fishery allow operators to use passive 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. 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 and line fishery.

The impact of "ghost fishing", ie. 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 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 impacts of demersal fish trawling. The Commonwealth Government managed Northern Prawn Fishery allows prawn trawlers to operate year round in offshore waters throughout northern Australia. Prawn and scampi (deep-water shellfish) trawling activity is generally limited to water greater than 200 m deep in areas immediately north of current demersal fishing grounds.

Social Impact
This fishery directly employs over 20 people as crew on boats and numerous people in other support industries, eg. transport, boat repairs etc.

Economic Impact
At the point of first sale in 2003, the commercial Timor Reef fishery was valued at $2.75 million. The goldband snapper component was $1.97 million (2002 - $1.6 million) and $0.39 million for saddletail snapper (2002 - $0.32 million).

Demersal Fishery

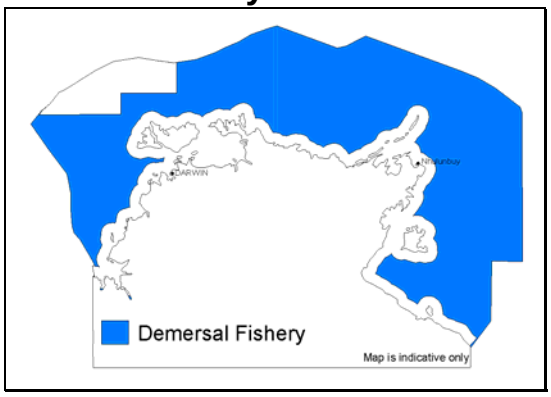


Figure 5. Area of the demersal fishery

The demersal fishery is a multi-species dropline and trap fishery operating in waters 15 nautical miles from shore (Figure 5) to the outer limit of the Australian Fishing Zone (AFZ). It is managed under the NT *Fisheries Act 1988*.

The demersal fishery targets goldband snapper (*Pristipomoides multidens)*, but also catches significant quantities of red snappers (*Lutjanus malabaricus, L. erythropterus)*, red emperor (*Lutjanus sebae*) and cods (Family *Serranidae).* The catch is kept on ice and the majority transported as whole fish to Sydney and Brisbane markets.

Red snappers and red emperors are also taken by the recreational sector, however these are from inshore areas.

Initially, operators in this fishery targeted red snappers, however market prices for these species were not high enough to make them economically attractive. In recent years many Timor Reef fishers (who also hold demersal licences) have begun exploring grounds immediately adjacent to the Timor Reef fishery for goldband snapper. This has led to an expansion of fishing effort in the demersal fishery from 2001 onwards, and the focus on goldband snapper as the target species.

The demersal fishery has recently been assessed against the Australian Government *Guidelines for the Sustainable Management of Fisheries* under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). and received the highest level of accreditation being exempt from export regulations for 5 years.

Profile of the fishery - Commercial Sector

Area

The demersal fishery operates in waters from 15 nautical miles from the shore to the outer limit of AFZ, excluding the area of the Timor Reef fishery (Figure 1).

Within the demersal fishery, 95% of fishing effort occurs in the area adjacent to the Timor Reef fishery to Longitude 1310E.

Fishing method

Methods in this fishery are identical to the Timor Reef fishery where operators use either traps or droplines to target goldband snapper.

A drop line or vertical long line consists of a weighted main line, the lower section of which has a number of branch lines, each with 30-40 hooks. Hooks, generally baited with squid, are set within 25 m of the seabed for three to 15 minutes. The fishery developed using lines buoyed and set free of the vessel and later retrieved and hauled aboard by a mechanised winch. Most drop line vessels now use hydraulic or electric reels.

Most operators now use traps in preference to baited lines. They are constructed of steel mesh. Fish enter the trap through a single funnel.

A clip door, situated opposite the funnel entrance allows the easy removal of captured fish and provides access to the bait box.

Catch

The main Target species for the majority of fishers are goldband snappers, which makes up 52% of the total annual catch. Other major target groups are saddletail snapper (*Lutjanus malabaricus*, 26%), red snapper (*L.erythropterus*, 6%), red emperor (*Lutjanus sebae*, 6%) and cod (Family Serranidae, 4%).

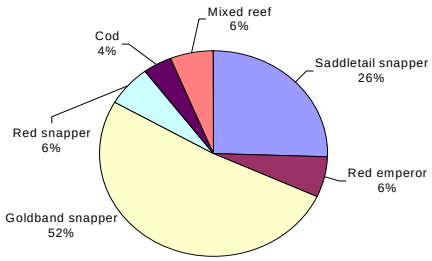


Figure 6. Catch composition of the commercial demersal fishery, 2003

The total catch from the demersal fishery during 2003 was 144 tonnes. Whilst catches in the fishery have increased during the past four years (Figure 7), prior to 2001 the majority of operators fished less than 10 days per year. From 2000 onwards traps have predominantly taken the catch.

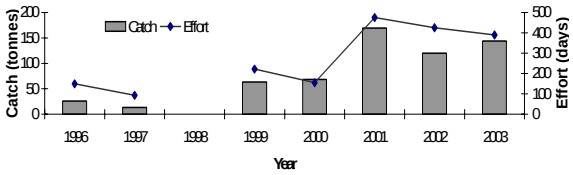


Figure 7. Catch and effort for the commercial demersal fishery, 1996 to 2003 (Due to confidentiality constraints 1998 data cannot be published)

Byproduct Species

Byproduct species predominantly comprise small snappers from the Family Lethrinidae. The 2003 byproduct level was less than 6% of overall catch and is below the 10% trigger value required for a review of management arrangements for the protection of byproduct species.

Effort
The effort in the demersal fishery doubled from 2000 to 2001 as operators in the Timor Reef fishery began utilising their demersal licences and exploring areas adjacent to the Timor Reef fishery (Figure 7). Only 13 of the 60 licences were active during 2003. Effort has declined slightly from 417 boat days in 2002 to 390 boat days in 2003.

Catch rates
Catch per boat day increased significantly in the demersal fishery with the introduction of traps in 1999 (Figure 8). The increase in catch rate is due to the greater efficiency of traps over drop lines in catching fish that are dispersed on the grounds. In 2003 the catch rate was 0.37 t/boat day.

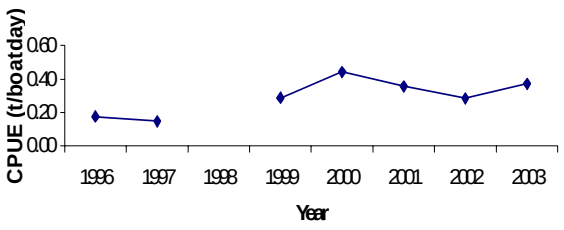


Figure 8. CPUE for the commercial demersal fishery, 1996 to 2003
(Due to confidentiality constraints, 1998 data cannot be published)

Prior to 2001, the majority of the catch was taken by a couple of operators only. Therefore care should be taken in interpreting small shifts in CPUE trends as this may reflect operator efficiency rather than a change in fish abundance.

Marketing
Currently most tropical snappers landed in the line and trap fisheries are sold "fresh on ice" as whole fish, with only a small amount sold as fillets.

The small size of the local Darwin market means that 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, 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 and as with recreational fishers, catch of the same species is taken in inshore waters and therefore is not considered to impact on the commercial fishery.

