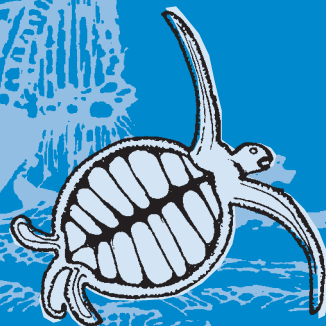
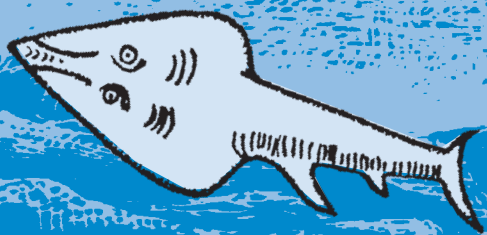


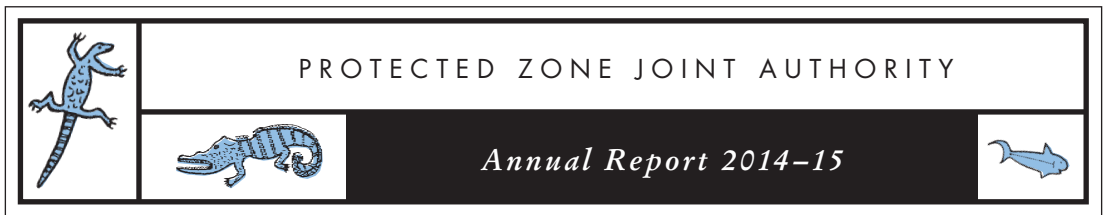
TORRES STRAIT PROTECTED ZONE JOINT AUTHORITY



Annual Report 2014–15



Torres Strait Fisheries Act 1984 (Commonwealth)



ANNUAL REPORT

1 JULY 2014 TO 30 JUNE 2015

PRESENTED TO PARLIAMENT PURSUANT TO SECTION 41 OF THE ACT

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1 INTRODUCTION

This, the twenty-seventh annual report of the Protected Zone Joint Authority (PZJA) describes PZJA activities during the year 1 July 2014 to 30 June 2015 and the condition of the fisheries in the Torres Strait Protected Zone (Figure 1).

The PZJA is responsible for management of commercial and traditional fishing in the Australian area of the Protected Zone and designated adjacent Torres Strait waters.

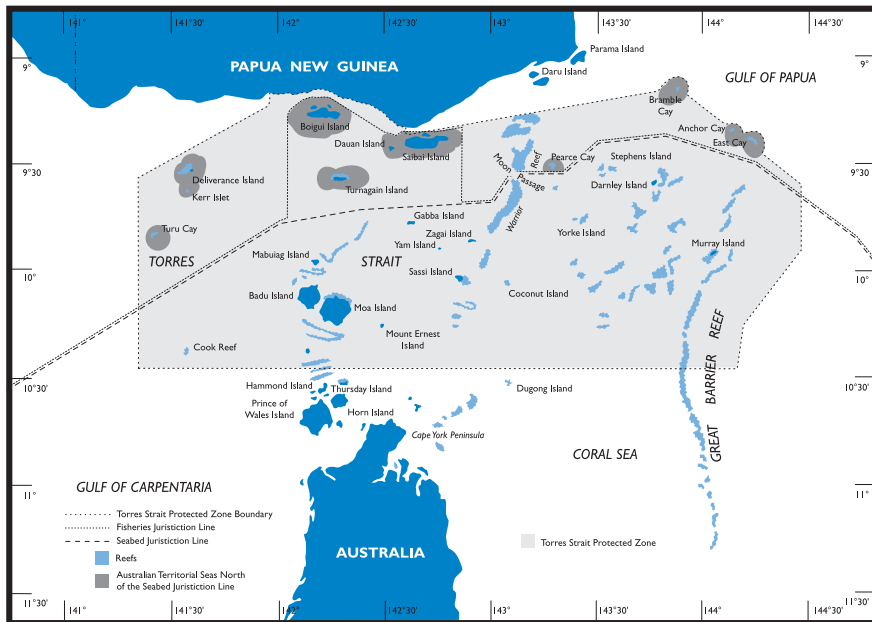


Figure 1. Area of the Torres Strait Protected Zone





2 BACKGROUND

THE TORRES STRAIT

The Torres Strait is located between the tip of Cape York Peninsula and Papua New Guinea. It consists of over one hundred islands and reefs which have evolved from four major origins: volcanic, alluvial, coral cays and flooded land bridges which were once part of the Great Dividing Range. Geographically, the islands are divided into inner, eastern, central, western, and top-western island groups. There are 18 communities located across 17 of the islands all others are uninhabited.

THE TORRES STRAIT TREATY

The *Treaty between Australia and the Independent State of Papua New Guinea concerning Sovereignty and Maritime Boundaries in the area between the two Countries, including the area known as the Torres Strait, and Related Matters* (the Torres Strait Treaty) was signed by both countries at Sydney, New South Wales, on 18 December 1978, it was ratified by Australia on 15 February 1985.

The Torres Strait Treaty establishes the Torres Strait Protected Zone and aims to protect the traditional way of life and livelihood of the traditional inhabitants of the Torres Strait and adjacent coastal areas of the two countries. Australia and Papua New Guinea are obligated to cooperate in the conservation, management and utilisation of the Protected Zone fisheries and both countries enjoy sovereign rights within the Protected Zone. This includes the right to a share of the commercial harvest of swimming fish and sedentary species on the respective sides of the agreed fisheries and seabed jurisdiction lines (see Figure 1).





TORRES STRAIT FISHERIES LEGISLATION

Management of Protected Zone fisheries In the Australian jurisdiction is subject to the *Torres Strait Fisheries Act 1984* (the Act). The Act came into force on 15 February 1985. The purpose of the Act is to give effect, in Australian law, to the fisheries elements of the Torres Strait Treaty. Section 8 of the Act specifies the objectives to be pursued in the management of Torres Strait fisheries. Section 8 states:

“In the administration of this Act, regard shall be had to the rights and obligations conferred on Australia by the Torres Strait Treaty.”

The Act also establishes the PZJA and outlines which agencies are able to administer day to day functions. The PZJA consists of the Commonwealth Minister, the Queensland Minister and the Chair of the Torres Strait Regional Authority. The members for the reporting period are outlined in Section 3 on page 7. The PZJA member agencies are the Australian Fisheries Management Authority, Fisheries Queensland, Torres Strait Regional Authority and the Australian Government Department of Agriculture. Under the Act these agencies can be provided the delegation to undertake day to day administrative decisions; currently the Australian Fisheries Management Authority and Fisheries Queensland have been provided with delegation.

In addition to the above Act, Protected Zone fisheries are subject to assessment under three parts of the *Environment Protection and Biodiversity Conservation Act 1999* for fisheries where:

- a formal management plan or regime is to be determined (part 10)
- there are interactions with listed threatened species and ecological communities (part 13)
- fisheries product is to be exported (part 13A).





3 THE PROTECTED ZONE JOINT AUTHORITY

The PZJA, established under the Act, is responsible for the management of PZJA fisheries. Its members comprise the Commonwealth and Queensland Ministers responsible for fisheries, and the Chair of the Torres Strait Regional Authority. During 2014–15 the members of the PZJA were:

- Senator the Hon. Richard Colbeck, Australian Government Parliamentary Secretary to the Minister for Agriculture
- The Hon. Dr John McVeigh, Queensland Government Minister for Agriculture, Fisheries and Forestry (to January 2015)
- The Hon. Bill Byrne, Queensland Government Minister for Agriculture and Fisheries and Minister for Sport and Racing (from February 2015)
- Mr Joseph Elu AO, Chair of the Torres Strait Regional Authority.

The Australian Government Minister is the Chair of the PZJA.

The PZJA made a number of decisions during the reporting period; these are detailed at Annexe A on page 50.

ROLES AND RESPONSIBILITIES

The PZJA is responsible for monitoring the condition of the designated fisheries and for the formulation of policies and plans for their management. The PZJA has regard to the rights and obligations conferred on Australia by the Torres Strait Treaty, in particular the protection of the traditional way of life and livelihood of the traditional inhabitants, including the capacity to engage in traditional fishing.

Prior to 1999, the PZJA managed the following designated fisheries in accordance with Commonwealth law in the Australian component of the Protected Zone:

- traditional fishing
- those fisheries which Australia and Papua New Guinea have agreed to jointly manage in the Protected Zone under Article 22 of the Torres Strait Treaty including prawn, Spanish mackerel, pearl shell, tropical rock lobster, dugong and turtle
- the barramundi fishery in the territorial waters adjacent to the six Australian islands near the Papua New Guinea coastline: Saibai, Boigu, Moimi, Kaumag, Aubusi and Dauan.





In October 1996 the PZJA agreed that all commercial fishing in Torres Strait would come under PZJA management. Arrangements were introduced on 1 April 1999 to include the former Queensland managed commercial fisheries.

The following fisheries were incorporated:

- finfish (including barramundi)
- crab
- trochus
- bêche-de-mer (sea cucumber).

Details on the management arrangements for each of the fisheries are provided in Section 5 (fisheries) of this report.

In December 2005, the then Commonwealth Minister for Fisheries, Forestry and Conservation issued a formal direction to the Australian Fisheries Management Authority stating that:

“The Australian government considers that decisive action is needed immediately to halt overfishing and to create the conditions that will give overfished stocks a chance to recover to an acceptable level in the near future.”

A key element in implementing the Minister’s directive is the development and application of a harvest strategy framework which sets ‘goalposts’ for managing catches by setting agreed target and limit reference points and clear decision rules for each species.

The PZJA has developed a long term harvest strategies for both the Torres Strait prawn and rock lobster fisheries with a range of rules that control the intensity of fishing activity according to the biological conditions of the fishery. The harvest control rules are in line with the *Commonwealth Fisheries Harvest Strategy Policy and Guidelines*.

Recreational fishing, charter fishing and aquaculture are managed by Queensland under Queensland law. Information on these activities can be obtained from Fisheries Queensland.

CONSULTATIVE STRUCTURE

To assist in the management of the PZJA fisheries, the PZJA has established a consultative process including a structure of advisory bodies (Figure 2). The consultative structure includes the following:

- Australian traditional inhabitant fishers (commercial and traditional fishing)





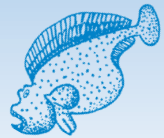
- non-traditional inhabitant commercial fishers
- Australian and Queensland government officials
- other technical experts.

The PZJA is advised by several forums on issues associated with Protected Zone fisheries; these are the PZJA Standing Committee, management advisory committees, the Torres Strait Scientific Advisory Committee, working groups, and resource assessment groups. Whilst these committees and groups are the main avenue for the PZJA to obtain advice and information, the PZJA may also source advice and views from others with relevant expertise or interest. These include PZJA agencies and other government agencies, independent consultants, operators in fisheries more broadly and representatives of the broader community.

Consultation and communication can be difficult across all islands of the Torres Strait, but is important for the effective management of the region's fisheries. Consultative committees are therefore complemented by meetings between fisheries officers and fishers in communities around the Torres Strait. These meetings are occasionally supplemented by programs broadcast on radio and articles/advertisements in newspapers.

The PZJA *Fisheries Management Paper No. 1* sets out the policy for the membership, operation, administration and key decision making processes of the advisory bodies (other than the PZJA Standing Committee). This paper is on the PZJA website at: www.pzja.gov.au/wp-content/uploads/2011/06/fisheries-management-paper-no1.pdf. The dates on which the groups met during the reporting period are set out in Annexe B on page 55.

The process for nominating traditional inhabitant fishing representatives on consultative fora has changed. In the past, representatives were nominated by the Torres Strait Regional Authority. A workshop was convened by The Australian Fisheries Management Authority on 24 March 2015 during which traditional inhabitants directly nominated their own representatives.



