



Queensland
Government




TORRES STRAIT
PZJA
PROTECTED ZONE
JOINT AUTHORITY

Strategic and Export Reassessment Report

Torres Strait Trochus Fishery
June 2008

Prepared by the Australian Fisheries Management Authority on behalf of the Torres Strait Protected Zone Joint Authority

www.afma.gov.au

 Protecting our fishing future

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1 Description of the Fishery

1.1 Target/permited/prohibited species

The Torres Strait Trochus (*Trochus niloticus*) Fishery (TSTF) is a small, single-species commercial and subsistence fishery. Trochus are a tropical marine gastropod of the order Archeogastropoda. Trochus inhabit reef flats made of coral rubble, and as juveniles are generally found low on the inter tidal reef flat (Castell *et al.*, 1996). Juveniles are extremely cryptic because of their small size, similar shell colour to their habitat and tendency to bury themselves a short distance under the surface (Crowe *et al.*, 2001). As they grow, trochus move out towards the reef slope. Most are found at depths to 10 m but trochus may be found as deep as 24 m (Sant, 1995).

The commercial fishery is largely based on the trochus' nacreous (mother of pearl) shell, which is used for making buttons and jewellery and can be ground down for use in floor tiles, metallic paints and shampoo. The majority of commercial product is exported to Asia and Europe. Trochus meat is edible and the shell has been collected for subsistence purposes by the traditional occupants of Torres Strait for centuries.

1.2 Management arrangements employed in the fishery

Management objectives for the fishery, in accordance with the Torres Strait Treaty (the Treaty) and *Torres Strait Fisheries Act 1984* (TSF Act), are:

- i) to manage the resource so as to achieve optimum utilisation;
- ii) to maximise opportunities for Traditional Inhabitants of Australia; and
- iii) to encourage Traditional Inhabitants of the Torres Strait to participate in the Trochus Fishery.

Fishing is limited to traditional inhabitants only in the commercial trochus fishery. Traditional inhabitants can enter this fishery by obtaining a Traditional Inhabitant Boat (TIB) fishing licence with a trochus (TR) endorsement. During June 2008 there were 110 TIB licenses with a trochus endorsement. The Queensland Department of Primary Industries and Fisheries (QDPI&F) assesses and issues licences on behalf of the PZJA.

Management arrangements currently in place for the Australian area of the TSTF include:

1. Fisheries Management Notices

- Fisheries Management Notice No. 52 – Prohibition on taking trochus (gear and size restrictions) includes -
 - limiting the method of taking trochus shell to either hand or hand held non-mechanical implements;
 - the use of underwater breathing apparatus is permitted; and



- a minimum size limit of 80 mm and maximum size limit of 125 mm (when measured in their original form as fished, at the widest part of the base of the shell) applies to all fishing, except traditional fishing¹.

2. Licence condition

- Implemented by way of licence conditions, a competitive *Total Allowable Catch* (TAC) (*measured in tonnes with animal in shell*) of 150 tonnes exists in the fishery.

3. Licensing arrangements

- The issue of additional licences is restricted to boats wholly owned and operated by traditional inhabitants.

1.3 Fishing methods employed

TST are collected by walking on reef tops as tides permit or by diving on reef tops and reef edges. The depth ranges of the most frequently sought species occur in a range of 0-20m. It is estimated that most fishing occurs within 0-10m.

1.4 Fishing area

The TSTF comprises tidal waters within the Torres Strait Protected Zone (TSPZ) and the area declared under the TSF Act to be '*outside but near*' the TSPZ for commercial fishing for trochus (Figure 1). For the TSTF, the outside but near area extends to waters just south of Prince of Wales Island to the west and to due east of Cape York Peninsula.

Recent data collected from Torres Strait seafood buyers and processors docket books showed that the majority of trochus during 2005 were harvested from the central eastern Torres Strait regions comprising of the Great North East Channel, Darnley and Warraber regions (Fig. 2).

¹ In this context "traditional fishing" refers to non-commercial fishing by traditional inhabitants for subsistence purposes.