The following 5 sections apply to all sectors

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

The reported and observed level of Bycatch in the demersal fishery is very low, being less than 1% of the total catch. The demersal species caught in the fishery are well received through existing marketing channels and operators report that most species landed can be sold.

The 2003 Bycatch level of less than 1% is well below the 10% trigger value required for a review of the management arrangements for the protection of Bycatch species.

Threatened species interaction
There was no recorded interaction with threatened species in the demersal fishery for 2003. The method of fishing and the location of the fishery generally prevent interactions with these species.

Eco-system Impact
The management arrangements for the 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 its either 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 fishery.

Social Impact

The commercial fishery directly employs less than 20 people however there are benefits for other industries, eg. transport, boat repairs etc. 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

At the point of first sale in 2003, the commercial demersal fishery was valued at $0.86 million. The goldband snapper component was $0.47 million and $0.18 million for saddletail snapper.

Finfish Trawl Fishery

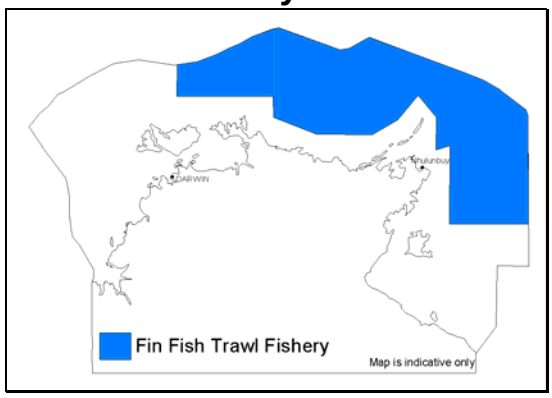


Figure 9. Area of the finfish trawl fishery

The trawl fishery was intensively fished by Thai and Taiwanese pair trawlers during the 1970s. Foreign fleets continued fishing, under licence agreements, following the ratification of the AFZ in November 1979. Taiwanese pair trawlers (1979-1990), Thai-Australian stern trawlers (1985-90) and Chinese pair trawlers (1989) operated in the AFZ waters adjacent to the NT. Overall catches peaked at approximately 10,000 tonnes from the Arafura Sea in 1983.

Currently the finfish trawl fishery comprises of a single finfish trawl operator fishing in offshore waters east of Darwin and includes the northern region of the GoC. Fishing operations are conducted using a semi pelagic demersal trawl thereby limiting any damage to the seabed. The fishery is co-managed under the *Northern Territory Fisheries Act 1988*.

The principal species landed are the red *snappers (Lutjanus malabaricus* and *L.erythropterus*). Around 70% of the landed catch is exported, mainly to Asia.

The finfish trawl fishery has recently been assessed against the Australian Government *Guidelines for the Sustainable Management of Fisheries* under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and received the highest level of accreditation being exempt from export regulations for 5 years.

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 1).

Within this overall area, only a relatively small proportion is currently fished due to the single operator targeting the higher yield red snapper fishing grounds. The finfish trawl fishery area partially overlaps with the demersal fishery.

Fishing method

To date 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 the Fisheries Group 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.

Catch

Saddletail snapper (*Lutjanus malabaricus*) and red snapper (*L.erythropterus*) are the target species of the finfish trawl fishery, comprising 77% of the total catch (Figure 10).

Other significant species are sweet lip, red spot emperor, and goldband snapper.

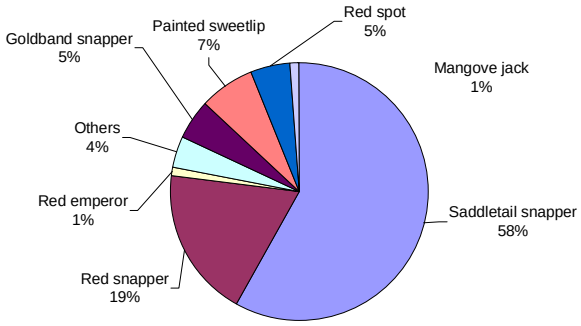


Figure 10. Catch composition for the commercial finfish trawl fishery, 2003

Since 1995, catches have increased steadily, peaking in 2001 (Figure 11). The catch for 2003 was 968 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.

Byproduct Species

Byproduct species for the fishery include goldband snappers (*Pristipomoides multidens* and *P. typus*) 5%, red spot (*L. lentjan*) 5%, and painted sweetlip (*Diagramma pictum*) 7%. The remainder of the mixed byproduct catch species comprise less than 2% of the annual catch.

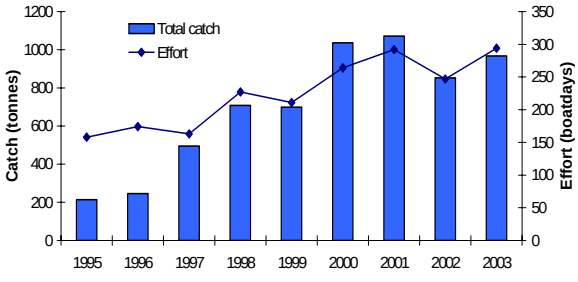


Figure 11. Catch and effort for the finfish trawl fishery, 1995 to 2003

Effort

Effort has increased from 158 boat days in 1995 to 292 boat days in 2001, falling slightly to 247 in 2002. During 2003 effort was 294 boat days (Figure 11). 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 potential reasons for observed changes in fishing effort.

Catch rates

Since 1997 the CPUE has shown little change, ranging from 3.0 to 3.9 t/boat day (Figure 12).

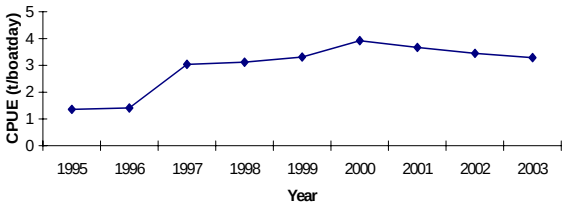


Figure 12. CPUE for the finfish trawl fishery, 1995 to 2003

Marketing

Around 90% of trawl caught snappers are sold frozen to export markets, mainly in Asia. Fish are unloaded into refrigerated shipping containers at Gove and shipped to Darwin by barge for export. The product is then transported to Perth by road. A small amount of the product is retained for the local market.

Recreational Sector

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

Fishing Tour Operator Sector

The majority of FTO 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)

A high proportion of the discarded species (by weight) are sharks and rays, which are returned to the water alive. 17% of the total catch of the commercial finfish trawl fishery is discarded.

Threatened species interaction

There was no recorded interaction with threatened species in the finfish trawl fishery in 2003. The method of fishing and the location of the fishery generally prevent interaction with these species.

Eco-system Impact

The Fisheries Group has encouraged fishing practices that cause minimal eco-system impact. The development, in conjunction with industry, of

a semi-pelagic demersal trawl net that minimises seabed 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 benefits for other industries, eg. transport, boat repairs etc. 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 the fishery is confidential (information for less than five active operators cannot be released without consent).