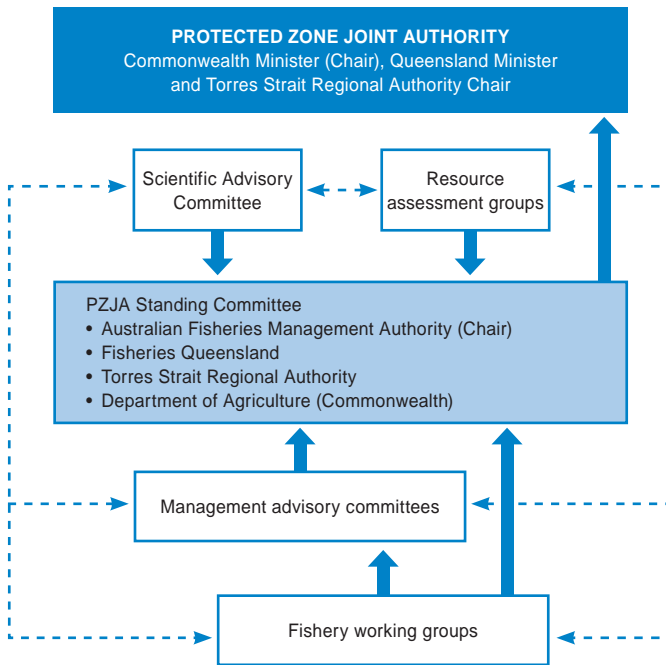


Figure 2. The consultative structure of the Torres Strait Protected Zone Joint Authority (Solid arrows and thin arrows indicate primary and secondary lines of communication respectively)

The PZJA Standing Committee

The PZJA Standing Committee consists of senior representatives from the PZJA member agencies (Table 1). Its function is to provide strategic and operational recommendations to the PZJA on the management of the fisheries in accordance with the PZJA's statutory obligations and to oversee the implementation of the PZJA's agreed policy commitments.





Table 1: The Protected Zone Joint Authority Standing Committee

Representation	Member
Australian Fisheries Management Authority (Chair)	Chief Executive Officer
Fisheries Queensland	Deputy Director-General, Fisheries
Torres Strait Regional Authority	Chief Executive Officer
Department of Agriculture	General Manager, Fisheries

Management advisory committees

Management advisory committees are a main source of advice on fishery-specific management issues which support the PZJA decision making process. In this forum fishery issues are discussed, problems identified and possible solutions developed. These deliberations determine the recommendations that will be made to the PZJA.

More specifically the committees advise on matters relating to fishery objectives, harvest strategies, policies and management arrangements in pursuit of PZJA objectives.

There are two management advisory committees; the Torres Strait Prawn Management Advisory Committee and the Torres Strait Fisheries Management Advisory Committee (for all fisheries other than prawn).

The Torres Strait Scientific Advisory Committee

The Torres Strait Scientific Advisory Committee's main role is to advise on the strategic direction, priorities and funding for research undertaken by the Australian Fisheries Management Authority across all PZJA fisheries in the Protected Zone. This advice gives consideration to meeting research gaps in line with the objectives of the *Torres Strait Fisheries Act 1984*.

The committee normally provides a review process for research conducted by research providers to ensure that milestones are met and that the research outcomes represent good value for money. The committee may also be called upon to make its own assessments of fisheries data and comment on stock assessment results. The committee may directly engage with researchers to address knowledge gaps.



Working Groups

Working groups are established to assist and provide recommendations to all PZJA forums. Ordinarily working groups deal with the fishery specific issues, including input to research gaps and, operational issues and compliance issues.

It is ensured that these groups are an appropriate blend of knowledge, expertise, and are capable of operating in a non-biased manner.

There were three working groups during the reporting period, these were the:

- Torres Strait Finfish Working Group
- Torres Strait Tropical Rock Lobster Working Group
- Torres Strait Hand Collectables Working Group

Resource assessment groups

The main role of resource assessment groups is to provide advice on stock assessment related matters that address biological, economic and social/cultural factors affecting the fishery. These matters include; the status of fish stocks, sub-stocks, species (target and non-target species) and on the impact of fishing on the marine environment.

There was one resource assessment group during the reporting period; the Torres Strait Tropical Rock Lobster Resource Assessment Group.





4 COOPERATION WITH PAPUA NEW GUINEA

The Torres Strait Treaty requires Australia and Papua New Guinea to cooperate and consult in the conservation, management and optimum utilisation of Protected Zone commercial fisheries (Article 21) and give any necessary protection to traditional fisheries (Article 20).

The Torres Strait Treaty also enables subsidiary conservation and management arrangements for particular commercial fisheries where either country considers it necessary (Article 22). The Torres Strait Treaty also defines the catch sharing arrangements for these fisheries (Article 23). The fisheries which are subject to joint management are the:

- Torres Strait Prawn Fishery
- Torres Strait Tropical Rock Lobster Fishery
- Spanish mackerel sector of the Torres Strait Finfish Fishery
- Torres Strait Pearl Shell Fishery
- Torres Strait turtle and dugong traditional subsistence fisheries.

The catch-sharing arrangements for 2015 between the two countries were agreed at the Australia–Papua New Guinea fisheries bilateral meeting held in Cairns, Australia on 28 October 2014. The catch-sharing arrangements for the 2015 season were:

- Prawn, Spanish mackerel and pearl shell fisheries—both parties agreed that catch-sharing arrangements were not required
- Tropical rock lobster fishery—both parties agreed for Papua New Guinean fishers to access the Australian jurisdiction pending the finalisation of the stock surveys and total allowable catch recommendations and that reciprocal arrangements can also be put in place if Australian fishers take up potential catch-sharing opportunities.

OUTSIDE BUT NEAR AREAS

Fish stocks can extend across jurisdictional boundaries. The Torres Strait Treaty provides for the two countries to agree to management and conservation measures in areas extending beyond the Protected Zone boundaries. Additionally, the *Torres Strait Fisheries Act 1984*, and its Papua New Guinean equivalent—the *Fisheries Management Act 1998*—also allow Australia and Papua New Guinea to extend their Protected Zone management arrangements into “outside but near areas” to the Protected Zone.

One of the management and conservation measures in place is a prohibition on the incidental taking and carrying of tropical rock lobster by prawn trawlers in the prawn fishery and in certain waters outside but near the Protected Zone. This measure has been in place since 1988.





5 FISHERIES

Traditional inhabitants of the Torres Strait have always exploited a diverse range of marine animals for subsistence and use in cultural activities including dugong, turtle, tropical rock lobster, finfish, shellfish, crab, and octopus. As such sea-based resources are important to Torres Strait Islanders and Aboriginals.

The most important are dugong, green turtle and a variety of finfish and shell fish. The relative importance of each group varies between island communities. With respect to commercial and artisanal fishing activities, fishery resources such as tropical rock lobster, Spanish mackerel, reef fish and pearl shell remain important to these communities.

Generally, men fish from boats away from the home island, and women and children fish on fringing reefs around the island. The most common subsistence fishing activities undertaken by traditional inhabitants include hand lining for finfish and diving for many species including tropical rock lobster. Other means of gathering seafood include:

- spearing
- reef gleaning (gathering of benthic macro invertebrates in intertidal areas)
- cast-netting
- traditional hunting for dugong and turtle
- gill netting
- trolling from dinghies
- crabbing
- seining
- jigging for squid
- hand collection for species such as trochus
- trading with Papua New Guinea.

There were no changes to formal management arrangements for traditional fishing activities during the reporting period. Management restrictions on traditional fishing relate to the hunting of dugong and turtle, and on the collection of tropical rock lobster and sea cucumber (bêche-de-mer).

Commercial fishing is the most important economic activity in the Protected Zone for traditional inhabitants; it provides significant opportunities for financial independence of traditional inhabitant fishers. A priority of the PZJA is to enhance opportunities for traditional inhabitants through participation in all sectors of the fishing industry.





The PZJA is responsible for the management of all commercial fisheries in the Protected Zone. Whilst both traditional and non-traditional inhabitants participate in commercial fisheries, expansion in the number of licenced fishers has been reserved for Torres Strait traditional inhabitants. For a non-traditional inhabitant to gain access to a fishery they can only purchase or lease an existing Torres Strait Fishing Boat Licence or lease a Torres Strait Sunset Fishing Boat Licence. An exception to this is the prawn fishery where there are only Torres Strait Fishing Boat Licences which can be owned by either traditional or non-traditional inhabitants. Further information about licencing for fisheries in the Australian jurisdiction of the Protected Zone can be found in the licencing section of this report (Section 6 on page 38).

The fisheries managed under the *Torres Strait Fisheries Act 1984*, in accordance with the Act's objectives, are the:

- Torres Strait Prawn Fishery
- Torres Strait Tropical Rock Lobster Fishery
- Torres Strait Finfish Fishery
- Torres Strait Pearl Shell Fishery
- Torres Strait Crab Fishery
- Torres Strait Trochus Fishery
- Torres Strait Bêche-de-mer (Sea Cucumber) Fishery
- Torres Strait dugong and turtle fisheries



TORRES STRAIT PRAWN FISHERY

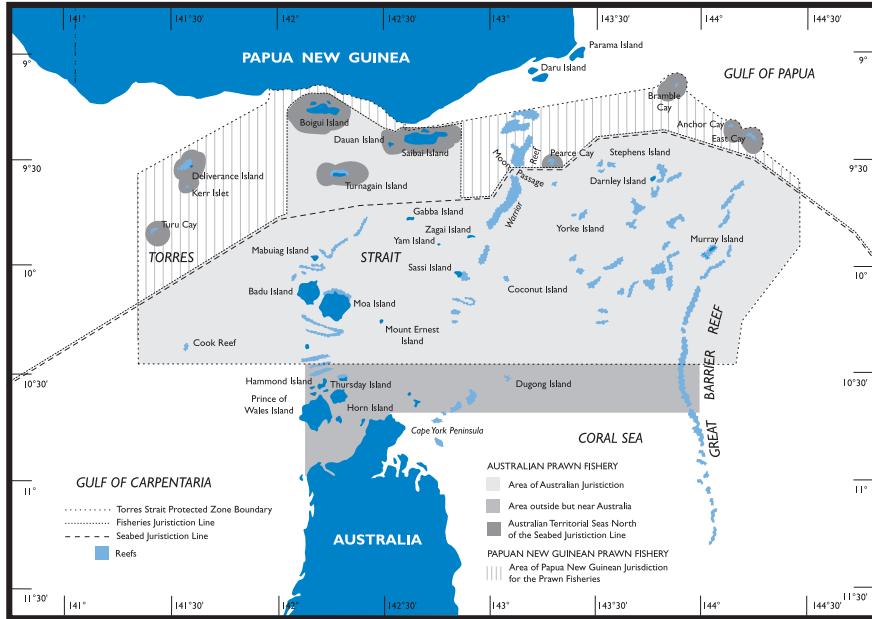


Figure 3. Area of the Torres Strait Prawn Fishery

Description of the fishery

The Torres Strait Prawn Fishery (Figure 3) is one of the more valuable commercial fisheries in the Torres Strait. The key species for the fishery are brown tiger prawns and blue endeavour prawns. Species that are also taken as by-product include red spot king prawns, Moreton Bay bugs, scallops and squid. This fishery is subject to management and catch sharing arrangements under the Torres Strait Treaty.

The prawn and bug catch for the fishery in the 2014 season are detailed in Table 2. The real value of the fishery for 2013–14 was \$5.8 million.





*Table 2. Prawn and bug catches in the prawn fishery for the 2014 season
(Source: Logbook data)*

Species	Catch (tonnes)
Blue endeavour prawns	75.8
Brown tiger prawns	314.5
King prawns	2.6
Other prawns	0.5
Total prawn	393.4
Bugs	18.0
Total	411.4

The prawn fishery is the only cost recovered fishery in the Torres Strait. Fishers are charged a levy to recover the certain costs of management.

To ensure the amount of prawns caught each year is sustainable the total number of fishing days is capped and the length of boats and the size of nets that fishers can use are restricted through parameters outlined in the harvest strategy.

Fishers use the otter trawl method where two, three or four trawl nets are towed behind the fishing vessel. Fishing occurs in the eastern part of the Torres Strait at night and only during the fishing season (from 1 March to 1 December).

Every year Torres Strait prawn fishery handbooks are produced as a guide for fishers on the management arrangements. These handbooks are available on the PZJA website (www.pzja.gov.au).

A prawn fishery bycatch action plan has been in place since 2005. The action plan aims to:

- reduce the catch of large animals such as turtles and stingrays
- substantially reduce the ratio of bycatch to prawns.

To achieve this, the main strategies include:

- modifying fishing gear, including mandatory use of turtle excluder and bycatch reduction devices
- monitoring bycatch
- making the information available to fishers and the community.

A new bycatch and discard workplan is being developed that will be implemented in 2015.



A harvest strategy for the fishery was approved by the PZJA on 8 July 2011. The strategy provides a transparent management framework to set the annual total allowable effort in the fishery to achieve the maximum sustainable take of prawns. Under these rules the annual effort has been set at 9 200 fishing days in the Australian jurisdiction of the Protected Zone. This is shared with Papua New Guinea through catch sharing arrangements under the Torres Strait Treaty: 75 per cent of the effort is allocated to Australian licence holders (6 867 fishing days) and 25 per cent is reserved for use by Papua New Guinea (2 333 fishing days).