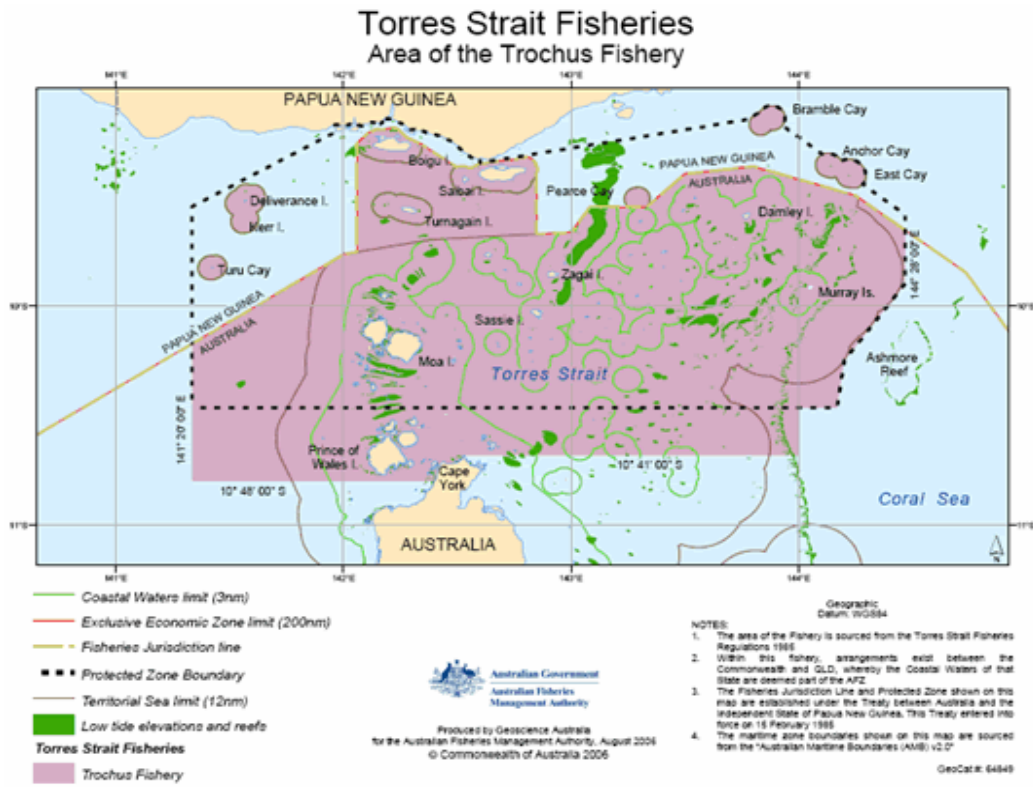


Figure 1: Area of the Torres Strait trochus fishery.

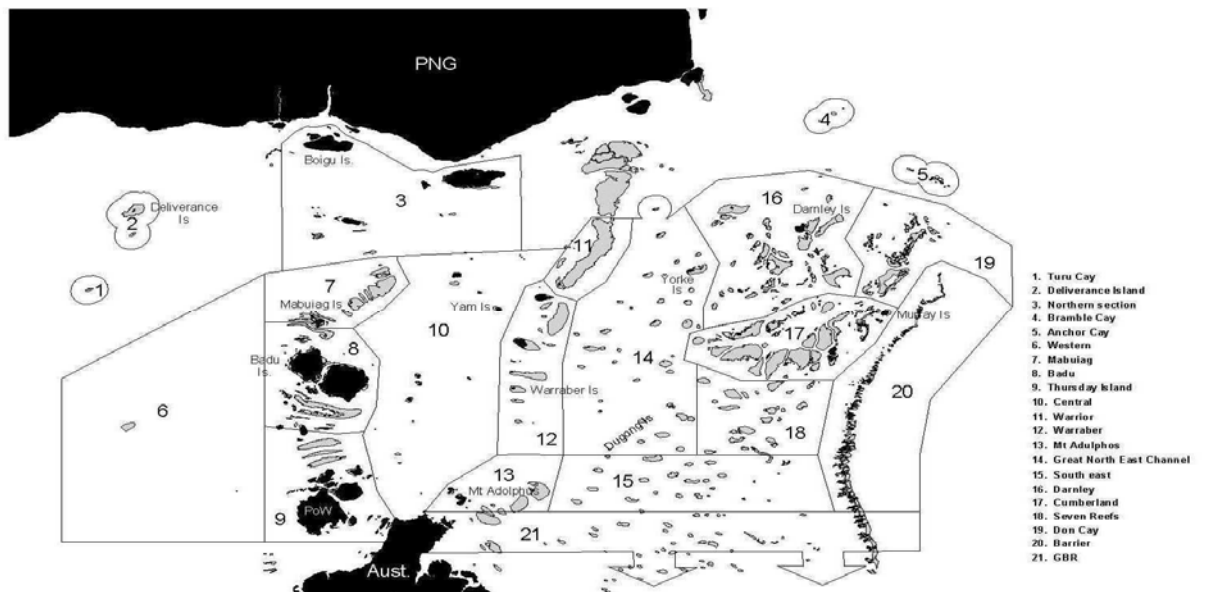


Figure 2: Torres Strait bioregions.

1.5 Allocation between sectors

Fishing is limited to traditional inhabitants only in the commercial trochus fishery. A small indigenous catch for traditional subsistence fishing is utilised as trochus meat and mother of pearl for indigenous arts and crafts.

1.6 Governing legislation/fishing authority

The TSTF is managed by the Protected Zone Joint Authority (PZJA) considering advice from its consultative bodies. This Authority consists of the Australian Government (represented by the Minister for Agriculture Fisheries and Forestry), the Queensland Government (represented by the Minister for Primary Industries and Fisheries) and the Torres Strait Regional Authority (represented by the Chair). The Australian Fisheries Management Authority (AFMA) coordinates and delivers fisheries management and surveillance/enforcement programs in the Torres Strait in conjunction with the Queensland Department of Primary Industries and Fisheries (DPI&F) on behalf of the PZJA and in accordance with the TSF Act. Recreational fishing, including charter fishing, is managed under Queensland law.