Shark Fishery

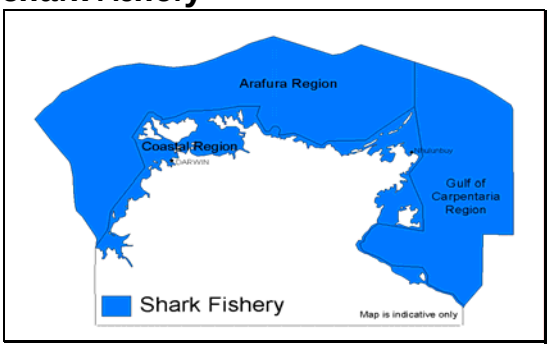


Figure 13. Area of the shark fishery

Target species for the commercial shark fishery are the blacktip sharks (*Carcharinus tilstoni* and *C. sorrah*) and grey mackerel (*Scomberomorus semifasciatus*) with a variety of other sharks and pelagic finfish landed. A conservative approach has been adopted in managing the northern shark fishery given the well documented biological characteristics of sharks, particularly, slow growth rates, late age of sexual maturity, low level of natural mortality and low fecundity (few offspring).

Management arrangements established under the OCS provide for the day to day operations of the shark fishery. Current arrangements recognise the historical management zones however the number of commercial participants has been reduced considerably.

Considerable cooperative research efforts are under way with adjacent jurisdictions, with the Northern Territory actively contributing to the formulation and implementation of a National Plan of Action for Sharks (NPOA) and a Northern Operational Plan.

Sharks are also taken as by-product in a range of fisheries targeting other species.

Profile of the fishery - Commercial Sector

Area

Operators are generally authorised to fish in a number of managed zones, with spatial restrictions placed on the use of certain gear. The three management zones are the coastal, Arafura and GoC zones.

The majority of the fishing is undertaken within the coastal zone (within 12 nm of coast or baseline) and immediately offshore in the GoC. Little fishing was undertaken in the offshore component of the fishery during 2003.

Fishing method

Operators may use either longlines or pelagic nets, however bottom set gillnets are prohibited. Most shark fishing is undertaken by pelagic gill net. Nets are generally 1000 to 2500 m in length with a mesh size of 150 mm to 250 mm. Most nets are constructed of monofilament nylon with a drop of 50 to 100 meshes, are weighted and have a buoyed headline.

In 2003, three operators fished for sharks using longlines.

Catch

The total catch of all species for the fishery in 2003 was 1700 tonnes, a substantial increase on the 2002 total (1162 tonnes). The total shark catch was 898 tonnes, increasing from 670 tonnes in 2002 (Figure 14).

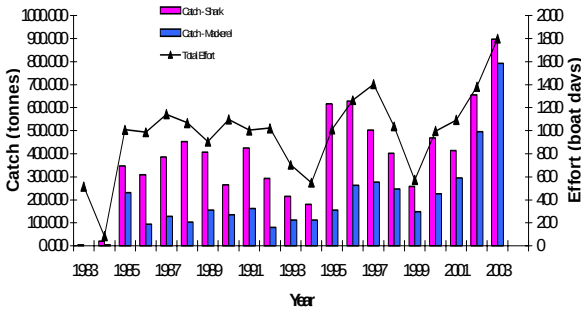


Figure 14. Catch and effort for the commercial shark fishery, 1983 to 2003

The major contribution to the elevated catches in the shark fishery in 2003 was from grey mackerel. The grey mackerel component reached 766 tonnes in 2003, up from 479 tonnes in 2002 (Figure 14). This increase in the grey mackerel catch for 2003 also resulted in an increase in the relative proportion of grey mackerel catch over blacktip shark. In 2003 grey mackerel comprised 46% of the shark fishery catch, up from 40% in 2002, resulting in a decrease in the blacktip sharks as a proportion of the catch, down to 29% from 40% (Figure 15).

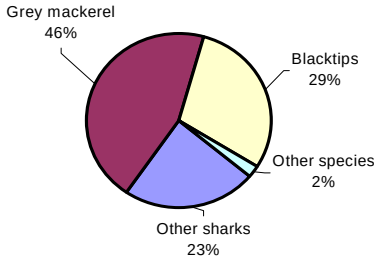


Figure 15. Compositions of the commercial shark fishery catch,2003

Since 1998 there has been a large increase in the catch of sharks other than black tips from 49 tonnes to 205 tonnes in 2002. Of significance is the increasing catch of mackerels (primarily grey mackerel) to the point where that catch exceeds the shark catch observed in most previous years.

Grey mackerel are now the principal target in the fishery. The catches of sharks and mackerel in this fishery have been highly variable, largely in response to effort trends. There has been a strong increasing trend in catches of both shark and mackerels in this fishery since 1999.

Sharks are also landed as an incidental catch in a range of commercial fisheries targeting other species. Landings from these fisheries have fluctuated between 32 and 79 tonnes since 1994.

Generally, shark fins have been sourced from the dedicated shark fishery, both from sharks processed for their flesh and from incidental landings of larger sharks. Fins are also taken as a by-product for commercial fishers targeting other species. Most non-target commercial fisheries have shark byproduct or Bycatch limits imposed.

Byproduct Species

Byproduct comprises principally of other whalers (several species of Family Carcharhinidae, mostly *Carcharinus* spp. and *Rhizoprionodon* spp.) and hammerhead sharks (*Eusphyra blocchii* and *Sphyrna* spp.) The catches of sharks other than blacktips increased from 205 tonnes (18%) of the fishery's catch) in 2002 to 398 tonnes (23%) in 2003 (Figure 15).

There were 13 tonnes of mackerels other than grey mackerel landed (about 1% of the total catch). These landings were principally narrow-barred Spanish mackerel, *Scomberomorus commerson*. Other fish species landed are mostly tunas (6.4 tonnes), with longtail tuna (*Thunnus tonggol)* being the main species caught from this group.

Sharks are also landed as an incidental catch in a range of commercial fisheries targeting other species. Catches with the Restricted Bait Net entitlement held by these fisheries were 27 tonnes. The Coastal Line fishery additionally yielded 9 tonnes, while the Coastal Net and Barramundi fisheries each landed around 5 tonnes of shark. Shark landings from fisheries other than the shark fishery have fluctuated between 32 and 79 tonnes since 1994, with 46 tonnes landed in 2003.

Effort

Effort in the shark fishery has shown substantial variability, ranging from 275 boat days in 1983 to a high of 1801 boat days in 2003 (Figure 14). There has been a strong increasing trend from 1999 to 2003. Much of the long-term variability in effort can be attributed to the number of operators active in the fishery.

Catch rates

Catch rates for shark (Figure 16) have also shown substantial variability over the last two decades. Catch rates for total shark in the shark fishery, for most years between 1983 and 2003, have been between 300 and 500 kg/day fished. There was a strong peak in catch rate of 609 kg/day in 1995, followed by a catch rate of 496 kg/day in 1996.

This peak was a departure from the relatively flat trend of the last two decades.

Catch rates since then have been in the range 379-499 kg/day. Catch rates for blacktip sharks have shown a very similar pattern, since 1997-2003 ranging between 244-342 kg/day. Grey mackerel catch rates in contrast, have shown a steady and marked increase since the early 1990s. Catch rates have grown from 62 kg/day in 1990, to 426 kg/day in 2003.

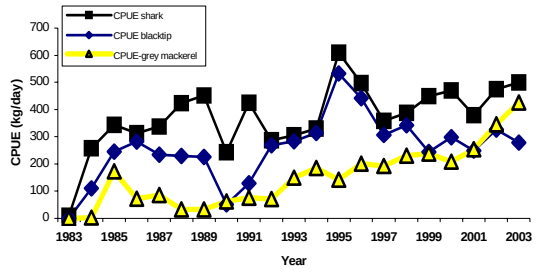


Figure 16. CPUE for the commercial shark fishery, 1983 to 2003.