Condition of the fishery

For 2014, the Australian Bureau of Agricultural and Resource Economics and Sciences evaluated the status of the brown tiger and blue endeavour prawns in the fishery as ‘not overfished’ and ‘not subject to overfishing’ (Patterson et al. 2015).

Prawn stocks are abundant and operators are fishing well below the allocated fishing days. The number of fishing days used by Australian fishers was 1 954 in 2014 (source: logbook data). The Papua New Guinean fishers did not use their allocation during the reporting period.

The amount of prawns caught in the fishery has declined since 1999 (Figure 4). This decline is a direct result of decreasing fishing activity.

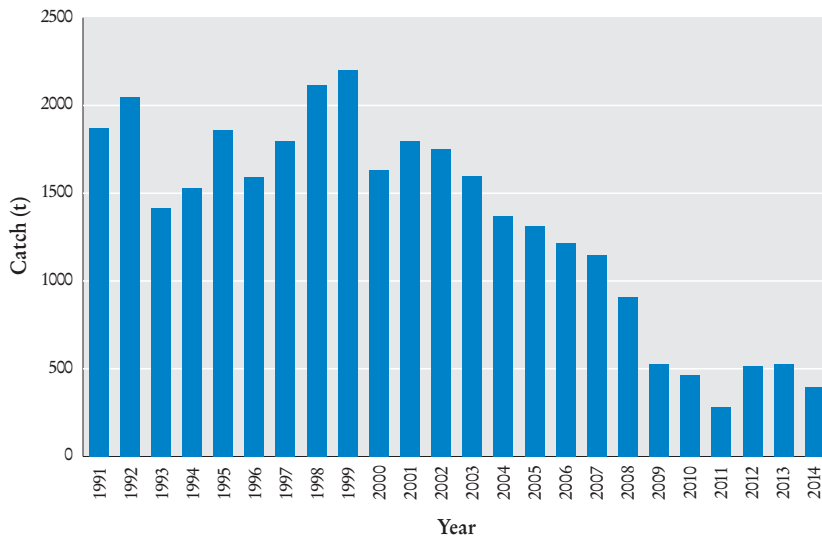


Figure 4. Annual catches of all prawn species in the prawn fishery 1989 to 2014, data is presented by fishing season—1 March to 1 December (Source: Logbook data 1989 to 2014)





Given the significant decline of effort in the fishery, PZJA agencies have been investigating ways to stimulate effort back to more economically productive levels. A project titled *Improving Torres Strait Prawn Fishery Profitability and the Flow of Benefits to Island Communities* was undertaken during 2014 and 2015 by an independent consultant. The project identified a number of options that may improve viability including changes to boat and gear restrictions and season dates. The project also identified a number of avenues for improving flow of benefits to communities, noting the benefits are very limited unless the fisheries profitability improves.

Strategic assessment—update

The prawn fishery was re-accredited under the Environment Protection and Biodiversity Conservation Act as a wildlife trade operation in 2013, valid until 18 March 2016. This accreditation is subject to the conditions and recommendations that were developed by the Department of the Environment.





TORRES STRAIT TROPICAL ROCK LOBSTER FISHERY

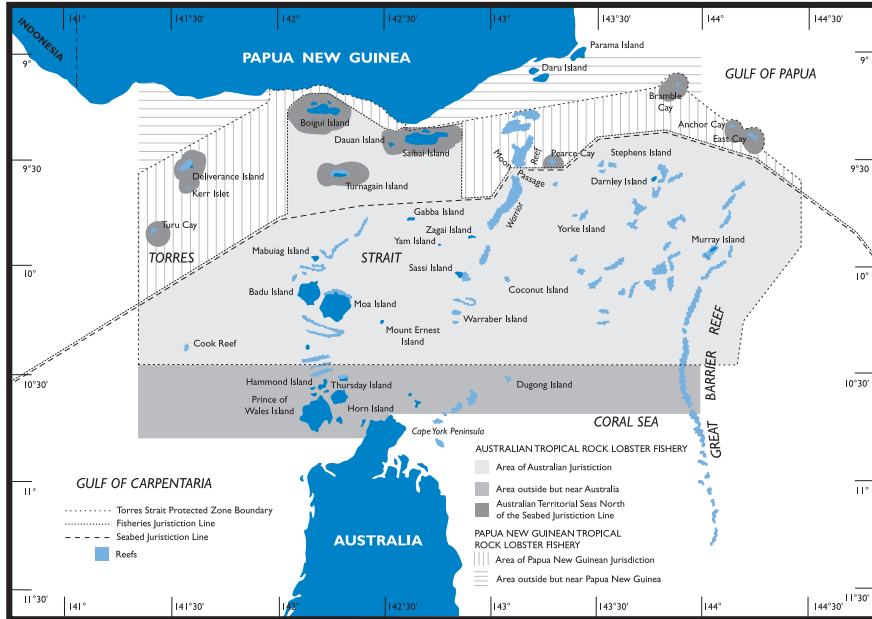


Figure 5. Area of the Torres Strait Tropical Rock Lobster Fishery

Description of the fishery

The Torres Strait Tropical Rock Lobster Fishery (Figure 5) is the most valuable commercial fishery in the Torres Strait. Only one species is targeted, the ornate tropical rock lobster and is an important species to both traditional and non-traditional inhabitants. This fishery is subject to catch sharing arrangements under the Torres Strait Treaty.

Divers work from dinghies to free dive on shallow reef tops or use hookah equipment (surface supplied air) to dive deeper areas of the Torres Strait. They collect the lobster by hand, short hand spear or loops; scoop nets are also used during night collection activities. Most fishing occurs during neap tides when currents ease and underwater visibility improves.

The commercial fishing season for lobster is from 1 December through to 30 September the following year; and the use of hookah gear is permitted from 1 February. Most lobster is collected between March and August.



Management arrangements

The management arrangements as outlined in *Fisheries Management Notice No. 9* were made in August 2011. The arrangements include:

- limiting the method of taking of lobster to either hand or with the use of a hand held implement, such as a spear or scoop net
- seasonal closures—complete closure from October to November (inclusive) and hookah equipment closure from October to January (inclusive)
- size limits for all commercial and recreational take—minimum tail size of 115 mm or minimum carapace length of 90 mm
- carrying limits for traditional fishers—three lobsters per person or six per boat if there is more than one person in the boat
- a prohibition on the processing or carrying of lobster meat that has been removed from any part of the lobster on any boat.

In addition to the above-mentioned management arrangements, expansion in the fishery is limited to traditional inhabitants. Aside from limited licence numbers, there are a range of provisions in place to prevent the expansion of the non-traditional inhabitant sector including:

- a boat replacement policy which aims to control fishing capacity by preventing the introduction of larger more efficient boats
- a ban on trawlers taking lobster to prevent pressure on the lobster resource from the prawn trawling fleet.



Since 2003, a number of interim measures have been implemented annually to manage effort in the non-traditional inhabitant sector. During the reporting period interim measures included:

- a 30 per cent reduction in the number of months that tenders were allowed to operate for licence holders that have two or more tenders associated with a primary vessel. In practice, this meant that licence holders could work some of their tenders for the entire season but others ceased operation at various times
- a prohibition on the use of hookah equipment three days before, on, and three days after either the full or new moon each month from February to September.

Condition of the fishery

For the reporting period the Australian Bureau of Agricultural and Resource Economics and Sciences evaluated the status of the lobster stocks in the Protected Zone as ‘not overfished’ and ‘not subject to overfishing’ (Patterson et al. 2015).

The notional catch limits were set for the fishery based on mid-season surveys and harvest control rules were recommended by the resource assessment group. The level of applied across fishers in the fishery and was also allocated to Papua New Guinea fishers as per the catch sharing arrangements under the Torres Strait Treaty. Details regarding the fishery of catch limits, actual catch and value are outlined in Table 3 and a graph showing the annual level of catch in the fishery since 1989 is at Figure 6.



Table 3: Statistics for the tropical rock lobster fishery in 2014

	Australia	Papua New Guinea	Total
Catch limit (tonne) ¹ (TVH/TIB) ²	416 (181/235)	200	616
Catch (tonne) (TVH/TIB)	401 (272/129)	255	656
Value ³	\$20.9 million		

1 The fishery is currently managed through restrictions on effort, as management is moving to catch limits notional catch limits are set.

2 TVH—commercial fishing boat licence, TIB—traditional inhabitant commercial boat licence.

3 Value is real-value statistics (as per the ABARES report—Patterson et al. 2015) is in Australian dollars and by financial year (2013–14).

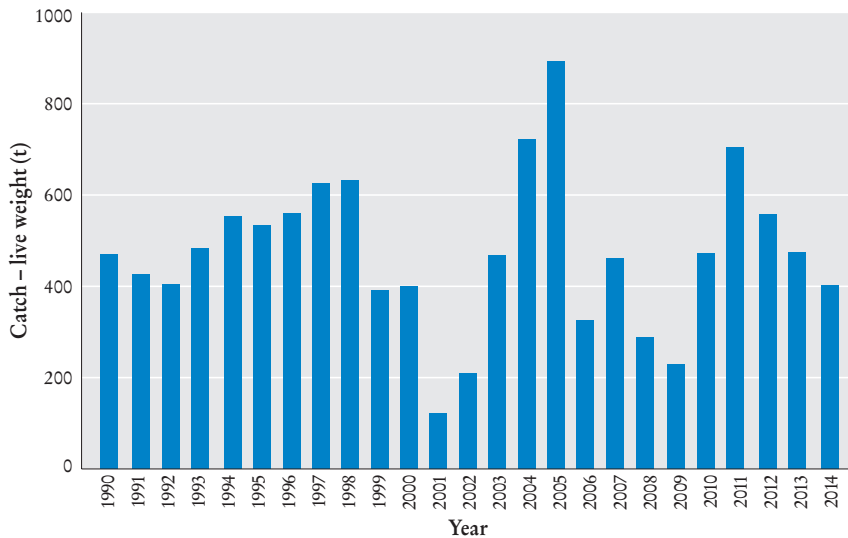


Figure 6. Annual catch of tropical rock lobster 1989 to 2014 in the Australian Jurisdiction (source: Logbook data 1989 to 2014, docket book data 2004 to 2014 and other records)

Strategic assessment—update

The fishery was reaccredited as an approved wildlife trade operation on 7 May 2014 until 4 May 2017 under the Environment Protection and Biodiversity Conservation Act. This accreditation is subject to the conditions and recommendations that were developed by the Department of the Environment.



TORRES STRAIT FINFISH FISHERY

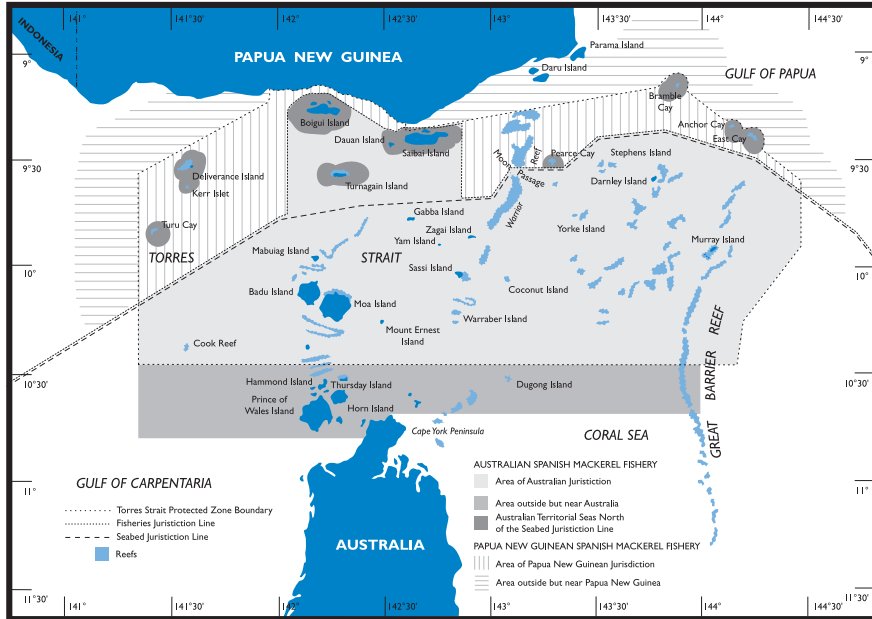


Figure 7. Area of the Spanish mackerel fishery

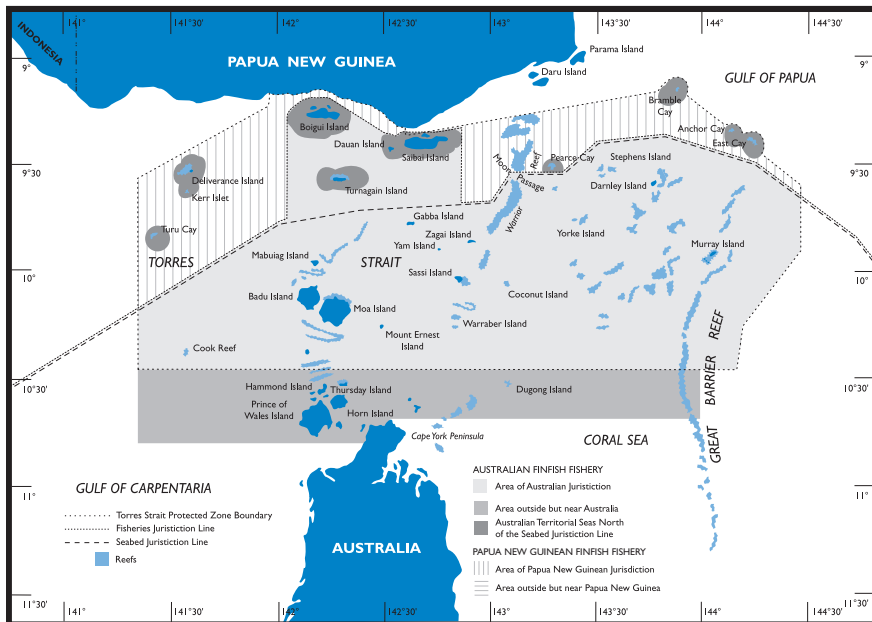


Figure 8. Area of the reef line fishery





Description of the fishery

The Torres Strait Finfish Fishery is a multi-species commercial fishery where a range of target and by-product species are harvested. Several fishing methods are used in the fishery including trolling and hand lining. The use of nets has been banned in the Protected Zone and the outside but near area.