Since 1999, when management of the fishery was transferred from the Queensland Government to the PZJA, the fishery has been managed under the TSF Act. The management regime is legislated through Fisheries Management Notices (FMN) under the TSFA and conditions on fishing permits. FMNs are issued under the TSF Act and give effect to the fisheries responsibilities of the Torres Strait Treaty and related subsidiary management arrangements between Australia and Papua New Guinea. Under Section 16 of the TSF Act any formal amendments regulating fishing activities requires the Minister to issue a FMN published in the Commonwealth Gazette.

1.7 Status of export approval/accreditation under the *Environment Protection and Biodiversity Act 1999*

The TSTF was strategically assessed in 2005 under Parts 10, 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Export approval was granted through declaring the TSTF a Wildlife Trade Operation (WTO) for a period of three years, which is valid until 29 November 2008.

This Assessment Report for the TSTF is submitted as the basis for reassessment of the fishery against Parts 13 and 13A of the EPBC Act, but will also be used to review whether the impact of the fishery has changed since the last assessment against Part 10.



2 Management

2.1 Changes to management arrangements

At the 14th meeting of the Protected Zone Joint Authority (PZJA) in November 2003, the PZJA approved a new Torres Strait consultative structure. With the adoption of a new Torres Strait consultative structure, the Bêche-de-mer Working Group (BDMWG) was disbanded and the functions of the BDMWG were rolled over into the Torres Strait Fishery Management Advisory Committee (TSFMAC). Experience with the new TSFMAC highlighted that it was difficult to give sufficient attention to all of the lower value Torres Strait harvest fisheries. Consequently, the PZJA at its 18th meeting in July 2005 formally approved the establishment of a Hand Collectables Working Group (HCWG) to include harvest fisheries such as bêche-de-mer, trochus, pearl shell and sponge.

The first Torres Strait HCWG was held on 11-12 October 2007. The working group was an opportunity for all representatives to discuss Hand Collectable Fisheries issues and prioritise research and management needs. As it was the first working group for these fisheries no specific management changes were proposed, although a number of action items were raised to be investigated and acted upon for the next working group in June 2008. Specific action items related to the TSTF included:

- A new Harvest Strategy will be drafted by AFMA to investigate the possibility of utilising precautionary low TACs for species with unknown abundances. The Harvest Strategy will also investigate Community Based Management plans proposed by Community representatives. The draft Harvest Strategy will be discussed at the next working group meeting (July 2008) and following approval will be distributed to all relevant stakeholders for public comment before any proposed legislative changes are made.
- The working group will issue a strong statement to the next PZJA meeting raising concerns of the effects of illegal fishing on Hand Collectable Fisheries and will seek further AFMA and Queensland compliance resources to be committed to these fisheries.
- AFMA will seek significant funding to enable a better understanding of standing stocks of bêche-de-mer and trochus. Research will also further investigate Traditional fisheries practices in order to prevent localised depletion by incorporating voluntary seasonal and/or area closures and rotational harvest practices into management arrangements.

In addition the PZJA agencies are moving towards making Torres Strait seafood buyers and processors docket book reporting compulsory. Docket book returns have been a promising source of data regarding effort for other Torres Strait fisheries and catch reporting is expected to improve once it has become compulsory. AFMA will produce an annual data summary for distribution to all stakeholders (Attachment A).

AFMA will keep the Department of the Environment, Water, Heritage and the Arts (DEWHA) regularly informed of the progress of the aforementioned projects.



2.2 A statement of the performance of the fishery against objectives, performance indicators and performance measures

The TSTF is managed in accordance with the objectives specified in *Torres Strait Fisheries Act 1984* (the Act). The performance of the fishery is reported in the annual report available at webpage:

<http://www.pzja.gov.au/resources/publications/reports.htm>

2.3 Compliance risks present in the fishery and actions taken to reduce these risks

Queensland Boating and Fisheries Patrol (QB&FP) enforcement officers check for compliance with regulations such as gear restrictions and size limits, as well as any unlicensed fishing for commercial purposes. The *Torres Strait Fisheries Act 1984* outlines the penalties associated with non-compliance. Over the past three year there has been only one prosecution for undersized trochus being harvested.

Compliance in the TSTF is difficult as much of the fishing occurs in remote areas amongst many boats that are spread over a vast area. The current compliance program is restricted by the costs of implementing a program in these circumstances.

Foreign illegal fishing is not considered a risk for the TSTF due to the low market value of trochus product. AFMA Foreign Compliance officers have not found any trochus on foreign fishing vessels in Australian waters to date. Despite this AFMA has sought to reduce foreign compliance risks for all Torres Strait fisheries by increasing response coverage by approximately 80% since September 2007. AFMA compliance capabilities include:

- Two daily Coastwatch flights
- One Customs ACV and one Australian Navy platform patrolling the Warrior reef complex daily
- At least one additional Navy vessel patrolling the Torres Strait region daily.

2.4 Consultation processes

The PZJA at its November 2003 meeting established a new consultative structure of advisory bodies, which allows for greater participation from Islander representatives at all levels of the consultative process. Islander representatives, together with industry and government representatives, actively participate in the development of management arrangements (Figure 3). The PZJA also approved changing the Torres Strait Fisheries Management Committee (TSFMC) to the TSFMAC.