Marketing

Grey mackerel is marketed as fillet, trunks and whole fish on domestic markets. Shark is marketed in trunk, fillet and whole forms, both as fresh and frozen product. Fin is also sold but must be landed with a prescribed proportion of shark trunks. While some shark product is retained for local processing and consumption, most is sent interstate, and some for direct export.

Recreational Sector

Area

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

Fishing method

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

Catch

Sharks are not specifically targeted by recreational fishers, but are caught when fishing for other species. In 1995, over 80,000 individuals were caught, with 18% retained, giving a harvest of 15,000. 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. During non-target fishing 34% of sharks caught are harvested, whilst reef fishers only harvest 12%.

In 2000, 76,000 individuals were caught, with 8000 harvested and the remainder released. This indicates a 47% reduction in harvest rate since 1995. The fishing mortality of released sharks is not known.

Fishing Tour Operator Sector

Area

Sharks are not specifically targeted by FTOs, but are landed when fishing for other species.

Catch

In 2003, 5096 sharks were caught of which an estimated 4596, or 90%, were released. The mortality rate of released sharks is not known. The species of sharks caught and harvested was not recorded.

The number of sharks caught by FTO clients has approximately doubled since 1995 when just under 3,000 sharks were caught, however the proportion of sharks harvested has declined. In 1995, 60% of sharks captured were harvested, this figure decreased rapidly to only 10% in 1997 and has remained relatively consistent around 20% since 2000.

Indigenous Sector

Area

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

Catch
Sharks and rays were one of the more important groups of fish caught by indigenous people in northern NT. In 2000, 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. A low proportion of the sharks caught are harvested, 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 are trevally and queenfish. 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 target catch. Nevertheless the amount of Bycatch depends strongly on location and season. Most shark species are now retained apart from the Tawny Shark, *Nebrius ferrigineus*. Rays are an uncommon Bycatch and are not retained, and usually released alive. Some finfish with poor market acceptability (for example, some trevally and queenfish) are not retained.

Threatened species interaction
There were two reports of catches of the spear tooth shark *Glyphis* sp., in the shark fishery during 2003. Although this species is regarded as threatened in Commonwealth waters, the status of the species in NT waters is not known. Currently there are 2 research proposals seeking funds to examine the distribution and status of this species in NT waters.

Eco-system Impact
The ecosystem impact of harvesting sharks and grey mackerel has not been determined.

Little is known about the stock structure of the principal species harvested, particularly the extent to which Indonesia, Western Australia, Queensland and the Northern Territory share their fishery resources. Australian States and the Northern Territory are cooperatively managing shark stocks, with the NT and Qld agreeing to link shark fishing concessions for the GoC to limit any increase in fishing capacity.

The Fisheries Research and Development Corporation (FRDC) Project, *Northern Australian Sharks and Rays: the Sustainability of Target and Bycatch Species (Phase 2,)* seeks to obtain comprehensive data on the species composition (target and Bycatch) in those fisheries in northern Australia which take sharks, including fisheries for which sharks are Bycatch. In 2003, staff on this project undertook two observer cruises on shark fishery vessels, and examined shark Bycatch of one barramundi fishing operation.

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 in 1992 following interactions with turtles.

Social Impact
In 2003, there were a total of 19 licences operating in the shark fishery. Most vessels employ a skipper and two or three crew members.

Economic Impact
At the point of first sale in 2003, the commercial shark fishery was valued at $10.3 million. The black tip shark component was valued at $2.8 million (2002 - $1.6 million), $4 million for other sharks (2002 - $2.7 million) and $3.4 million for grey mackerel (2002 - $2.5 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.

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 is achieved through analysis of commercial logbook reports.

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 1998, at which time management responsibility for line fishing and trapping in waters adjacent to the NT 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. The Fisheries Group undertakes 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

Reported catch levels for target species, incidental (byproduct) and non-retained (Bycatch) catch throughout 2003 were within acceptable levels.

The Timor Reef fishery has recently been assessed against the Australian Government *Guidelines for the Sustainable Management of Fisheries* under the *EPBC Act* and received the highest level of accreditation being exempt from export regulations for 5 years.

Future plans

A review of the levels of permitted gear (traps and droplines) will be undertaken in consultation with industry.

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 the Fisheries Division, the NT Timor Reef Fishermen's Association and the Northern Territory Seafood Council (NTSC). In addition to this, Fisheries staff make regular visits to the wharf to speak informally with fishers.

The low levels of participation in the Timor Reef fishery allows all stakeholders to be directly involved in discussions on any proposed management arrangements. A framework for a Timor Reef FMAC 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 Timor Reef fishery, through regular advisory meetings with senior fisheries officers and the Executive Director of Fisheries. Members of the public, including community and environmental/ conservation groups are also invited to provide their views to the Fisheries Group through the release of public discussion papers and other consultative processes.

The Fisheries Group also distributes publications in the form of Fishery reports, newsletters and fish notes to inform and educate stakeholders.

Demersal Fishery

Management

Management arrangements for the demersal fishery seek 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.

History

With the passage of the revised jurisdictional arrangements contained in the OCS of 1988, provisions were made for the Commonwealth and the Northern Territory to jointly manage the fishery given the likelihood of shared resources with adjacent national and international jurisdictions.

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.

In 1995 management responsibility for the Timor Reef fishery was passed to the NTFJA. The Fisheries Group now undertakes day to day management of the Timor Reef, on behalf of the NTFJA.

Agreement was reached on placing a ceiling of 45 fish traps per entitlement for the Timor Reef fishery in 2002. A similar limit has been agreed for the demersal fishery as a precautionary measure and to provide clarity on the amount of fishing gear used under each licence

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 demersal 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 5 years.

Future plans

A review of the levels of permitted gear (traps and drop lines) in consultation with industry is planned. While a limit on trap numbers has been agreed, the need for similar controls for vertical lines will be canvassed.

Consultation, Communication and Education

Regular consultation occurs between the Fisheries Division, the NT Demersal Fishermen's Association and the NTSC. In addition to this, Fisheries staff 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 (DFMAC) 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, through regular advisory meetings with senior fisheries officers and the Executive Director of Fisheries. Members of the public, including community and environmental/ conservation groups are also invited to provide their views to the Fisheries Group through the release of public discussion papers and other consultative processes.

The Fisheries Group also distributes publications in the form of Fisheries reports, newsletters and fish notes to inform and educate stakeholders.

Finfish Trawl Fishery

Management

Management of the finfish trawl fishery seeks to ensure the ecological sustainability of target and by-product species. The objectives aim to ensure that overall landings of target species are maintained within agreed levels.

An appropriate management response would be made in consultation with stakeholder groups if performance triggers are reached.

Incidental (by-product) and non-retained (Bycatch) catch are monitored during on board observer trips conducted by fisheries officers. Any significant increase in by-product will prompt a review of the fishery.

History

With the passage of the revised jurisdictional arrangements contained in the OCS of 1995, management of the trawl, shark and line fishing and trapping in waters adjacent to the NT 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. The Fisheries Group 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 5 years.

Future plans

The Fisheries Group 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 trawler. The Fisheries Group also distributes publications such as Fisheries reports and newsletters to inform and educate stakeholders.