The finfish fishery comprises two components: the Spanish mackerel fishery (Figure 7) and the reef line fishery (Figure 8). The Spanish mackerel fishery is subject to catch sharing arrangements under the Torres Strait Treaty. Both the Spanish mackerel and reef line fisheries operate in the eastern Torres Strait. The western Torres Strait is closed to fishing.

The target species in the Spanish mackerel fishery is the narrow-barred Spanish mackerel. Other species caught in the fishery include school mackerel, grey mackerel, spotted mackerel, and shark mackerel. Mackerel are fished by trolling baits and lures, or on handlines, generally from dories/dinghies operating either to a primary vessel or alone.

Reef line fishers target the coral trout species which have the greatest value. Also caught are small numbers of medium value species including barramundi cod, mixed reef fish in the *Lutjanus* and *Lethrinus* genus's, and several species of rock cod. These species are fished on handlines generally from dories/dinghies operating either to a primary vessel or alone.

All commercial finfish catch entitlements are held by Australian traditional inhabitants. However, non-traditional inhabitant fishers can lease sunset licences—with catch limits for Spanish mackerel and coral trout—and 40 per cent of the Spanish mackerel entitlements are made available to Papua New Guinean fishers (in accordance with catch sharing arrangements under the Torres Strait Treaty).

Whilst mackerel and reef line species are commercially targeted by a small number of traditional inhabitants a large number of traditional inhabitants fish opportunistically.

Catch reporting by the traditional inhabitant sector through the docket book system is voluntary. As such the catch data for this sector is an incomplete representation of finfish harvest. The quantity of finfish taken for traditional purposes is unknown. Anecdotally, only a small proportion of the traditional inhabitant fishers with finfish-endorsed licences participated in the finfish fishery⁴.

⁴ This is based on data collected from fish buyers; noting that catch reporting by the traditional inhabitant sector is voluntary therefore estimated from Torres Strait docketbooks completed by processors/buyers.





The level of traditional inhabitant commercial fishing in this fishery may increase due to the high value of the target species and the important economic development opportunity this fishery provides.

The real value of the fishery was \$1.45 million in 2013–14. The catch and catch limits for the fishery are provided in Table 4 and Figures 9 and 10.

Table 4: Total allowable catch and catch for the Torres Strait Finfish Fishery in 2013–14 (Source: Logbook data)

Species	Catch limit	Catch (tonnes)
Spanish mackerel	112.7	105.4
Coral trout	135.0	30.9
Other species	n/a	2.1
Total	247.7	138.4

The traditional inhabitant sector holds 100 per cent of the Australian allocation of commercial finfish resources in the Protected Zone. The catch rates of Spanish mackerel and coral trout have been relatively low since 2007. Annual catches of Spanish mackerel and coral trout declined during the lead up to, and implementation of, the 2008 buyout of transferable licences in the finfish fishery.

Since the buyout, effort by non-traditional inhabitant fishers has reduced due to the limited entry through leasing sunset licences with additional conditions including large exclusion zones around eastern Torres Strait communities. The exclusion zones are now set aside for the traditional inhabitant sector and contain productive fishing grounds that were previously accessible to the non-traditional inhabitant fishers. Prior to the buyout the catch of finfish was variable, with annual catches of up to 400 tonne. Figures 9 and 10 show the trend in fishing catches since 2009–10 where all catches have been below 200 tonne in total.



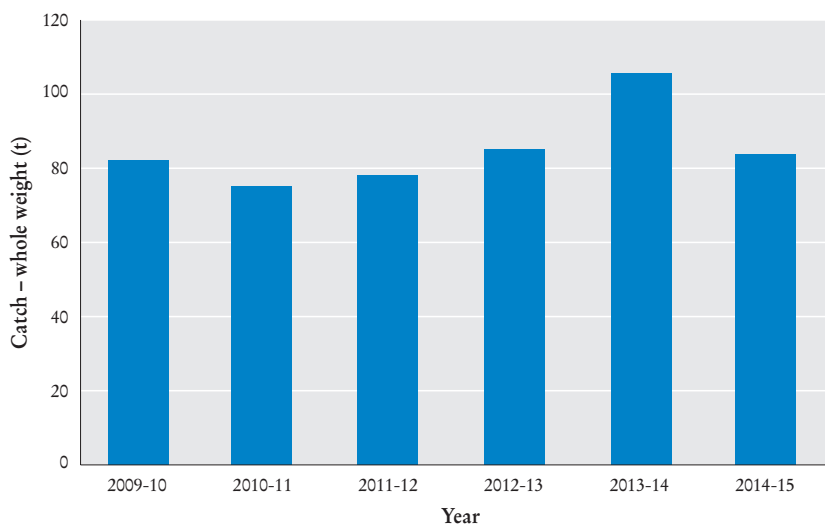


Figure 9. Catch history for Spanish mackerel in the Torres Strait Finfish Fishery (Source: logbook and docket book data, and other records)

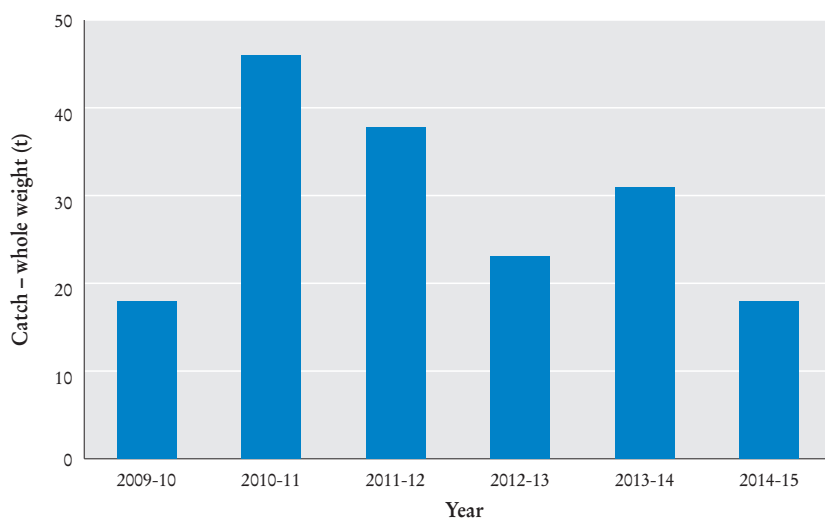


Figure 10. Catch history for coral trout in the Torres Strait Finfish Fishery (Source: logbook data, docket book data and other records)

Management arrangements

The *Torres Strait Finfish Fishery Management Plan* was introduced in 2013.



Both components of the fishery are subject to additional requirements under separate fishery management notices which define the allowable activities, gear types and restrictions. The Spanish mackerel fishery species are managed in accordance with *Fisheries Management Notice No. 79* and reef line fishery species with *Fisheries Management Notice No. 8*.

Management controls for the harvest of finfish species include:

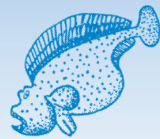
- gear restrictions
- minimum and maximum size limits
- no-take species
- restriction on shark finning
- temporal and spatial closures.

Condition of the fishery

During the reporting period the Australian Bureau of Agricultural and Resource Economics and Sciences evaluated the status of the Spanish mackerel stocks and coral trout species in the Protected Zone as ‘not overfished’ and ‘not subject to overfishing’ (Patterson et al. 2015).

Strategic assessment—update

The fishery was recredited as a wildlife trade operation under the Environment Protection and Biodiversity Conservation Act in July 2013. The then Australian Government Department of Sustainability, Environment, Water, Population and Communities provided a number of accreditation recommendations to improve the sustainability of the fishery. The export accreditation is valid until 26 May 2016 at which time the fishery will be re-assessed.





TORRES STRAIT PEARL SHELL FISHERY

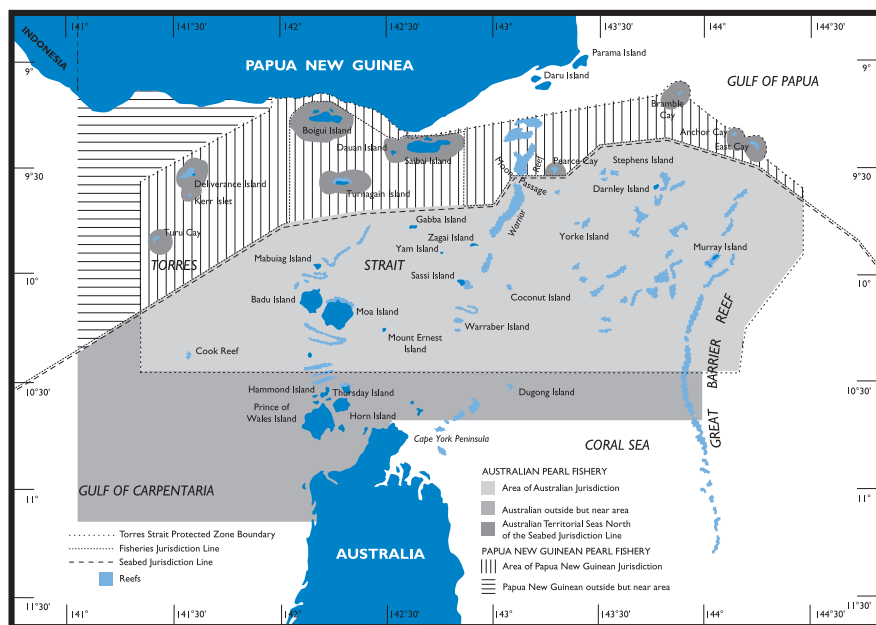


Figure 11. Area of the Torres Strait Pearl Shell Fishery

Description of the fishery

In the Torres Strait Pearl Shell Fishery (Figure 11) wild pearl shell is collected mostly by divers using hookah equipment (surface supplied air). The gold-lipped pearl shell is the main species, although at least another six species, including the black-lipped pearl shell and the winged pearl oyster are also collected.

Pearl shell is collected through the months of October to March with only a few licence holders that specialise in collecting pearl shell. However, a number of licence holders also have lobster endorsements and collect pearl shell whilst fishing for lobster.

Pearl shell is collected live for pearl culture farms. Aquaculture farming of pearl shell in the Torres Strait is regulated and managed by Fisheries Queensland.

Management arrangements

Expansion of licence numbers in the pearl shell fishery is limited to traditional inhabitants in order to maximise their opportunities. Additionally, provisions applying to the non-traditional inhabitants operating in the fishery include



strict boat replacement policies and the linking of tender boats with specific primary boats.

Current management regulations require a licence for take of pearl shell in the pearl shell fishery. Divers must adhere to size limits between 130 mm minimum and 230 mm maximum for gold-lipped pearl oyster, and over 90 mm for black-lipped pearl oyster. There is a ban on the taking of shell by any method other than collecting by hand.