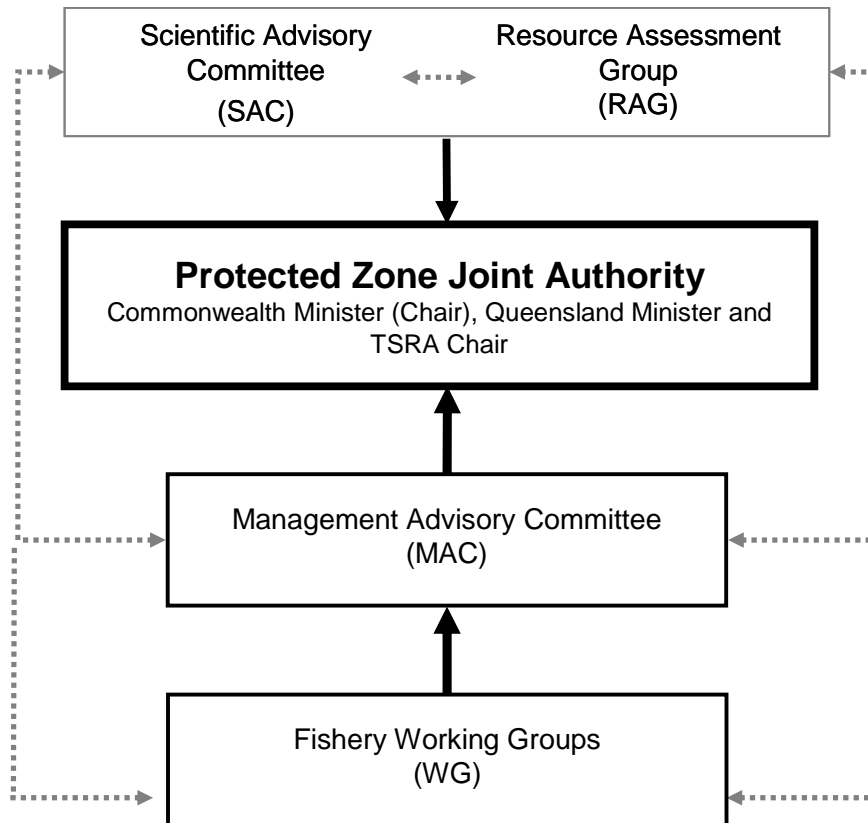


Figure 3: The consultative structure of the Torres Strait Protected Zone Joint Authority (PZJA). Solid lines and dashed lines indicate primary and secondary lines of communication respectively

AFMA consults as widely as practicable to develop sound fisheries management arrangements. Before management arrangements are changed, stakeholders and registered interested persons are invited to discuss issues relevant to the fishery and are discussed at regular stakeholder meetings. This allows AFMA to take into account any representations received when making management decisions.

AFMA also consults with the DEWHA in regard to proposed management arrangements.

2.5 Description of cross-jurisdictional management arrangements

Australia and Papua New Guinea entered into the Treaty on 15 February 1985. The Treaty is concerned with sovereignty and maritime boundaries in the area between the two countries and the protection of the traditional way of life and livelihood of traditional inhabitants and of the marine environment. The Treaty also establishes the TSPZ in which each country exercises sovereign jurisdiction for swimming fish and sedentary species on the respective sides of the agreed jurisdiction lines. The lines are known as the Fisheries Jurisdiction Line and Seabed Jurisdiction Line (Figure 1).

The Commonwealth parliament passed the TSF Act to give effect to the fisheries provisions of the Treaty. The TSF Act established the PZJA. The PZJA comprises both the Commonwealth and State (Queensland) Ministers responsible for fisheries and since



October 2001, has included the chair of the Torres Strait Regional Authority (TSRA). The PZJA has regard to the rights and obligations conferred on Australia by the Treaty, in particular the protection of the traditional way of life and livelihood of the traditional inhabitants, including their traditional fishing.

While having obligations to protect the traditional way of life of the traditional inhabitants, the PZJA is also responsible for monitoring the condition of Australian fisheries in the Torres Strait and for the formulation of policies and plans for their management. These fisheries are prawn, tropical rock lobster, pearl shell, mackerel, bêche-de-mer, trochus, finfish, barramundi, crab and traditional fishing (including turtle and dugong).

In addition AFMA in conjunction with the QBFP coordinates and delivers fisheries management and surveillance/enforcement programs in the TSPZ on behalf of the PZJA and in accordance with the provisions of the TSF Act.

2.6 Outcomes of review processes

There are currently no review processes. The suitability of harvest strategy is currently being investigated for the TSTF to be implemented in 2010. The harvest strategy may include additional trigger points and decision rules and processes which will guide management in all sectors of the TSBDMF.

2.7 Demonstration of compliance with threat abatement plans, recovery plans, etc and also relevant domestic and international agreements.

Due to the TSTF being restricted to hand collection and the small scale of the fishery there are no relevant threat abatement plans, recovery plans, etc to comply with and also relevant domestic and international agreements.