Shark Fishery

Management

Management of the NT's shark fisheries was simplified with the passage of an OCS between the Northern Territory, Queensland, Western Australia and the Commonwealth. At that time, management of the State/Northern Territory and Commonwealth components of the fishery passed to three separate Joint Authorities. Complementary management is achieved under State/Territory law. This means that a single body manages the Northern Territory shark fisheries.

Management of the shark fishery seeks to maintain shark catches within appropriate ranges. This is achieved by reducing fishing capacity through a "three for one" licence reduction program. This licence reduction program requires new entrants to acquire and transfer three restricted shark fishery licences to the Territory for the issuance of an unrestricted shark fishery licence. Licence conditions in the form of finning ratios were imposed on shark licensees in late 2003 and seek to prevent the targeting of large shark for their fins alone.

Licensees must now retain an appropriate amount of meat for every fin in their possession. Overall capacity has been reduced from 38 licences to 19 licences in 2003.

Catch restrictions apply to Spanish mackerel. This by-product limit seeks to link landings of Spanish mackerel to grey mackerel catches. Such a measure was agreed to address concerns by other sectors about pelagic net fishers targeting Spanish mackerel.

A review of the incidental capture of sharks, including finning, in other fisheries targeting non-shark species concluded in 2002. A limit on the incidental catch of shark was agreed for the barramundi, coastal net and coastal line fisheries in 2003. A ban on the possession of sharks and shark product was also agreed for the Timor Reef, demersal, finfish trawl and Spanish mackerel fishery.

Agreement has also been reached with Queensland about the complementary management of what is likely to be shared fishery resources in the GoC. The former Commonwealth entitlement issues prior to 1995 permitted a single vessel in the fishery under fishery licence. With jurisdiction passing to two separate Joint Management Agencies, Queensland and the Northern Territory agreed to "link" shark fishery licences to ensure that the overall number of vessels in the fishery did not increase.

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 within 12 nautical miles (approximately 22 km) of 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 7,000 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 domestic fishers in coastal waters occurred 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 fillets sold on established food markets throughout southern Australia.

Current issues

The Northern Territory supports the finalisation and implementation of a NPOA (NPOA) and the development of a regional agreement on the management of shared shark resources with Indonesia and East Timor. The Northern Territory is promoting the concept of an "operational plan" for northern Australian shark fisheries to achieve the outcomes of the NPOA.

The Northern Australian shark research project will assist in improving our understanding of the sustainability of tropical sharks. This research seeks to provide the necessary information for the rapid assessment of the vulnerability of sharks.

The need for a desktop assessment of grey mackerel was agreed at a joint industry/government workshop. The first scoping study for grey mackerel commenced in early 2004.

Future plans

The incidental landings of sharks in fisheries targeting other species are subject to annual review. The finning ratios are to be reviewed by December 2004 to ensure they meet sustainability criterion. Due to changing fishing methods within the fishery, the fishery will be reviewed at the annual shark workshop in 2004.

The shark fishery is to undergo an ecological assessment under the Commonwealth Government's EPBC Act for export certification.

Consultation, Communication and Education
Regular communications and consultation occurs between the Northern Territory Shark Fisherman's Association, the NTSC, neighbouring states, other extractive stakeholders and wider interest groups to discuss matters of concern within the fishery. Workshops are convened annually to provide a forum for industry, management and researchers to canvass all issues of interest to the shark fishery.

The Fisheries Group also distributes publications such as Fisheries reports and newsletters to inform and educate stakeholders.

8. Fisheries Monitoring, Research, Surveillance and Enforcement

Timor Reef Fishery

Monitoring
This fishery is monitored primarily through daily logbooks, in which operators provide detailed catch and effort information, as well as data on spatial distribution of the fishery. This logbook data must be returned together with monthly summary sheets by the 28th day of the following month.

In addition to logbook details the fishery is monitored using observer information. Due to resource constraints only one onboard monitoring trip was conducted during 2003. While onboard, observers document vessel and gear information, location and depth fished, fishing practices, catch composition, and where possible, measure all landed species.

Stock assessment methods and reliability
A stock assessment of goldband snapper in the Timor Reef fishery was undertaken in 2003. Also included in this analysis is the section of the demersal fishery from the boundary of the Timor Reef fishery to Longitude 131^{O}. These two sections encompass the same goldband snapper stock and 95% of the demersal fishery catch of this species is currently in this area. 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 reviewed in 2000 and included a suite of models (e.g.surplus production model, delay difference model and stock synthesis models) (Ramm 1997).

The modelling approach combines the best available information (provided by logbooks, length frequency data, age at length data, reproduction and growth information and Coastwatch observations on Indonesian fishing effort) to estimate the biomass and the sustainable harvest level of the fishery.

Spatial analysis of CPUE data on a finer scale was undertaken at three locations in the Timor Reef fishery. The areas chosen were Tassie Shoal, Lyndoch Shoal and Franklin, Flinders, Blackwood and Evans Shoals were combined into one group. These areas were chosen as they accounted for 15-30% of the fishery over the period 1995-2003.

Initial computer modelling and the finer spatial data analysis show trends that are of concern. While catch rates for the entire fishery (Figure 4, Section 6, Timor Reef) have increased since 1995 and appear to be relatively stable, this masks a contrary trend occurring on a finer spatial scale. However all modelled scenarios suggest a decline in biomass under current levels of fishing effort. How quickly this occurs depends upon assumptions made about the level of exchange between the two areas, the level of Indonesian fishing effort and whether Australian fishing effort increases.

An absolute figure cannot be placed on sustainable harvest, because key parameters (Indonesian catch and effort, and level of interchange of fish and recruits, and the 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 (Ramm 1997), with 9,000 tonnes considered the more realistic estimate for modelling and management purposes. It has been recommended that the harvest level of goldband snapper should not exceed 10-15% of estimated biomass.

Genetic analysis using mitochondrial DNA has shown that goldband snapper (*Pristipomoides multidens*) is the same stock in both the Timor and Arafura Seas, but there are a number of separate stocks throughout Indonesia.

Otolith microchemistry indicates that adult goldband snapper are relatively sedentary and there is unlikely to be substantial movement between Western Australia and the Northern Territory and therefore these stocks can be managed separately.

Current status

In the Timor Sea, Indonesian long line and Australian trap and dropline vessels target goldband snappers. These methods target fish above the size of maturity, which means that the majority of fish landed in these fisheries have bred prior to capture. 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 red snapper juvenile habitats and obtaining more accurate growth parameters from the capture of juvenile goldband snapper.

Research

Summary to date

The FRDC funded project 1996/131; "Stock structure of *Pristipomoides multidens* resources across northern Australia" used mitochondrial DNA analysis to determine the structure of *P. multidens* stocks in Western Australia, the NT and southern Indonesian waters. Results from this study indicate those *P. multidens* in Indonesian and Australian waters are separate stocks. Multiple stocks appear also likely within Indonesian waters.

While there appears to be genetic similarity between the Australian sectors of Timor and Arafura Seas, there is evidence to suggest a restriction of gene flow along the northern and western Australian coastline, with a genetic disjunction in the Kimberley area (Ovenden et al. 2001).