A review of the management regulations was completed in late 2014. The review was completed to assess the viability of a proposal to reduce the size limits for collecting pearl shell to between 100 mm minimum and 230 mm maximum for gold-lipped pearl oyster. As a result the introduction of developmental permits which will allow the harvest of a limited number of gold-lipped pearl shell between 100 and 130 mm has been approved by the PZJA. The harvest of smaller shell presents an opportunity to reinvigorate the fishery in the short term, noting that there is a significant amount of uncertainty regarding stock levels.

Condition of the fishery

The fishery was last surveyed in 1989. Based on past surveys, the abundance of pearl shell on the main fishing grounds is low, and the stock status remains uncertain. It should be noted that there has been insignificant amounts of pearl shell harvested since at least 2006.

Strategic Assessment—update

The pearl shell fishery has not undergone a strategic assessment due to insignificant pearl shell harvesting. However, depending on the level of activity in the fishery it may in the future.





TORRES STRAIT CRAB FISHERY

Description of the fishery

In the Torres Strait Crab Fishery mud crabs and small quantities of blue swimmer crab are caught. Crabs are generally captured by hand or using scoop nets.

All fishery participants are traditional inhabitants. The level of participation in the commercial fishery is low and restricted mainly to Saibai and Boigu islands where there are large areas of crab habitat.

Management arrangements

A number of management arrangements (under *Torres Strait Fisheries Management Notice No. 50*) apply including:

- a prohibition on the take or possession of female crabs and spanner crabs
- a limit of 50 prescribed crab apparatus per operator
- no vessels greater than 14 m in length
- a minimum carapace length of 150 mm.

Condition of the fishery

No commercial activity was recorded during the reporting period. The status of crab stocks in the Protected Zone is uncertain due to the lack of catch data.

Strategic assessment—update

The crab fishery has not been strategically assessed under the Environment Protection and Biodiversity Conservation Act. It may in the future, depending on activity in the fishery.





TORRES STRAIT TROCHUS FISHERY

Description of the fishery

The Torres Strait Trochus Fishery is a small, commercial and traditional fishery for a single-species. The marine snail ‘trochus’ is generally collected opportunistically while fishing for other marine animals. Trochus is usually taken by free diving with fishers generally operating from dinghies with two or three crew. Reef top collection of trochus is also possible at low tide.

Access to the fishery is reserved for traditional inhabitants of the Torres Strait. Between 1920 and 1950, and more recently during the 1980s, the fishery was an important source of income for some traditional inhabitants, especially in the central and eastern Torres Strait communities.

The fishery is characterised, like trochus fisheries elsewhere, by fluctuating fishing activity related to the economic value of the shell. Trochus shell is sold when the shell is in demand for items such as buttons for clothing and relies upon fashion trends. Since the mid 1980 the demand for shell has peaked three times; in the late eighties, the mid to late nineties and from 2005 to 2006. Trochus meat is often consumed by fishers’ families or other members of the community and there is interest in finding a viable market for the meat as well as the shells.

Management arrangements

Participation in the trochus fishery is limited to traditional inhabitants. The take of trochus is restricted to hand collection—the use of underwater breathing apparatus is not permitted.

The size of trochus collected during commercial fishing must be between 80 mm and 125 mm. The catch limit for the fishery was 150 tonnes annually for the reporting period.

Condition of the fishery

The Australian Bureau of Agricultural and Resource Economics and Sciences classified trochus in the Protected Zone as not subject to overfishing, but acknowledged uncertainty about the biomass of the stock (Patterson et al. 2015).

The reason for the uncertainty is because of the fishery’s small size and the sporadic nature of market demand. This has resulted in a lack of fishery data and as such a stock assessment of the fishery has not been possible.



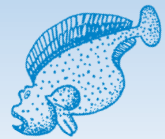


Whilst there have been between 39 and 80 traditional inhabitant boat licences over the years with a trochus endorsement there was no reported catch in 2014. Data collected from the irregular sale of the product indicates that a total of 280 tonnes of trochus has been collected since 1988, with an average of just over 10 tonne per year; well below the catch limit of 150 tonnes.

Additionally, a survey in 2009 of the eastern Torres Strait trochus population indicated that trochus stocks are stable or increasing in abundance. However, there is some uncertainty due to their patchy distribution and the difficulty in finding trochus. Further investigation of this uncertainty is not warranted at this time with the low level of effort in the fishery.

Strategic assessment—update

The trochus fishery was reaccredited as a wildlife trade operation under the Environment Protection and Biodiversity Conservation Act in October 2012 for continued export approval until 16 October 2015. The declaration is subject to the conditions and recommendations developed by the then Australian Government Department of Sustainability, Environment, Water, Population and Communities.





TORRES STRAIT BÊCHE-DE-MER (SEA CUCUMBER) FISHERY

Description of the fishery

The Torres Strait Bêche-de-mer (Sea Cucumber) Fishery has a long history that dates back to at least the 19th century. In 1916–17 558 tons (567 tonnes) of bêche-de-mer was exported from Thursday Island with 124 boats registered to collect it. There have been several “booms and busts” in the fishery, which is characteristic of these fisheries throughout the world. Bêche-de-mer is an important source of income for some Torres Strait traditional inhabitants.

Sea cucumber is mainly collected from dinghies by free-diving or by walking along reefs at low tide and picking them up by hand. Once collected, the animal is gutted, graded, cleaned, boiled, smoked and dried. This is a labour-intensive process carried out on processing vessels or at shore-based facilities.

Management arrangements

Only traditional inhabitants can participate in the fishery. One non-traditional inhabitant was active in the fishery prior to the introduction of licence limitations in 1995 until early 2015.

Sea cucumber may only be collected by hand. The use of hookah (surface supplied air) or scuba diving gear is not permitted. Boats that are used to collect sea cucumber must be under seven metres in length.

A bag limit of three per person with a maximum of six per boat applies to traditional fishing. Catch is limited for the year across the fishery (measured in wet weight gutted) and size limits of sea cucumber also exist. Until 2014, three species are closed to fishing. The details of restrictions for each species are outlined in Table 5).

The black teatfish fishery underwent a trial one-month opening in 2014. There was a lot of interest in the fishery and the 15 tonnes were fished within two weeks of the opening of the season and the fishery closed.





Table 5: Catch limits and size limits of commercially harvested species in the Torres Strait Bêche-de-mer (Sea Cucumber) Fishery (source: Fisheries Management Notice No. 64)

Commercial Value	Common name	Catch limit ⁵ (tonnes)	Size Limits (mm)
High	Sandfish	nil	180
	White teatfish	15	320
	Black teatfish	15	250
Medium	Surf redfish	nil	220
	Deepwater redfish	Combined 80	120
	Blackfish	Combined 80	220
	Prickly redfish	20	300
Low	Stonefish	Combined 80	
	Lollyfish	Combined 80	150
	Elephant's trunkfish	Combined 80	240
	Greenfish	Combined 80	
	Curryfish	Combined 80	270
	Amberfish	Combined 80	
	Brown sandfish	Combined 80	
	Leopardfish*	Combined 80	
	Pinkfish	Combined 80	

*also known as tigerfish

Condition of the fishery

Because sea cucumbers are easily collected they are susceptible to overfishing. However, the fishery was assessed 2014 as not subject to overfishing. Where sea cucumbers have been overfished in the past there is some evidence that these stocks are now recovering. As a result of this level of recovery and on the advice of the CSIRO the PZJA agreed to a trial opening of the black teatfish fishery in November 2014. With an increased emphasis on catch reporting and capped harvest of 15 tonne the black teatfish trial was well received by traditional inhabitant fishers and provided an insight into the potential value of the fishery if managed sustainably.

⁵ Catch limits are implemented through licence conditions / all species listed as 'Combined 80' have a combined catch limit across the species of 80 tonnes.





During the 1990s, the fishery was based primarily on sandfish, a high-value species occurring in relatively shallow waters, which as a result is vulnerable to over-harvesting. Serious overexploitation and resource depletion of sandfish stocks has occurred on Warrior Reef. This has been confirmed through several fishery-independent surveys that were conducted to assess the level of reduction in sandfish abundance. The harvest of sandfish has been prohibited in the Australian jurisdiction of the Protected Zone since 1998. Despite this, further decline in stock abundance was found in 2004 and may have been the result of illegal harvesting.

There was no recorded increase in stock of sandfish until 2010, where a survey of sandfish at Warrior Reef and surrounding area was conducted and results indicated signs of stock recovery. The survey also identified potential uncertainty in the estimates of stock abundance due to limitations in the survey techniques for recording sandfish that have burrowed into the seafloor.

Illegal fishing incursions by Papua New Guinea nationals at Warrior Reef have been reduced as a result of a closure of Papua New Guinea's bêche-de-mer fishery since October 2009. Australia will continue to conduct surveillance of the reef and maintain a response capability in the area through the Australian Fisheries Management Authority's Foreign Compliance program. Coastwatch flights also cover the area daily.

When the sandfish harvest was closed in 1998, fishing then focussed on other high value species—surf redfish, black teatfish, white teatfish and some lower-value species. In 2002 it was found that black teatfish and surf redfish had experienced significant declines in abundance on the eastern reefs of Torres Strait. As a result the PZJA set zero catch limits for surf redfish and black teatfish, effectively closing the fishery for these two species. By 2005 restrictive catch limits were also set for white teatfish and prickly redfish.

In 2009 a stock abundance survey undertaken by the CSIRO showed signs of recovery of black teatfish with higher numbers and larger individuals being found. It was also found that other sea cucumber species were either stable or increasing in abundance. The catch limits that were set for the various species of sea cucumber to ensure that the stocks either remain healthy or improve are outlined in Table 5.

The status of species in the fishery varies. Table 6 provides a summary of species status as assessed by the Australian Bureau of Agricultural and Resource Economics and Sciences.





Table 6. Summary of species status within the Torres Strait Bêche-de-mer (Sea Cucumber) Fishery (Patterson et al. 2015)

Species	Comments
Black teatfish	The species has been assessed as not overfished or subject to overfishing. The most recent survey estimates (2009) indicate a recovered stock. In 2014, 16.5 t was caught, which is unlikely to result in a biomass decline. The catch was marginally above the conservative 15 t trial catch limit, but below the recommended 25 t.
Prickly redfish	The species has been assessed as not overfished or subject to overfishing. Catch was reported in 2014 of 4 t which is less than the catch limit. There are relatively stable densities through recent history of fishery.
Sandfish	Whilst the species has been assessed as overfished it is not subject to overfishing. The most recent published survey (2010) showed density is still below the 1995 density estimate. The species is currently closed to fishing.
White teatfish	This species was assessed as not overfished or subject to overfishing. Catch was reported in 2014 of 8 t. There were relatively stable densities in 1995, 2002 and 2005 surveys, potentially increasing between 2005 and 2009 surveys.
Other sea cucumber species (18 species)	There is uncertainty of the catch composition and basket composition of stock. Catch was reported across these species in 2014 of 0.2 t.

Strategic assessment—update

The fishery was formally accredited under the Environment Protection and Biodiversity Conservation Act as a wildlife trade operation in June 2014 until 15 June 2017. It is subject to the conditions and recommendations that were developed by the Department of the Environment.