3 Catch data

3.1 Total catch of target species (including retained and discarded catch)

Catch, which has been derived from docket book returns since 2004, has ranged from 4 tonnes in 2004 to 82 tonnes in 2005 (Fig. 3). Variation in catch has been linked to the international market price for mother of pearl product. Prices for mother of pearl peaked in 2005 and have declined since. For detailed catch analysis older than 2 years old refer to Attachment A.

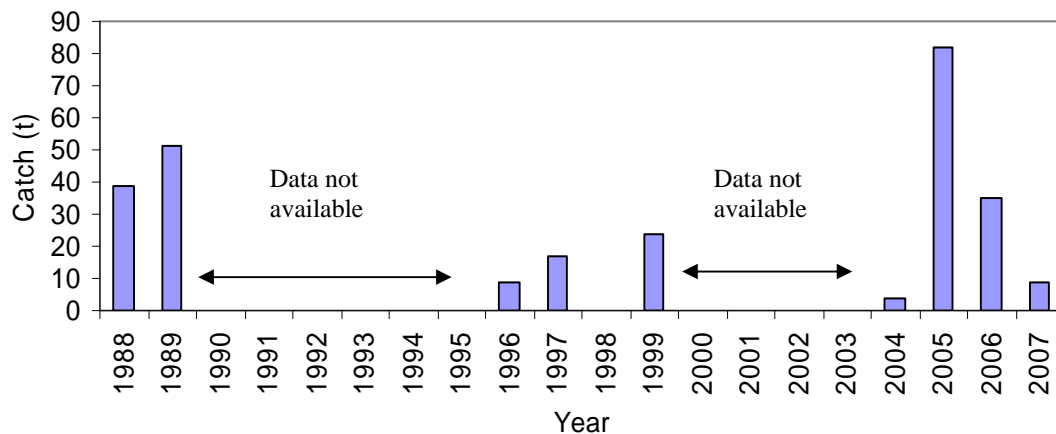


Figure 3: Torres Strait trochus catch from 1988 to 2007.

3.2 Total catch of target species taken in other fisheries

There is no catch of target species in other fisheries.

3.3 Catch of by-product species (reported by species)

By-product species are unlikely due the fishery being restricted to hand collection.

3.4 Total catch of bycatch species (reported by species if possible)

Bycatch species are unlikely due the fishery being restricted to hand collection.

3.5 Harvest by each sector (commercial, recreational, indigenous and illegal)

The total harvest is only known for the commercial indigenous fishery. Recreational take is illegal and indigenous harvests (subsistence) are unknown. Illegal take is assumed to be minimal due to the low value of mother of pearl.



3.6 Effort data including information on any trends

Current effort data is limited to docket book data returned to AFMA for 2005 and 2006. It should be noted that it is difficult to note any trends from two years worth of effort data. Mean catch per seller was higher during 2005 than during 2006 (1639 kg compared 834 kg). This represented a 49% reduction in the mean trochus catch sold (Table 2). The number of sellers was reduced from 50 during 2005 to 42 in 2006 whilst mean catch per diver day declined from 47 kg to 35 kg over the same period (Table 2).

Mean catch per diver day was calculated by multiplying the number of divers by the number of days fished divided by the catch. During 2005 62% of docket books returned had completed information on the number of divers and number of days fished, whilst 91% were completed in 2006 (Table 2).

Table 2: Torres Strait trochus fishery catch and effort for 2005 and 2006. (Source: Attachment A, Torres Strait Trochus and Bêche-de-mere Fishery Data Summary 2005 and 2006).

Year	2005	2006
Trochus catch (kg)	81,946	35,043
Number of sellers	50	42
Number of diver days (% completed in docket books)	872 (62%)	909 (91%)
Mean catch per seller (kg)	1639	834
Mean catch per diver day (kg)	47	35
Approximate market price	\$4.50-\$5.00	\$3.50-\$4.25

3.7 Spatial issues/trends

Current spatial data is limited to docket book data returned to AFMA for 2005 and 2006. It should be noted that it is difficult to note any trends from two years worth of spatial data. The greatest catch obtained by trochus sellers during 2005 was from Torres Strait docket book region of Darnley (35406 kg) whilst during 2006 the greatest catch (11724 kg) was obtained from the Warraber region (Fig. 4). The majority of sellers during 2006 obtained their catch from both Warraber and Great North East Channel regions (22 each) whilst the majority of sellers in 2006 (17) obtained their catch from the Warraber region (Fig. 4).