A subsequent FRDC funded project (98/154) investigated the stock structure of *P. multidens* across northern Australia and southern Indonesia by analysing oxygen and carbon isotope ratios in otoliths obtained from the same samples. This study showed location-specific signatures and indicated that fish from all sites sampled within Australia (Exmouth, Rankin Bank, Broome, Vulcan Shoals, Timor Sea, and Arafura Sea), Indonesia and Papua New Guinea were different (Newman et al. 2000).

The research implies that there is unlikely to be substantial movement of *P.multidens* between these distinct adult assemblages. The stable isotope signatures were persistent through time at the different locations, indicating separate stocks (Newman et al. 2000). The results suggest that there are separate stocks of goldband snapper between Indonesia and Australia and in particular the Arafura Sea for the purposes of the fisheries management.

Growth and reproductive studies were undertaken on *P. multidens,* as part of the collaborative Australian Centre for International Agricultural Research (ACIAR) funded project between Australia and Indonesia (FIS/1997/165). This study provided updated stock assessment 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. The research results suggest goldband snapper between Indonesia and Australia and in particular the Arafura Sea for the purpose of fisheries management can be managed as separate stocks.

Current Research

Current research is focused on developing new methods through GIS spatial analysis tools to investigate trends in catch and effort in this fishery.

There is also continued refinement of population parameters and stock assessment for this fishery.

Compliance

Compliance with the Timor Reef fishery management arrangements are undertaken by the Police, Marine and Fisheries Enforcement Unit (PMFEU) of the NT Police, Fire and Emergency Services, under the *NT Fisheries Act 1988.*

The PMFEU effectively monitors and enforces the Timor Reef fishery management arrangements through the inspection of vessel arrivals and departure 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 PMFEU has the power, if necessary, to investigate the records of wholesalers and licensees.

In 2003, there were no significant compliance issues recorded for this fishery.

Demersal Fishery

Monitoring

The demersal fishery is primarily monitored using compulsory commercial fishers logbooks, which provide valuable catch and effort information, as well as data on the spatial distribution of the fishery. This logbook data must be returned together with monthly summary sheets by the 28th day of the following month.

In addition to logbook data the demersal fishery is monitored using observer data collected from the Timor Reef fishery. Demersal fishers using the same fishing methods generally fish the grounds in the Arafura Sea directly adjacent to the Timor Reef boundary. The catches and grounds themselves are similar to those within the Timor Reef fishery area in all respects enabling observer data to be validly applied to the demersal fishery. The low level of fishing and the economic value do not presently justify an onboard monitoring program outside that of the Timor Reef fishery.

Stock assessment methods and reliability

Gold band snapper stock assessment has been combined for both the demersal and Timor Reef fisheries. This is because 95% of fishing effort undertaken in the demersal fishery occurs on grounds adjacent to the Timor Reef fishery, which encompass the same goldband stocks. Stock assessment for the red snappers (*Lutjanus malabaricus, L. erythropterus)* has been undertaken as part of the stock assessment for the Finfish trawl fishery which targets these species and operates within the same boundaries as the demersal fishery.

Current status

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 for a review of management arrangements.

Future Assessment Needs

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

Research

Summary to date

Recent research has concentrated on both goldband and red snappers.

The FRDC funded project 1996/131; “Stock structure of *Pristipomoides multidens* resources across northern Australia ” used mitochondrial DNA (mtDNA) analysis to determine the structure of *P. multidens* stocks in Western Australia and Northern Territory. Opportunistic samples obtained from Kupang (West Timor) were also incorporated into this project. Results from this study indicate that *P. multidens* from northern Australian waters, and from waters around Kupang, are separate stocks.

A subsequent FRDC funded project (98/154) investigated the stock structure of *P. multidens* across northern Australia by analysing oxygen and carbon isotope ratios in otoliths obtained from the same samples.

This study showed location-specific signatures and indicated that fish from all sites sampled within Australia (Exmouth, Rankin Bank, Broome, Vulcan Shoals, Timor Sea, Arafura Sea), were different. Samples obtained opportunistically from Kupang (Indonesia) and Papua New Guinea, were incorporated into the study and were found to be different from each other and from Australian samples (Newman et al. 2000). This research implies that there is unlikely to be substantial movement of *P. multidens* between these distinct adult assemblages.

Further investigation of the stock structure of *P. multidens* from other sites within Indonesia was

undertaken as part of a collaborative ACIAR funded project (FIS/1997/165) between the NT, CSIRO, and Indonesia. This study found that multiple stocks exist within Indonesian waters (Ovenden *et al*. 2004).

While there appears to be genetic similarity between samples from the Australian sectors of Timor and Arafura Seas, there is evidence to suggest a restriction of gene flow along the northern and western Australian coastline, with a genetic disjunction in the Kimberley area (Ovenden *et al.* 2002).

Growth and reproductive studies were undertaken on *P. multidens, L. malabaricus* and *L. erythropterus,* 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 the demersal fishery. The research results suggest goldband snapper between Indonesia and Australia and in particular the Arafura Sea for the purpose of fisheries management can be managed as separate stocks.

Current Research

Current research is focused on developing new methods through GIS spatial analysis tools to investigate trends in catch and effort in this fishery.

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

Compliance

Compliance with the demersal fishery management arrangements are undertaken by the PMFEU (PMFEU) of the NT Police and Fire and Emergency Services, under the NT *Fisheries Act* 1988.

The PMFEU effectively monitors and enforces the demersal fishery management arrangements through the inspection of vessel arrivals and departure 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 PMFEU has the power, if necessary, to investigate the records of wholesalers and licensees.

In 2003, there were no recorded compliance issues for this fishery.

Finfish Trawl Fishery

Monitoring

Due to resource constraints only one monitoring trip was conducted during 2003. While onboard, observers document vessel and gear information, location and depth fished, fishing practices, catch composition, and measure landed species.

Stock assessment methods and reliability

The most recent stock assessment of the finfish trawl fishery was undertaken in 2003. This was undertaken as part of a collaborative Australian-Indonesian project funded by ACIAR (ACIAR - FIS/97/165). The stock assessment models used in this assessment were updated from those developed by Prof Carl Walters and Dr Norm Hall for this fishery. New information allowed biological parameters to be updated.

It appears that the snapper stocks in the Arafura Sea are shared with Indonesia, but with indications of little mixing between sections of the Arafura Sea. Unfortunately catch records for Indonesia are poor and there is a significant level of unlicensed, illegal fishing in Indonesian waters. Also of concern is the fact that Indonesian trawlers use very small mesh, catching snappers well below size at first maturity.

It is also possible that the Australian component of the red snapper stock, with only one trawler, may be acting as a donor to the Indonesian fishery, but further research on the degree of movement between both countries need to be undertaken.

Despite the paucity of Indonesian data and the degree of uncertainty of snapper movement, the model shows that current levels of catch from the Arafura Sea as a whole, are unlikely to be sustainable due to the high level of Indonesian fishing.

Stock assessment reliability

Due to the high level of Indonesian trawl fishing in the Arafura Sea adjacent to the AFZ, there are concerns about the sustainability of snapper stocks in the Arafura Sea as a whole. However, this 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 Australian is low, and there is good recruitment to the Australian fishery from nursery areas within Australia, then the effect of large scale Indonesian fishing will not be as severe as the situation where recruitment was primarily from Indonesia. Likewise if there was a high level of movement across the AFZ boundary, then large scale Indonesian effort would also impact more severely on the Australian fishery, than the situation where movement was limited.

Harvest levels in the Australian sector of the Arafura Sea are below current reference points.