TORRES STRAIT DUGONG AND TURTLE FISHERIES

Description of the fisheries

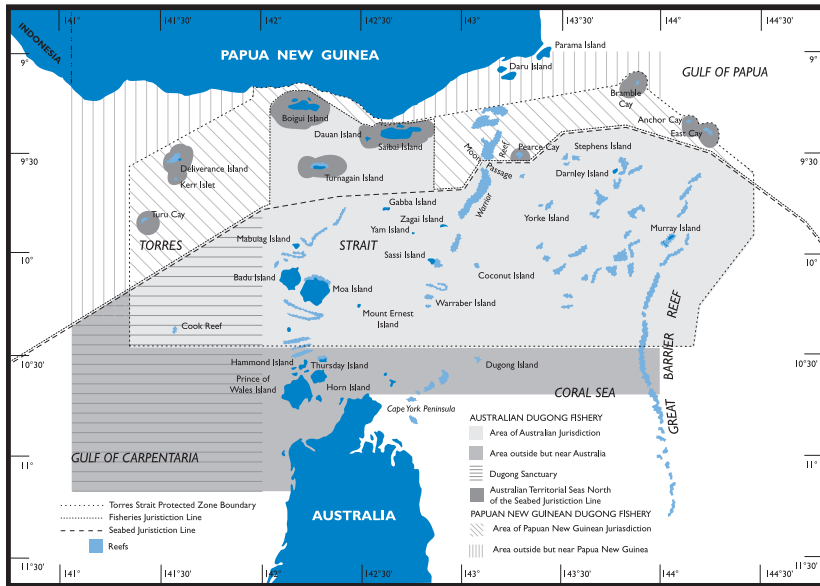


Figure 12. Area of the Torres Strait Dugong Fishery

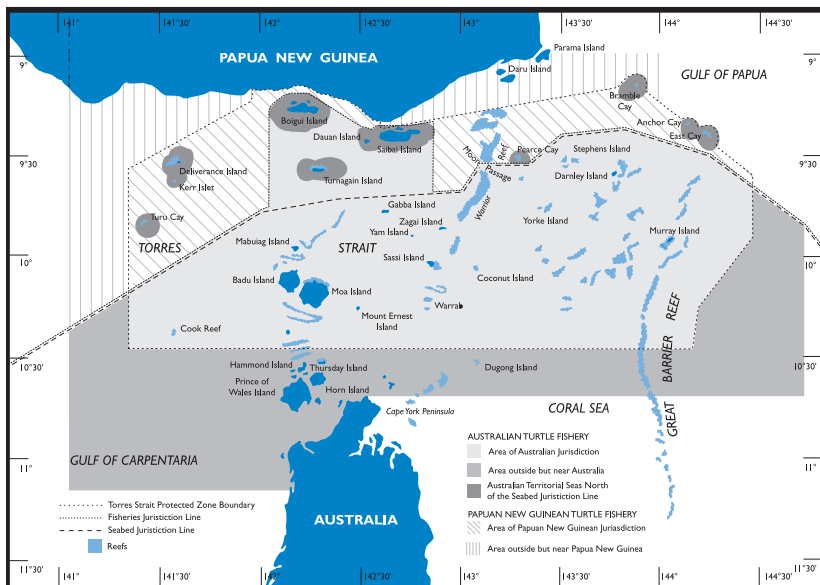


Figure 13. Area of the Torres Strait Turtle Fishery





The Torres Strait dugong and turtle fisheries (Figures 12 and 13) are traditional subsistence fisheries. Hunting for dugong and turtle is an important part of the traditional way of life and source of protein in the diet of traditional inhabitants of the Torres Strait. Whilst the importance of the hunting of this species is recognised, measures are still implemented to ensure the conservation of these species through management arrangements across both Australia and Papua New Guinea.

Dugong and turtles are hunted using a wap (traditional spear) thrown by hand from a dinghy. Turtles are also caught by hand both from a dinghy and on the beach during nesting in some areas of the Torres Strait. Turtle eggs are also harvested.

Strong partnerships have been established for research, management and sustainable take of dugongs and turtles between Torres Strait island communities, the Torres Strait Regional Authority, relevant registered native title prescribed bodies corporate, research providers and state and Commonwealth agencies. Research projects that are undertaken include dugong aerial surveys, turtle tagging, turtle foraging population surveys, nesting turtle tagging and hatching success surveys and migration surveys through satellite tracking for both dugongs and turtles.

There are specific Torres Strait community developed objectives for the fisheries which are outlined in the community based turtle and dugong management plans. These are administered by the individual prescribed native title bodies corporate at each community with technical assistance from the Land and Sea Management Unit of the Torres Strait Regional Authority.

Community-based dugong and turtle management plans have been rolled out in 14 Torres Strait island communities. Each community dugong and turtle management plan integrates a range of cultural hunting protocols and traditional knowledge with contemporary fisheries management arrangements appropriate to each community.

Management arrangements

Participation in the fishery is restricted to traditional inhabitants of the Torres Strait and Papua New Guinea Torres Strait Treaty villages for traditional purposes.

There are several restrictions on the take of dugong and turtles including:

- only traditional inhabitant licensed boats less than six meters in length are permitted to take and carry dugong and turtle
- dugongs may only be hunted using a wap (a spear thrown by hand)
- there is no take of dugong in the dugong sanctuary which has been established in the south-western area of the Torres Strait.



Habitat

Seagrass meadows are the primary food resource for turtle and dugong and habitat for fish species. Approximately 30 per cent of Queensland's seagrass meadows are in the Torres Strait—with one of the largest single continuous seagrass meadows recorded in Australia in the Torres Strait dugong sanctuary. These meadows continue to be assessed and monitored by the Torres Strait Regional Authority in partnership with James Cook University, Centre for Tropical Water and Aquatic Ecosystem Research (TropWATER).

Intertidal seagrass sites are also being monitored by Torres Strait Regional Authority and TropWATER. Results from these sites indicate that seagrass is in a good condition with improving abundance at some locations. The large areas of seagrass found in the shallow waters means that the Torres Strait is an important refuge for dugong and turtle.

Condition of the fisheries

Dugong: The population of dugongs in the Torres Strait is considered to be substantial and genetically healthy (Marsh *et al.*, 2011). The highest dugong population estimate was in 2013 at approximately 16 000 individuals. Additionally, it is believed that there are excellent breeding conditions as there are a high proportion of calves in the population (17.9 per cent) (Sobtzick *et al.* 2014).

Aerial surveys of the Torres Strait (in whole or in part) to estimate the dugong population were conducted in 1987, 1991, 1994, 1996, 2001, 2005, 2006, 2011 and 2013. These surveys largely include waters of the central Torres Strait, and adjacent coastal waters of Cape York and Papua New Guinea. Since 2011 they also included areas of the western waters of the Torres Strait.

The surveys have not detected a decline in the dugong population of Torres Strait, particularly since 2000, suggesting that the level of anthropogenic mortality may be sustainable (Sobtzick *et al.* 2014).

Estimated annual catches have ranged from 240 to more than 800 individuals (Marsh 1999). Supporting Torres Strait communities to manage traditional harvest of dugongs remains a priority to ensure the population remains sustainable. Community-based management plans are a mechanism to support and facilitate cultural lore and customs regarding traditional harvest as well as incorporating outcomes from research in order to make informed management decisions.

Turtle: Six of the world's seven species of marine turtle are found in the region—green, hawksbill, flatback, loggerhead, leatherback, olive ridley—





and all are of conservation concern. The green and hawksbill are the most significant species in terms of the traditional subsistence economy in the broader region (green for meat and eggs, hawksbill for eggs). Aerial surveys conducted in November 2013 found a substantial population of approximately 600 000 adult and sub-adult turtles (of which 95 per cent were estimated to be green turtles) using the foraging grounds of the western and central Torres Strait (excluding the eastern Torres Strait) (Fuentes *et al.*, 2015). There are no population estimates for the hawksbill turtle population of the Torres Strait. However, the monitoring of key turtle nesting sites in north Queensland, particularly Raine Island, has raised concerns about the future of green turtle stocks.

Marine turtles are exposed to a variety of pressures in Australian and international waters during their lifecycle. Turtles of the Torres Strait are a shared resource with other parts of northern Australia, PNG, Indonesia and adjacent Pacific island nations so management efforts need to consider domestic pressures together with overseas threats such as the impacts of climate change, unsustainable harvesting, fisheries by-catch and ghost-net mortalities (Hamann *et al.*, 2015).

To ensure the long term viability of these populations there needs to be continued collaboration with scientists and experts in marine turtle ecology, biology and habitat management to assist communities and other stakeholders in making informed management decisions, including the sustainable traditional harvest of marine turtles and addressing identified priority issues impacting marine turtle populations.

Strategic assessment—update

The *strategic assessment report of the Torres Strait turtle and dugong fisheries* was submitted in 2007 to the then Australia Government Department of Sustainability, Environment, Water, Population and Communities after consideration by the Torres Strait Fisheries Management Advisory Committee, the Australian Fisheries Management Authority Environment Committee and the PZJA. The then Australian Government Department of Sustainability, Environment, Water, Population and Communities made several recommendations in consultation with Torres Strait communities and relevant Government agencies. The strategic assessment is yet to be finalised.





6 LICENSING

Fisheries Queensland has undertaken licencing functions for the PZJA for the past 30 years. From July 2015 these functions will be the responsibility of the Australian Fisheries Management Authority. This action is a part of a broader review that has been undertaken to improve the efficiency of the PZJA administration.

There are different types of licences that permit commercial fishing in PZJA fisheries. These can be split into three different categories, those that:

- allow fishers to access particular PZJA fisheries (fishing boat licences)
- allow non-traditional inhabitant commercial fishing operations to fish in the Torres Strait (master fisherman's licences)
- dictate what species can be received, carried or processed on the vessel. (processor / carrier licences).

FISHING BOAT LICENCES

All commercial fishing boats, including both primary and tender vessels, require a fishing boat licence to be able to access any commercial fishery in the Torres Strait. These licences are issued with an endorsement which identifies the fishery/fisheries in which a licence holder can operate.

There are three types of fishing boat licences in the Australian jurisdiction of the Protected Zone:

- Traditional Inhabitant Fishing Boat Licence
- Torres Strait Fishing Boat Licence
- Torres Strait Sunset Fishing Boat Licence.

Only traditional inhabitants are eligible for Traditional Inhabitant Fishing Boat licences. Traditional inhabitants are defined under the Torres Strait Treaty (in relation to Australia) as persons who:

- are Torres Strait Islanders who live in the Protected Zone or in the adjacent coastal area of Australia
- are citizens of Australia, and
- maintain traditional customary associations with areas or features in or in the vicinity of the Protected Zone in relation to their subsistence or livelihood or social, cultural or religious activities.

Papua New Guineans who are on the amnesty list under the Torres Strait Treaty are also eligible for a traditional inhabitant licence.





All capacity building in Torres Strait commercial fisheries is reserved for traditional inhabitants only with no new licences issued to non traditional inhabitants. Additionally, some fisheries only have traditional inhabitant fishers.

Torres Strait Fishing Boat licences and Torres Strait Sunset Fishing Boat licences are the only avenue by which non-traditional inhabitants can access commercial fishing in the Torres Strait. Non-traditional inhabitants can access to the fisheries by purchasing or leasing an existing Torres Strait Fishing Boat licence (transferable) or by leasing a Torres Strait Sunset Fishing Boat licence. Note that non-traditional inhabitants also require a Torres Strait Master Fisherman's licence to operate a commercial fishing operation (including both primary and tender vessels).

During the reporting period Torres Strait Fishing Boat licences were held in the prawn, tropical rock lobster, and pearl shell fisheries.

In the finfish fishery, all endorsements held by Torres Strait Fishing Boat Licence holders were surrendered in the 2007–08 financial year. Now, only traditional inhabitants can own a licence. However, non-traditional inhabitants can gain temporary access through a 'quota leasing system' via the issuing of Torres Strait Sunset Fishing Boat Licences.

The leasing process that applies to these licences is administered by the Torres Strait Regional Authority and enables the temporary transfer of unused effort in the fishery. The intent of this system is to maintain the market for these fisheries by ensuring ongoing supply of product from the Protected Zone until a point where the traditional inhabitant effort increases.

The revenue raised through the leasing process is invested in community initiatives to further develop the traditional inhabitant commercial fishing sector.

The numbers of the different types of fishing boat licences issued or renewed by the PZJA at 30 June 2015 are provided in Tables 7 to 9. Numbers provided for boat licences exclude those held in "no boat" status, where there are no registered vessels attached to the licence.





Table 7. Number of Traditional Inhabitant Fishing Boat Licences in each Torres Strait fishery⁶ (at 30 June 2015)

Fishery	Licences
Bêche-de-mer	71
Crab	75
Tropical rock lobster	286
Reef line	129
Spanish Mackerel	131
Pearl shell	42
Trochus	48

Table 8. Number of Torres Strait Fishing Boat Licences in each Torres Strait fishery (at 30 June 2015)

Fishery	Primary	Tenders	Total
Bêche-de-mer ⁷	1	2	3
Tropical rock lobster	12	33	45
Pearl shell	10	17	27
Prawn	59	0	59
Other	2	9	11

Table 9. Number of Torres Strait Sunset Fishing Boat Licences in the finfish fishery⁸ (at 30 June 2015)

Fishery	Primary	Tenders	Total
Finfish—reef line	2	8	10
Finfish—Spanish mackerel	6	16	22

⁶ Note that not all licenced boats with commercial fishery endorsement were active in their fishery

⁷ Whilst these licences exist, they are not active and no vessels are linked to them

⁸ The finfish fishery is the only fishery in the Protected Zone that has sunset licences.





MASTER FISHERMAN'S LICENCES

A non-traditional inhabitant who is in charge of a boat licensed by either a Fishing Boat or Sunset Licence must hold a Torres Strait Master Fisherman's Licence endorsed for the relevant fishery. This applies whether the licensed boat is a primary boat, a tender or a dinghy.

Commercial fishers do not need to have prerequisite qualifications to be able to get a Master Fisherman's licence. These licences were introduced in the Protected Zone as a way to increase the number of traditional inhabitants working on non-traditional inhabitant vessels. As such fishers have the choice of either getting a Master Fisherman's licence or employing traditional inhabitants as crew thereby negating the requirement.