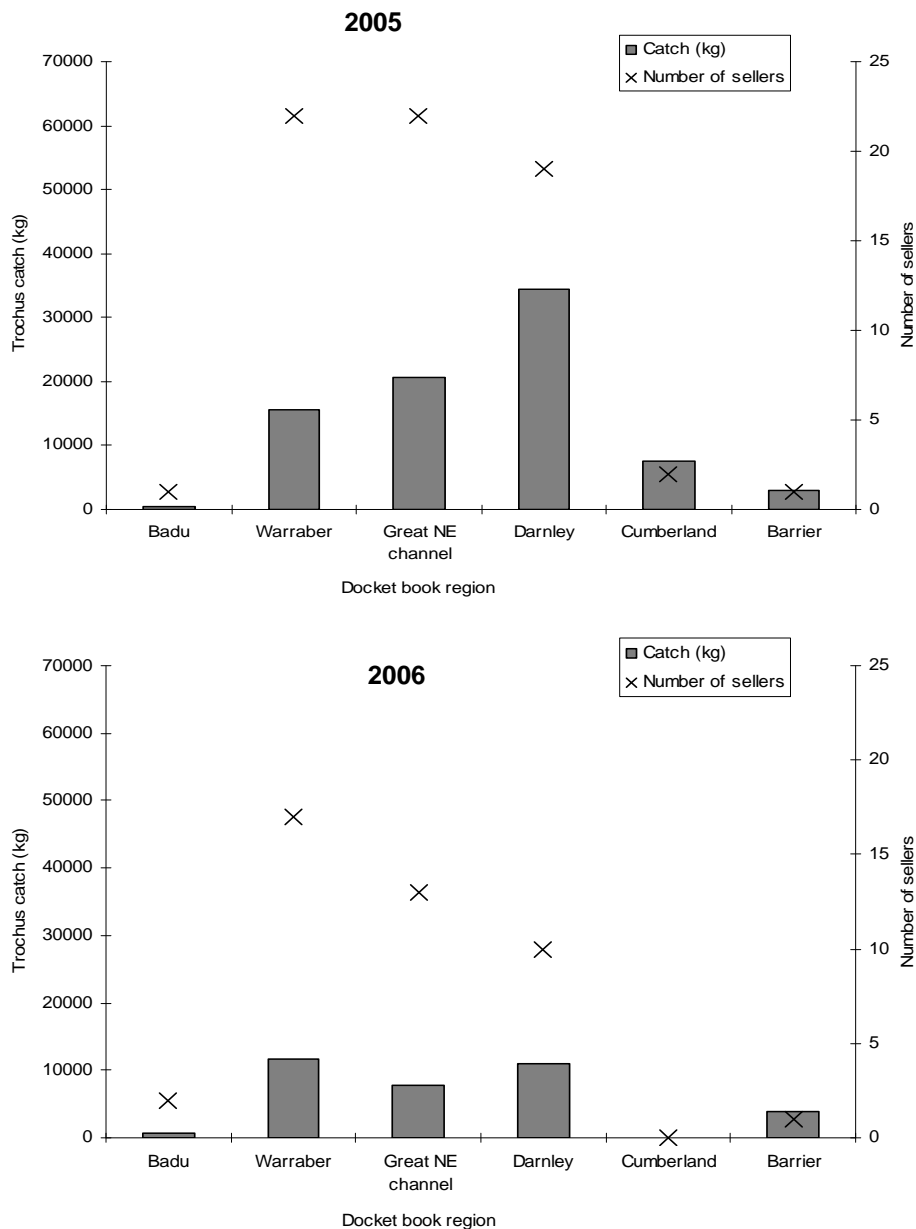


Figure 4: Torres Strait trochus fishery catch and number of sellers by docket book area for 2005 and 2006. (Source: Attachment A, Torres Strait Trochus and Bêche-de-mer Fishery Data Summary 2005 and 2006).

4 Status of target stock

4.1 Resource concerns

Depletion of commercially viable species in particular areas has already occurred in the Torres Strait Bêche-de-mer (sea cucumber) Fishery. Due to the nature of fisher behaviour, localised depletion of trochus shells is an area of potential concern. Management agencies recognise localised depletion to levels at which breeding success



may be impaired is a major risk unless effort can be distributed and measures are in place that provide effective protection for a proportion of the breeding stock. These measures may include, but should not be limited to, closed areas, local stop catch and move on rules or rotational zoning.

Fisheries activity is closely linked to the international demand for trochus. The fishery has appeared to operate in a boom bust fashion, with high catches occurring during high prices of trochus being obtained. Whilst this has allowed the fishery to recover from potential over harvesting in the past there is a risk that if high prices are sustained for an extended period stocks may not be able to recover as the TAC for the fishery is not based scientific analysis.

4.2 Results of any stock assessments

No stock assessments have been undertaken for the fishery.

4.3 Results of any stock recovery strategies (if applicable)

The Bureau of Rural Sciences (BRS) has classified the stock status of the fishery as uncertain. As the fishery has not yet been considered overfished, stock recovery strategies have not been applicable.

5 Interactions with protected species

5.1 Frequency and nature of interactions

Due to the fishery being restricted to hand collection only; no interactions with protected species have been recorded or are considered likely.

5.2 Management action taken to reduce interactions and results of such action

See section 5.1.

6 Impacts of the fishery on the ecosystem in which it operates

6.1 Results of any Ecological Risk Assessments

Due to the small size of the fishery an Ecological Risk Assessment (ERA) has not been conducted. A timeframe for an ERA for this fishery will be considered before 2009.



6.2 Nature of impacts on the ecosystem

Although an ERA has not been conducted for the fishery it could be envisaged that impacts on the ecosystem would be restricted to:

- Concerns about exploitation levels of target species;
- Concerns about translocation of species via hull and anchor fouling; and
- Anchoring/mooring and other anthropogenic activities such as treading on reef top habitat.