Future Assessment Needs

Future assessment needs to concentrate on the degree of movement of red snappers between Australia and Indonesia to resolve whether Australia is acting as a donor of red snappers to Indonesia. Additional modelling needs to be undertaken to investigate different scenarios with alternative spatial dynamics for the fishery, and management responses.

Identification of juvenile habitats and where recruitment occurs is also important.

Compliance

Compliance with the Northern Territory finfish trawl fishery management arrangements are undertaken by the PMFEU (PMFEU) of the NT Police and Fire and Emergency Services, under the NT *Fisheries Act 1988.*

The PMFEU effectively monitors and enforces the finfish trawl fishery management arrangements through the inspection of vessel arrival and departures through the port of Darwin and Nhulunbuy. This includes verification of catch returns against processor returns (i.e. requirement for all operators to specify where they are selling their product). The PMFEU has the power, if necessary, to investigate the records of wholesalers and licensees. In 2003 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). Nonetheless, as a precaution, the Fisheries Group will undertake a compliance risk assessment by December 2004.

Shark Fishery

Monitoring

The basic monitoring information from the shark fishery comes from compulsory catch and effort logbooks. A transition from monthly records to set records has been managed since the late 1990s. This will ultimately improve the quality of information that can be gleaned from logbook data. Three observer cruises on commercial shark boats were undertaken during 2003, as well as the examination of the shark Bycatch of a barramundi fishery operation. Species composition of both harvest and Bycatch (retained and non-retained catch) was recorded.

Stock assessment methods and reliability

The shark fishery has a long history of continual assessment. In the 1980s a joint assessment activity was conducted between the NT Department of Primary Industries and Fisheries, CSIRO, and the Australian Fisheries Service. Titled the *Pelagic Fish Stock Assessment Program,* this activity estimated that in waters adjacent to the Northern Territory, the maximum sustainable yield for the black tip sharks, *Carcharinus 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.

CSIRO tagging studies indicated that the blacktip sharks form a single large stock throughout northern Australia. Movement rates both along-shore and offshore are relatively restricted between the northern Australia Arafura Sea and the GoC and Bonaparte Gulf.

A more recent assessment suggests a potential yield estimate for WA, the NT and Queensland of at least 2,000 tonnes per year, with an optimum

annual exploitation rate of 6 to 7% per year of the component of the stock vulnerable to gill net fishing.

Age-structure modelling indicates 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 NT gill net fishery indicates a decline in relative abundance since the mid 1980s. This may be for a number of reasons, including;

- The unaccounted removal of around 1,500 tonnes per year from the northern Australian stock component. This may be due to foreign fishing in the Arafura Sea, combined with unreported domestic catches.

- The slow depletion of an inshore, resident component of the overall stock, without a major impact of recent fishing on the stock as a whole (ie. overall stock may be recovering, but the inshore density is reduced by domestic fishing in spite of overall increase)

- The unreliability of the assessment techniques that are based almost entirely on CPUE statistics from both the Taiwanese and domestic gill net fisheries. There are a number of reasons to suspect that neither of these fisheries has provided CPUE trends proportional to changes in the actual stock size. There is little prospect that future information from logbook programs will be more useful in providing a good index of abundance based on CPUE.

There are now an additional seven years of CPUE data available since Walters and Buckworth (1997) undertook their assessment and, although there has been strong variation (particularly the strong peaks of 1995 and 1996), there has been little long-term change in the catch rate trend for black tip sharks. In contrast, there has been a very strong and persistent increasing trend in the catch rate of grey mackerel, suggesting that this species have been increasingly targeted.

The diversion of effort to target grey mackerel is supported by the observation in Figure 3 Section 6, Shark Fishery, that catch rate variation in the sharks and grey mackerel are in counterpoint – years in which catch rates of grey mackerel peaked, shark catch rates declined and vice versa.

It has not as yet been feasible to resolve logbook information into the target groups, but the inference from these observations is that catch rate trends presented for sharks are unlikely to capture trends in shark abundance. The slight declines evident may reflect increased reliance by operators on the highly valued grey mackerel, rather than a decrease in shark abundance.

Current Exploitation Status

Exploitation by the FTO and recreational sectors is considered to be quite low. The level of exploitation by the commercial is below most estimates of sustainable yield.

Given the very strong increasing trend in grey mackerel catches and catch rates, an ostensible decline in shark CPUE could result from increased direction of fishing toward mackerel and away from shark. However, given the high degree of uncertainty in those estimates and indications of a decline in CPUE since the mid-1990s, conservative management precludes any increase in exploitation. The fishery is considered to be fully exploited.

Future Assessment Needs

There is clearly a need for updated assessment of the shark fishery. However the information on fishery status that can be provided by logbook catch and effort data is limited, and new assessments are unlikely to be informative. A key recommendation from previous assessments has been to establish a cooperative program with fishers to provide a “fishery independent” index of stock trend based on standardised, regular fishing at a set of consistent test locations along the Top End and into the GoC.

Further, there should be a concerted effort to obtain black-tip 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.

A collaborative tagging program involving catch and release (by line) of a small number of sharks by commercial operators to provide estimates of harvest rate is being developed.

Given the significance of the grey mackerel catch in this fishery, there is a need for further information on this species. Information will be required on stock structure, movements and age structure of the population. Collaborative projects to undertake this research will be developed during 2004-2005.

Research

Summary to date
In the mid 1980s, the NT Shark fishery was the subject of a major joint NT/CSIRO Pelagic Fish Stock Assessment Program. This research program undertook extensive gillnetting around the NT coastline and tagged sharks. Occasional tag recoveries are still occurring. Outcomes from that research were discussed above. Research since that time has been limited to monitoring of trends in the commercial fishery data and stock assessment modelling using all available data.

Incorporation into management
Results of research have allowed informed and conservative management regimes to be implemented for the shark fishery.

Current Research
Two recent FRDC projects, *Northern Australian Sharks and Rays: the Sustainability of Target and Bycatch Species, Phases 1* and *2,* are providing substantial information on species composition and biology of sharks and rays in the shark fishery, as well as Bycatch in other fisheries. These projects are national projects, with collaboration between the northern states and NT as well as Victoria and the CSIRO. Development of a collaborative tagging program with commercial fishers is also under way.

Compliance
Compliance activities for the shark fishery management arrangements are undertaken by the PMFEU (PMFEU) of the NT Police, Fire and Emergency Services, under the NT *Fisheries Act* 1988.

The PMFEU effectively monitors and enforces management arrangements for the shark fishery through the inspection of vessel arrivals and departure 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 PMFEU has the power, if necessary, to investigate the records of wholesalers and licensees.
In 2003, there were no significant 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.

The Northern Territory received $78,120 in licence fees for Joint Authority fisheries (Shark $15,960; demersal, $50,400; finfish $1,680; Timor Reef $10,080) in 2003-2004.

This revenue was paid into the Northern Territory Fishing Industry Research and Development Fund. Complete details on revenue and expenditure may be found in the Annual Report of the Northern Territory Department of Business, Industry and Resource Development.