Table 10 outlines the number of Master Fisherman's licences held in the different fisheries. The number of licences provides an indication of the potential activity level (fishing effort) that could occur in a fishery.

Table 10. Number of Master Fisherman's licences by combinations of Torres Strait fisheries (at 30 June 2015)

Fishery	Number of licences
Tropical rock lobster	23
Tropical rock lobster, reef line, Spanish mackerel and pearl	4
Tropical rock lobster, reef line and prawn	1
Tropical rock lobster, reef line, Spanish mackerel, pearl and prawn	5
Tropical rock lobster and Spanish mackerel	2
Tropical rock lobster, Spanish mackerel and pearl	21
Tropical rock lobster and pearl	3
Reef line	0
Reef line and Spanish mackerel	6
Reef line, Spanish mackerel and prawn	4
Reef line and prawn	19
Spanish mackerel	7
Pearl	2
Prawn	38
Bêche-de-mer	4
Total	139





PROCESSOR / CARRIER LICENCES

There are three classes of processor/carrier boat licences that control how commercial seafood products are carried and/or processed in the Torres Strait:

- Class A licences allow a licenced primary vessel of a fishing operation to receive, carry and process product from its associated tenders.
- Class B licences allow vessels to carry and process product caught by licensed fishing vessels. However, a Class B license does not allow the licensee to change the form of the product i.e. you cannot collect whole dead lobster then tail or freeze them, whole fish cannot be collected and then filleted and unfrozen product cannot be frozen.
- Class C licences allow the licence holder to collect product from vessels that are licensed to fish in the Torres Strait and change the state of the product. However, unlike the other classes of processor/carrier licences the vessel cannot be used to fish commercially.





7 SURVEILLANCE AND ENFORCEMENT

The PJJA has a responsibility to enforce the provisions of the Act through the surveillance of the fishing industry and enforcement of rules and regulations in the Protected Zone. The Queensland Boating and Fisheries Patrol conduct these activities on behalf of the PJJA through the Protected Zone Compliance Program. The purpose of the program is to:

- enforce fisheries legislation in a manner that results in a high level of compliance
- educate and advise both traditional and commercial fishers on the need for fishing laws in a manner that results in a high level of voluntary compliance
- undertake duties as required by the PJJA to protect Protected Zone resources.

Queensland Boating and Fisheries Patrol officers, based in Cairns delivered the domestic compliance program by visiting communities and through at-sea inspections using a number of vessels.

PATROLS

The Queensland Boating and Fisheries Patrol aims to conduct patrols for 60 sea days within the Protected Zone annually; noting that additional patrol days may also be needed to conduct specific investigations.

Queensland Boating and Fisheries Patrol conducts joint patrols using the Queensland Police Service vessel as a patrol platform and staff may be teamed alongside police officers when performing field duties. This agreement commenced in March 2010. Using other government resources such as Police improves the ability to patrol and enforce fisheries legislation throughout the Protected Zone.

Additionally the district has a number of resources that may be used to accommodate a response when the need arises. These platforms can include other government resources such as the Royal Australian Navy and other private commercial vessels that may be chartered.

Queensland Boating and Fisheries Patrol achieved a total of 55 Protected Zone patrol days in 2014–15. Table 11 provides details about which vessels were used and how often they were used to conduct the patrols.



Table 11. Vessels used for undertaking patrol days during the financial year 2014–15

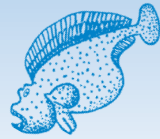
Vessel	Patrol days
Queensland Police vessel	53
Queensland Police rigid inflatable boat	2
Total	55

COMMUNITY VISITS

Whilst not a key role of the Queensland Boating and Fisheries Patrol, extension and education services are undertaken during Torres Strait community visits. Table 12 outlines the frequency that these visits occurred during the reporting period. They are vital for achieving voluntary compliance and are conducted when possible during at sea patrols on board the police vessel.

Table 12. Queensland Boating and Fisheries Patrol community visits in the Protected Zone during the financial year 2014–15

Community	Number of Visits
Badu Island	2
Boigu Island	1
Coconut (Poruma) Island	1
Darnley (Erub) Island	0
Dauan Island	0
Hammond Island	0
Horn (Ngurapai) Island	6
Mabuiag Island	1
Moa Island (St Pauls and Kubin communities)	2
Murray (Mer) Island	1
Prince of Wales Island	
Saibai Island	1
Stephen Island	1
Sue (Warraber) Island	0
Thursday Island	8
Yam (Iama) Island	0
Yorke (Masig) Island	1
Total	25





The visits also enable community members to raise matters relating to commercial, traditional and recreational fishing and boating safety issues. Issues discussed during community visits include:

- licensing procedures
- unlicensed fishing
- confusion about the licensing requirements for traditional inhabitants who wish to exercise their traditional rights in regards to traditional fishing.

Community visits also provide useful information to schedule Protected Zone patrols. These may include trends in commercial fishing and hot spots for commercial fishing activities.

PROTECTED ZONE COMPLIANCE PRIORITIES

Patrols, which include educating fishers in the field, have been focused on several fisheries, the issues identified in these fisheries during the patrols and community visits are summarised in Table 13.

Table 13. Compliance issues identified for the individual fisheries

Fishery	Issues
Bêche-de-mer	<ul style="list-style-type: none"> • Take of no take species (sandfish, black teatfish, surf redfish) • Unlicensed fishing.
Pearl shell	<ul style="list-style-type: none"> • Nil.
Prawn	<ul style="list-style-type: none"> • Failure to produce documentation (vessel's fishing authority, vessel's fishing and safety manuals including manning certificates) • Failure to carry safety equipment in accordance with registration requirements • Awareness of current regulations including those contained within Fisheries Management Notices (FMN).
Reef line/ Spanish mackerel	<ul style="list-style-type: none"> • Low knowledge of current fishery legislation (take/no take species) • Failure to carry safety equipment in accordance with registration requirements.





Fishery	Issues
Tropical rock lobster	<ul style="list-style-type: none"> • Failure to hold a Torres Strait Master Fisherman's Licence • Failure to complete a variation when replacing tenders • Failure to comply with conditions of a licence • Lack of knowledge of relevant licensing conditions; • Taking/retaining undersized lobster • Failure to produce documentation (manning certificates) • Failure to carry safety equipment in accordance with registration requirements.
Dugong / turtle	<ul style="list-style-type: none"> • Lack of knowledge of the fishery sanctuary • Non-traditional persons participating in activity • Reported sale of dugong and turtle products • Failure to carry safety equipment in accordance with registration requirements.

As a result of surveillance and community visits the following key compliance priorities in the Protected Zone identified by the Queensland Boating and Fisheries Patrol are set out in Table 14 below.

Table 14. Key compliance priorities

Fishery	Compliance Priorities
Bêche-de-mer	<ul style="list-style-type: none"> • Unlicensed (Papua New Guinea nationals taking sea cucumber within Protected Zone) • Take of no take species
Reef line/ Spanish mackerel	<ul style="list-style-type: none"> • Unlicensed
Pearl shell	<ul style="list-style-type: none"> • Unlicensed
Prawn	<ul style="list-style-type: none"> • Vessel Monitoring System • Bycatch Reduction Device/Turtle Exclusion Device • Gear restriction • Shark finning • Bycatch of tropical rock lobster
Tropical rock lobster	<ul style="list-style-type: none"> • Unlicensed tenders • Size restriction • Closures
Turtle and dugong	<ul style="list-style-type: none"> • Non-traditional inhabitant take • Gear restriction





8 RESEARCH PROGRAM

The Torres Strait Scientific Advisory Committee continued to assess and prioritise strategic research activities for Torres Strait fisheries. To reflect changes in fisheries status, tactical research needs and direction, annual operational plans were developed.

To ensure that research is conducted in a culturally appropriate manner in the Torres Strait *a guide to researchers working in the Torres Strait* (2012) is provided to people undertaking research.

Projects were funded by the Australian Fisheries Management Authority based on recommendation by the scientific advisory committee. Many reports from the projects can be accessed at www.cmar.csiro.au/datacentre/torres/tsmr_other.htm. Table 15 provides the details of the projects conducted during the reporting period.

Table 15. Research projects conducted in the Protected Zone

Research project	Research provider	Principal Investigator	Financial year commenced	Financial year completed ⁹
Smart phone technology for remote data collection in Torres Strait traditional inhabitant finfish fisheries.	UTAS	Klass Hartmann	2012–13	2014–15
2015 stock assessment and total allowable catch estimation for the Torres Strait tropical rock lobster	CSIRO	Éva Plagányi	2013–14	2014–15
Improved Torres Strait Prawn Fishery profitability and pathways for a sustained flow of benefits to Torres Strait Island communities	Cobalt Marine Resource Management	Andy Bodsworth	2013–14	2014–15
Defining the Status of Torres Strait Spanish mackerel to inform future fisheries allocation and sustainable fishing	James Cook University	Andrew Tobin	2013–14	(2015–16)

⁹ Financial years in brackets indicate when the project is due for completion





9 FINANCIAL ARRANGEMENTS

COST SHARING

The Australian Government (represented by the Australian Fisheries Management Authority) and the State of Queensland (represented by Fisheries Queensland) have joint responsibilities for administering certain PZJA fishery functions (e.g. fisheries management, licensing and compliance). A cost share arrangement exists between the two parties; it was initially signed in January 1986 and updated in 1999 and again in 2010 to suit changing needs.

The arrangement outlines how PZJA functions and costs are shared and how assets are managed. The agreement was ratified in June 2010 by the Chief Executive Officer of the Australian Fisheries Management Authority and the Managing Director of Fisheries Queensland. It applied to the 2009–10 financial year onwards.

CAPITAL ITEMS

Implementation of the initial capital items program, fully funded by the Commonwealth, began in 1985–86 and was completed in the first half of the financial year 1991–92. Each agency tends to its own capital items. The Commonwealth's capital items held on 30 June 1999 and still held include:

- a joint fisheries/quarantine administrative centre on Thursday Island
- three residences on Thursday Island for the use of regional fisheries staff.

OVERALL FINANCES

The costs for managing PZJA fisheries during the 2014–15 financial year were incurred by the:

- Australian Fisheries Management Authority for fisheries management and PZJA committee administrative functions
- Fisheries Queensland for compliance and licencing functions
- Torres Strait Regional Authority for capacity building and traditional inhabitant representation facilitation.

To support activities associated with PZJA fisheries levies and/or licence fees are collected from traditional and non-traditional commercial fishers that offset costs.

Funds from the traditional inhabitant boat licence fees are provided to the Torres Strait Regional Authority. The remainder is divided between the





Australian Fisheries Management Authority and Fisheries Queensland based on the cost share arrangement between the two agencies. In addition, where relevant, rent is collected from office and residential accommodation in buildings held by agencies on Thursday Island.

Costs, and revenue, for the Australian Fisheries Management Authority and Fisheries Queensland for 2014–15 are outlined in Table 16 noting that:

- The financial performances of the Australian Fisheries Management Authority and Fisheries Queensland are reported through their respective annual reports
- For Fisheries Queensland actual expenditure has been recorded where possible, otherwise the budget for the period has been recorded. There may be some slight difference between the two; however, it is unlikely to be significant

During the reporting period Torres Strait Regional Authority met its financial obligations associated with the PZJA from its own appropriation funding. The Torres Strait Regional Authority's financial statements are audited annually by the Australian National Audit Office and included as part of their annual reports. The Torres Strait Regional Authority does not report the financial costs associated with PZJA activity separately as it forms part of the day to day normal program activity.

In addition to appropriation funding, Torres Strait Regional Authority also received \$40 300 from the traditional inhabitant licence fees for capacity building for relevant community fisher groups.

The Australian Government Department of Agriculture also incurs costs when providing policy and legislative support when needed. However, there is not a dedicated Torres Strait section in the Department and any expenditure is not directly recorded against the PZJA and as such is not reported here.