6.3 Management action taken to reduce impacts and results of such action

As there has not been an ERA conducted for this fishery to date, there have been no formal management actions taken. Despite this, the issues raised in Section 6.2 will be considered during the drafting of a proposed Harvest Strategy for the fishery before 2010.

7 Progress in implementing recommendations and conditions resulting from the Department of the Environment and Heritage assessment of the fishery

7.1 Description of progress in implementing each recommendation and condition

Progresses regarding the implementation of DEWHA recommendations are listed in Table 2.

Table 2: Recommendations to the Protected Zone Joint Authority (PZJA) on the ecologically sustainable management of the Torres Strait Bêche-de-mer Fishery.

Performance Criteria	Level of Achievement as at 31 May 2008	Deadline
1: DEWR to be informed of any proposed amendment to the management regime for the TSTF to enable DEWR to evaluate any impact on the ecological sustainability of the fishery.	There have been no amendments to report.	Ongoing



Performance Criteria	Level of Achievement as at 31 May 2008	Deadline
<p>2: PZJA, within 2 years, to develop fishery specific objectives linked to performance indicators and performance measures for the target species. The performance of the fishery to be reviewed annually against these measures and the outcomes published.</p>	<p>There has been no progress because of other higher priority issues. AFMA is investigating the creation of a Harvest Strategy for the fishery which may include performance indicators and measures.</p>	<p>29 November 2007</p>
<p>3: PZJA, within 2 years, to review stock assessment process and existing TAC levels to ensure that methods used to estimate potential yield and TACs are sufficiently precautionary, and recognise the level of risk.</p>	<p>There is no stock assessment for the fishery. The TAC figure has no scientific basis per se.</p> <p>The Hand Collectable Working Group investigated the possibility of incorporating trochus abundance data into future bêche-de-mer research and stated that such research should be a considered a priority for the Torres Strait Scientific Advisory Committee (TSSAC).</p>	<p>29 November 2007</p>
<p>4: PZJA to continue to work with Torres Strait communities, fishers and processors to ensure that adequate and reliable data, appropriate to the scale of the fishery, are collected from all sectors to ensure sustainable management of the Torres Strait trochus resource. Initial priority should be given to the docket book system for commercial sectors of the fishery. Options for the collection of non-commercial and illegal take will be evaluated, taking account of outcomes of recent research and compliance programs, and appropriate options progressively developed and implemented to improve estimates of all removals used in stock assessments and management controls.</p>	<p>AFMA continues to collect trochus information through the docket book system. A data summary of trochus catch data obtained from docket books was distributed to stakeholders in July 2007. Annual data summaries will report on the performance of the fishery.</p> <p>Legislative amendments to the TSF Act will lead to arrangements that make it compulsory for all buyers to hold a commonwealth fish receiver permit and to complete catch documentation. These measures will lead to a significant improvement in collection of catch data and monitoring of the fishery.</p>	<p>29 November 2008</p>
<p>5: PZJA to continue to cooperate with other management agencies, research institutions, Torres Strait communities and the industry in efforts to identify and undertake research and monitoring projects to address future sustainability of</p>	<p>There was no explicit cooperation on any projects during the period however any positive opportunities that present themselves will be capitalised on.</p>	<p>29 November 2008</p>



Performance Criteria	Level of Achievement as at 31 May 2008	Deadline
the Torres Strait trochus fishery.		
6: PZJA to investigate and, if necessary, progressively implement measures to minimise potential localised depletion in the fishery.	This remains an unresolved issue that is exacerbated by the way fishing effort is concentrated around inhabited islands. It is hoped that the minimum and maximum legal sizes prevent any deleterious depletion. In addition AFMA is investigating the creation of a Harvest Strategy which will utilise Traditional fisher practices such as rotational, spatial and seasonal harvesting.	29 November 2008

7.2 Reasons for any missed deadlines

A number of deadlines for the implementation DEWHA recommendations have been missed. The specific recommendations include:

2. PZJA to develop fishery specific objectives, performance measures and performance indicators for the fishery relating to target species and ecosystem impacts within 2 years. The performance of the fishery to be reviewed annually against these measures and the outcomes published.

3. PZJA, within 2 years, to review stock assessment process and existing TAC levels to ensure that methods used to estimate potential yield and TACs are sufficiently precautionary, and recognise the level of risk.

4. PZJA to continue to work with Torres Strait communities, fishers and processors to ensure that adequate and reliable data, appropriate to the scale of the fishery, are collected from all sectors to ensure sustainable management of the Torres Strait trochus resource. Initial priority should be given to the docket book system for commercial sectors of the fishery. Options for the collection of non-commercial and illegal take will be evaluated, taking account of outcomes of recent research and compliance programs, and appropriate options progressively developed and implemented to improve estimates of all removals used in stock assessments and management controls.

6. PZJA to investigate and, if necessary, progressively implement measures to minimise potential localised depletion in the fishery.

The primary reason for missing the above deadlines stems from difficulty to justify the use of management and research resources to the fishery in a competitive research and resource environment. The TSTF has a small GVP, ranging between approximately \$300,000 and \$42,000 over the last four years. High value Torres Strait fisheries such as Tropical Rock Lobster and Finfish have dominated management and research resources due to structural resource allocation changes which have included new Management Plans.