10. Management Arrangements 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 (2003)
Shark	9	10	Effort Controls Restriction of the total number of licences issued 2500 m of net mesh size 150 mm to 250 mm Longline to 20 nautical miles 3:1 licence reduction program	<u>Blacktip sharks</u> Catch levels increase to 2000 t over the next calendar year.	2000 tonnes for northern Australia	Black Tipped shark 493 t Other shark 391 t Grey mackerel 766 t Spanish mackerel 13 t Other 21 t
Demersal	Not Applicable	60	Effort Controls Limit on licences issues Vertical Lines with a maximum of 5 hooks Droplines with 6-40 hooks Restrictions on the possession of sharks and mackerels	<u>Red Snappers</u> Combined finfish trawl and demersal fishery catch levels increase to 2500 t over the next calendar year. <u>Gold Band Snapper</u> Triggers to be implemented into management arrangements when sustainable yield estimates are developed. <u>Red Emperor and Cod</u> Currently being developed	Red Snapper –Arafura Sea 1500t (Ramm 1997b) Timor Sea 600-2500t (Ramm 1994) GoC 2880-9015t (Anon 1994).	Reef fish 7 t Goldband snapper 75 t Red Snappers 46 t Red Emperor 7 t Cod 6t

Timor Reef	2	10	Effort Controls Limit on licences issues Vertical Lines with a maximum of 5 hooks Droplines with 6-40 hooks Maximum of 45 traps per licence Transferability on amalgamation of two restricted licences Must hold a Demersal Licence Restrictions on the possession of sharks and mackerels	<u>Goldband/ Red Snappers</u> Catch levels for goldband and red snapper increase to lower sustainable yield estimates over the next calendar year Goldband snapper trigger = 900t Red snapper trigger =1300t Catch levels decline by 30% over the next calendar year. <u>Red emperor and Cod</u> Catch rates of red emperors increase to 25% of the catch and cods increase to 10% of the catch over the calendar year Catch levels decline by 30 % over the next calendar year.	Gold Band Snapper – Arafura Sea 100-400t (Ramm 1994) Timor Sea 900t (Ramm 1997) GoC: No estimate currently available	Goldband Snapper 328 t Red Snappers 76.5 t Red Emperor 22.5 t Other Reef Fish 22.5 t
Fish Trawl	Not Applicable	1	Effort Controls Restrictions on the use of fishing gear	<u>Red Snapper</u> Combined finfish trawl and demersal fishery catch levels increase to 2500 t over the next calendar year. Catch levels decline by 30% over the next calendar year (finfish trawl only).	1500 t for Arafura Sea.(Ramm 1997b) GoC 2880-9015t (Anon 1994).	Confidentiality considerations preclude publication of catch data. 2003 catch of red snapper <50% of trigger point

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;

(1) 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 THERFORE, 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 aright 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

OUT OF SESSION MEETING OF THE NORTHERN TERRITORY FISHERIES JOINT AUTHORITY

October 2003

RECORD OF DECISIONS

Members: Deputy for the Commonwealth Minister for Agriculture, Fisheries and Forestry Mr Frank Meere

Deputy for the Northern Territory Minister for Business, Industry and Resource Development Mr Richard Sellers

1. PROCEDURAL MATTERS

Officials of the Commonwealth and NT Fisheries met to discuss current issues relevant to the NTFJA on 19 August 2003. Details of the discussion and recommendations from this meeting are detailed below for consideration and endorsement by the NTFJA out of session.

1.1 The Record of Decisions from the NT Fisheries Joint Authority (NTFJA) meeting of 18 September 2002.

The Record of decisions arising from the NT Fisheries Joint Authority (NTFJA) meeting of 18 September 2002 were reviewed and it was recommended that they be confirmed.

Recommendation to the JA: that the record of decisions of the NTFJA meeting of 18 September 2002 be confirmed.

2. MATTERS FOR CONSIDERATION

2.1 Application for granting an additional shark fishery licence.

The meeting noted a presentation by Mr. Ken Warford who provided background information to the meeting regarding loss of joint authority licenses. Detailed background information is attached regarding this issue. Mr. Warford said it was not his intention to allow his licences to lapse, he was under the impression that he had until the 30th June 1995 to renew his licences. He asserts that a member of the NT Fisheries department, Mr. Vollmer, gave him advice in early January of 1994, that he had 12 months to pay for his licences in the presence of witnesses. NT fisheries stated that renewal notices during 1994 had been returned unclaimed to the department. The group asked

Mr. Warford why his mail was *not* forwarded on to him when he knew he would be away for a long time. Mr. Warford replied that he didn't need to as fisheries had told him that he had 12 month's to renew his licences. Mr. Warford said he was aware of changes to the licensing year in 1994.

Mr. Warford stated that the first he knew about his licences expiring was in January 1995 when Mr. Rob Ladlow (Chairman, NT Shark Fishermen's Association) rang him in Brisbane to inform him that his licences had expired. Mr. Warford then contacted NT Fisheries to confirm this. Mr. Warford contacted the Minister for Fisheries who referred the matter to the Ombudsman's office for consideration. Preliminary advice was obtained. (Attachment 1)

Mr. Warford said he has since made many approaches to NT fisheries and the Minister's office to have his licences returned. He said he was not concerned about his other licences that he lost, just his Spanish mackerel and shark licences. In July 1997, a Spanish mackerel licence was returned to Mr. Warford, who told the group that he had since had to sell it to survive.

The group asked if Mr. Warford would like to make a written statement of his case to the JA. Mr. Warford said that what was presented here by the department was a fair representation of the facts and he did not feel that he could add any more to the issue.

Recommendations to the JA: -
- That the JA write to Mr. Warford to formally request him to send a letter outlining his case to the JA; and
- That NT Fisheries send a copy of the Ombudsman's report and original JA response to delegates.

2.2 Issues with de-linking of licences in Old and NT shark fisheries.

NT representatives raised concerns about an increase in effort due to the de-linking of the NT shark licence to the Qld fishery. In particular, how the new Qld permit system could restrict further effort into the gulf shark fishery.

It was noted that the issue could be dealt with under the OCS agreement, and that there could be a possible change to the trilateral management arrangement in the Joint Authority.

Recommendation to the JA - that the JA consider future management strategies and controls to ensure the sustainability of the shark and Grey mackerel stocks in the GoC.

3. OTHER ITEMS

3.1 Change to the need for a link between the Demersal and Timor Reef licences.

An information paper was tabled, and the issues were discussed. The group considered the proposal that canvassed a request from Industry to remove the requirement to hold a Demersal licence to utilise their Timor Reef licence. An overview of industries request is in the attached information paper. At present, the proposal is with the Timor Reef and Demersal licence holders for comment. It is recommended that the NTFJA approve the proposed changes to the Regulations as described.

Recommendations to the JA: That the JA approves the removal of a licence - linking requirement between the Timor Reef and Demersal fisheries.

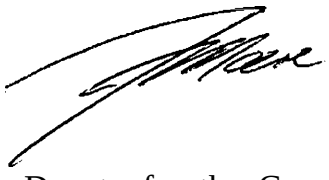
3.2 Update on review of shark Bycatch in non-target fisheries.

An information paper was tabled and noted by the group.

Recommendation to the JA: That the JA notes the review of shark Bycatch in non-target fisheries.

3. NEXT MEETING of the NTFJA

Recommendation to the JA: that the next meeting of the NTFJA coincide with the 2004 Northern Australia Fisheries Management workshop.



Deputy for the Commonwealth Minister for Agriculture, Fisheries and Forestry
Mr Frank Meere

Deputy for the Northern Territory Minister for Business, Industry and Resource Development
Mr Richard Sellers