AFMA has committed increased resources for the TSTF since May 2007 with the employment of a Fisheries Officer dedicated to the management of Torres Strait Hand Collectable fisheries (TSHCF). Since May 2007 there has been the formation of the TSHCF Working Group, the creation of the first data summary of TSHCF and increased community consultation. In addition AFMA will seek further research funding to reduce uncertainty as to the stocks of TST.

7.3 Expected completion dates if actions running behind schedule

DEWHA recommendations 2, 3, 4 and 6 (see Section 7.2) will be included into the proposed Harvest Strategy for TSHCF. A draft Harvest Strategy will be presented to the TSHCWG in 2010. After consideration of the TSHCWG the Harvest Strategy will be sent to all relevant stakeholders for consideration by 2010. Once stakeholder considerations have been incorporated the draft proposal will be presented to the TSMAC and PZJA for consideration. The implementation of the Harvest Strategy will then be dependant on legislative processes including FMN and should be incorporated into management during 2010 or 2011. DEWHA will be notified of the progress of the proposed Harvest Strategy on a regular basis.

7.3 How the measures implemented to address the recommendations and/or conditions have improved management of the fishery

Measures to implement the DEWHA recommendations have improved management of the fishery by increasing stakeholder participation and data analysis of fisheries activity via the establishment of the TSHCWG and TSHC data summary.

8 Research and Monitoring

8.1 Results of any research completed relevant to the fishery, including how results will be incorporated into management of the fishery

No research has been conducted in the fishery

8.2 Description of monitoring programs used to gather information on the fishery (such as observer programs, long term monitoring programs etc) and results of these

Monitoring of the TSTF is currently undertaken by analyses of TS docket book data. The data is published by AFMA in an annual data summary provided to all stakeholders (Attachment A).

8.3 Results of any collaborative research undertaken for the fishery

None to date. AFMA will keep DEWHA informed of potential collaborative research.



References

Castell, L.L. 1997. Population studies of juvenile *Trochus niloticus* on a reef flat on the north-eastern Queensland coast, Australia. *Marine and Freshwater Research* 48: 211-217.

Crowe, T.P., G. Dobson & C.L. Lee. 2001. A novel method for tagging and recapturing animals in complex habitats and its use in research into stock enhancement of *Trochus niloticus*. *Aquaculture* 194: 383-391.


Sant, G. 1995. Marine invertebrates of the South Pacific an examination of the trade. TRAFFIC International, Cambridge, UK. 81 pp.

List of Attachments

- A. Torres Strait Trochus and Bêche-de-mere Fishery Data Summary 2005 and 2006. Logbook Program, Australian Fisheries Management Authority, Canberra 2007.
- B. Torres Strait Seafood buyers and processors docket book.



Attachment B: Torres Strait Seafood buyers and processors docket book.

 <p>Torres Strait Seafood Buyers and Processors Docket Book</p> <p>RECIPIENT CREATED TAX INVOICE</p>		FOR Name:..... Address:..... A.B.N.:.....Lic. No.				
Seller: JOHN SMITH		Book No.	Page No.			
Sellers ABN: 62 113 485 276	Sellers Licence No. 002158					
Sellers Address: THURSDAY ISLAND		Date: 01 JAN 05				
Fishing effort and boat details – TIB only						
Boat symbol: TRAWQ 005	No. of divers/fishers: 2					
Days fishing: 1	Area fished: 9 <small>From map (write no. of area most fished)</small>					
Methods used: (tick box)	<input type="checkbox"/> Hookah (MDH) <input checked="" type="checkbox"/> Handline (LHL) <input type="checkbox"/> Drop line (LDR) <input type="checkbox"/> Free dive (MDF) <input type="checkbox"/> Rod and reel (LRR) <input type="checkbox"/> Other—specify _____ <input checked="" type="checkbox"/> Lamp fishing (MLF) <input type="checkbox"/> Troll (LTL)					
Non TIB fishers & buyers of PNG & east coast product only						
Region Fished: (tick box) <input type="checkbox"/> Torres Strait <input type="checkbox"/> East Coast Queensland <input type="checkbox"/> Papua New Guinea						
Has the seller recorded their catches elsewhere?: (tick box) <input type="checkbox"/> YES (please indicate) → <input type="checkbox"/> TRL04 Logbook <input type="checkbox"/> No <input type="checkbox"/> TSF01 Logbook <input type="checkbox"/> Other →						
Details of catch being sold						
Species	Processing Code	Grade	Kg	\$/Kg	\$/Kg	Amount
TRL	L	—	5.2	30.00		156.00
CORAL TRAIT	GG	—	1.4	6.50		9.10
Completed by:	MICK JONES			Subtotal	165.10	
Signature:	<i>M Jones</i>			GST	—	
Payment received:				TOTAL	165.10	
Australian Fisheries Management Authority PO Box 376 Thursday Island QLD 4875		For assistance Phone: (07) 4069 1990 Fax: (07) 4069 1277		WHITE COPY: Fisher (seller) PINK COPY: Buyer (you) YELLOW COPY: AFMA		