*Table 16: 2014–15 Australian Fisheries Management Authority (AFMA)—
Fisheries Queensland (FQ) cost-sharing details*

Description	AFMA	FQ	Total
Direct Costs			
Salaries & other staff related costs	\$887 266	\$782 050	\$1 669 316
Consultants & contractors	\$27 336	\$100 000	\$127 336
Travel & subsistence	\$230 578	\$74 000	\$304 578
Research contracts	\$441 338		\$441 338
Other administrative costs	\$481 416	\$40 000	\$521 416
<i>Total direct costs</i>	<i>\$2 067 934</i>	<i>\$996 050</i>	<i>\$3 063 984</i>
Indirect Costs			
Logbook program	\$7 230		\$7 230
Data management	\$11 606		\$11 606
Observers	\$68 166		\$68 166
Information services (VMS polling)		\$18 000	\$18 000
Overheads	\$68 082	\$450 154	\$518 236
<i>Total indirect costs</i>	<i>\$155 084</i>	<i>\$468 154</i>	<i>\$623 238</i>
Total costs	\$2 223 018	\$1 464 204	\$3 687 222
Revenue			
Licenses and levies	\$250 730	\$196 382	\$447 112
Total revenue	\$250 730	\$196 382	\$447 112
Net expenditure	\$1 972 288	\$1 267 822	\$3 240 110





ANNEXE A: PZJA OUTCOMES

19 SEPTEMBER 2014

On 19 September 2014 the PZJA made the following out of session decisions:

With respect to the delegation of scientific and developmental permits under the Torres Strait Fisheries Act 1984

The PZJA **NOTED**:

1. That permits for scientific and developmental purposes have previously been issued by the Australian Fisheries Management Authority and Fisheries Queensland respectively.
2. That upon review of the Section 9 and Section 38 delegations under the *Torres Strait Fisheries Act 1984* (the Act), it is clear that the PZJA holds non-delegable responsibility for issuing permits for scientific and developmental purposes under Section 12 of the Act.
3. All permits for scientific and developmental purposes under Section 12 of the Act must be referred to the PZJA for decision, unless it relates to a non PZJA fishery or does not involve a boat.
4. A request has been received for a permit for scientific purposes to conduct fishery research in the area of the Torres Strait Spanish Mackerel Fishery.
 - a. The research outcome will assist the PZJA in achieving its legislative objectives under the Act.
 - b. Native Title consultation on the proposed management action under Section 24HA of the *Native Title Act 1993* (NT Act) has been conducted.

The PZJA **AGREED**:

5. to issue a permit for scientific purposes to authorise the holder, or a person acting on behalf of the holder, to conduct research in the area of the Torres Strait Spanish Mackerel Fishery, in accordance with the project “*Defining the status of Torres Strait Spanish Mackerel to inform future fisheries allocation and sustainable fishing*”, which has been supported by the Torres Strait Scientific Advisory Committee.



17 NOVEMBER 2014

On 17 November 2014 the PZJA made the following out of session decisions:

With respect to the Torres Strait Prawn Fishery

The PZJA **AGREED** to:

1. remove the investment warning for the Torres Strait Prawn Fishery (TSPF) dated 19 December 2000.
2. retain all other Torres Strait investment warnings, including those that relate to the TSPF, noting they are no longer valid for the TSPF.
3. Publish a notice to inform stakeholders of the change.

10 DECEMBER 2014

On 10 December 2014 the PZJA made the following out of session decisions:

With respect to the bêche-de-mer fishery

The PZJA **AGREED** to:

1. remove the sunset licence condition on the remaining non-Traditional Inhabitant bêche-de-mer (BDM) licence, making it transferable only in the event that it is purchased by the Commonwealth (in this context the Commonwealth includes the Torres Strait Regional Authority and the Australian Fisheries Management Authority).

The PZJA **NOTED**:

2. that amending the licence conditions attached to the remaining non-Traditional Inhabitant BDM licence is not likely to be a future act under the *Native Title Act 1993* and therefore does not require Native Title notification;
3. that following the purchase of the non-Traditional Inhabitant BDM licence by the Commonwealth, the commercial BDM fishery will be fully owned by Torres Strait Islanders and Aboriginal Traditional owners; and
4. that any future decisions relating to the transfer of the BDM licence, once held by the Commonwealth, will be referred to the PZJA.





30 JANUARY 2015

On 30 January 2015 the PZJA made the following out of session decisions:

With respect to the Torres Strait Prawn Fishery

The PZJA:

1. **AGREED** to set the Total Allowable Effort (TAE) in the Torres Strait Prawn Fishery (TSPF) at 9 200 days for the 2015 fishing season.
2. **NOTED** that the proposed TAE is consistent with the TSPF management plan 2009, harvest strategy and PZJA sustainability reference points.

4 MARCH 2015

On 4 March 2015 the PZJA made the following out of session decisions:

With respect to the approval of scientific research in the turtle and dugong fishery

The PZJA **NOTED**:

1. All permits for scientific and developmental purposes under Section 12 of the Act must be referred to the PZJA for decision, unless it relates to a non PZJA fishery or does not involve a boat.
2. A request has been received for a permit for scientific purposes to conduct research in the area of the Torres Strait Turtle Fishery and the Torres Strait Dugong Fishery.
3. Native Title notification on the proposed management action under Section 24HA of the *Native Title Act 1993* has been conducted.

The PZJA:

4. **AGREED** to issue a permit for scientific purposes to authorise the holder, or a person acting on behalf of the holder, to conduct research in the area of the Torres Strait Turtle Fishery and the Torres Strait Dugong Fishery, in accordance with the application made by the Torres Strait Regional Authority Land and Sea Management Unit.¹⁰





15 APRIL 2015

On 15 April 2015 the PZJA made the following out of session decisions:

With respect to the Torres Strait Tropical Rock Lobster Fishery

1. The PZJA AGREED to re-introduce moon-tide closures for the 2015 fishing season.

28 MAY 2015

On 28 May 2015 the PZJA made the following out of session decisions:

With respect to Licensing Arrangements for Traditional Inhabitant Boat Licences

The PZJA:

1. AGREED to maintain Traditional Inhabitant Boat (TIB) licensing fees at status quo for 2014/15 and re-visit after the current holistic review of licensing has been completed.
2. NOTED:
 - a. The objective to pursue economic independence for Torres Strait Islanders and Aboriginal people through sustainable use of marine resources and implementing supporting licensing policy.
 - b. That the Torres Strait Regional Authority invests revenue from TIB licences into fisheries related capacity building activities in Torres Strait communities.
 - c. The licensing system provides some basis for monitoring who is fishing and effort levels in Torres Strait Protected Zone fisheries and underpins good fisheries management.

With respect to Increasing Maximum Boat Length

The PZJA:

1. AGREED to work with PZJA forums and stakeholders to determine appropriate maximum boat length policies on an individual fishery basis.
2. NOTED:
 - a. There may be economic and employment opportunities should the maximum boat size limit be increased in some fisheries.
 - b. That previous discussions on increasing boat size have not been widely supported and significant consultation and negotiation will be required before any changes can be implemented.
 - c. All Torres Strait fisheries are already investigating optimum boat size.





2 June 2015

On 2 June 2015 the PZJA made the following out of session decisions:

With respect to Torres Strait Protected Zone Joint Authority Annual Report 2011–12, 2012–13 and 2013–14

The PZJA:

1. **APPROVED** the Torres Strait Protected Zone Joint Authority Annual Report 2011–12, 2012–13 and 2013–14 for tabling in the Australian Parliament in accordance with Section 41 of the *Torres Strait Fisheries Act 1984*
2. **ENDORSED** the report by signing the signature page for inclusion in the final report.

With respect to granting a scientific permit to Tagai State College

The PZJA:

1. **AGREED** to issue a permit for scientific purposes to authorise the holder, or a person acting on behalf of the holder, to collect a maximum of 50 fish and/or crustaceans and a maximum of 50kg of live rock.¹¹

The PZJA **NOTED**:

2. All permits for scientific and developmental purposes under Section 12 of the Act must be referred to the PZJA for decision, unless it relates to a non PZJA fishery or does not involve a boat.
3. An application had been received for a permit for scientific purposes for Tagai State College to collect a small number of specimens to keep alive in tanks as part of its marine studies curriculum.
4. Native Title notification on the proposed management action under Section 24HA of the *Native Title Act 1993* has been conducted with no responses.

With respect to the granting a scientific permit for shark tagging, tracking and sampling scientific permit

The PZJA:

1. **AGREED** to issue a permit for scientific purposes to authorise the holder, or a person acting on behalf of the holder, to conduct shark tagging and tracking research in the Torres Strait.¹²

¹¹ The PZJA Chair signed the permit on 2 June 2015

¹² The PZJA Chair signed the permit on 2 June 2015





The PZJA **NOTED**:

2. All permits for scientific and developmental purposes under Section 12 of the *Torres Strait Fisheries Act 1984* must be referred to the PZJA for decision, unless it relates to a non PZJA fishery or does not involve a boat.
3. An application has been received for a permit for scientific purposes for Osearch to conduct shark tagging, tracking and sampling research in the Torres Strait.
4. Native Title notification on the proposed management action under Section 24HA of the *Native Title Act 1993* has been conducted, no responses were received.

4 June 2015

On 4 June 2015 the PZJA made the following out of session decisions:

With respect to implementing the *Torres Strait Fisheries Logbook Instrument 2015*

1. The PZJA **AGREED** to revoke *Torres Strait Fisheries Logbook Instrument No. 1* and *Logbook Notice No. 8*, and **implement** *Torres Strait Fisheries Logbook Instrument 2015*.





ANNEXE B: PZJA CONSULTATIVE COMMITTEE MEETINGS

Torres Strait Scientific Advisory Committee

- Meeting 65: 4–5 December 2014, Sydney
- Meeting 66: 27 March 2015
- Out-of-session: 22 May 2015, teleconference

Torres Strait Prawn Management Advisory Committee

- Meeting No. 16: 23–24 June 2015, Cairns

Torres Strait Hand Collectables Working Group

- Meeting 8: 30 April 2015, Thursday Island

Torres Strait Tropical Rock Lobster Resource Assessment Group

- Meeting 13: 27–28 August 2014, Thursday Island



ANNEXE C: REFERENCES

A guide for fisheries researchers working in the Torres Strait, 2012, Torres Strait Protected Zone Joint Authority (www.pzja.gov.au/wp-content/uploads/2011/06/Guidelines-for-researchers-working-in-Torres-Strait-Final-A3_updated-4.4.2012.pdf)

Hamann, M., Smith, J. Preston S. and Fuentes, M.M.P.B. (2015). *Nesting green turtles of Torres Strait*. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns (15pp.).

Marsh, H. 1999 *Torres Strait dugong 1998*, Fisheries assessment report, edited by the Torres Strait Fisheries Assessment Group, Australian Fisheries Management Authority, Canberra.

Marsh, H, Grech, A and Hagihara, R, 2011, *Report to the Australian Marine Mammal Centre and the Torres Strait Regional Authority—Aerial survey of Torres Strait to evaluate the efficacy of an enforced and possibly extended Dugong Sanctuary as one of the tools for managing the dugong fishery*, School of Earth and Environmental Sciences, ARC Centre of Excellence for Coral Reef Studies, James Cook University, Australia.

Patterson, H, Georgeson, L, Stobutzki, I & Curtotti, R (ed) 2015, *Fishery status reports 2015*, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra. CC BY 3.0.

Sobtzick, S, Hagihara, R, Penrose, H, Grech, A, Cleguer, C, and Marsh, H, 2014, *An assessment of the distribution and abundance of dugongs in the Northern Great Barrier Reef and Torres Strait. Report to the National Environmental Research Program*. Reef and Rainforest Research Centre Limited, Cairns. August 2014 (72pp.).





ANNEXE D: GLOSSARY

SPECIES LIST

Common name	Scientific Name
Crustaceans	
Blue endeavour prawns	<i>Metapenaeus endeavouri</i>
Blue swimmer crab	<i>Portunus pelagicus</i>
Brown tiger prawns	<i>Penaeus esculentus</i>
King prawns	<i>Merlicertus plebejus</i>
Moreton Bay bugs	<i>Thenus</i> spp
Mud crab	<i>Scylla</i> spp.
Ornate tropical rock lobster	<i>Panulirus ornatus</i>
Red spot king prawns	<i>Melicertus longistylus</i>
Slipper and shovel-nosed lobster	Scyllaridae
Fish	
Barramundi	<i>Lates calcarifer</i>
Barramundi cod	<i>Cromileptes altivelis</i>
Coral trout species	<i>Plectropomus</i> spp.
Grey mackerel	<i>Scomberomorus semifasciatus</i>
mixed reef fish	<i>Lutjanus</i> spp. and <i>Lethrinus</i> spp.
Narrow-barred Spanish mackerel	<i>Scomberomorus commerson</i>
Rock Cod	<i>Epinephelus</i> spp.
School mackerel	<i>Scomberomorus queenslandicus</i>
Shark mackerel	<i>Grammatorcynus bicarinatus</i>
Spotted mackerel	<i>Scomberomorus munroi</i>
Molluscs	
Black-lipped pearl shell	<i>Pinctada margaritifera</i>
Gold-lipped pearl shell	<i>Pinctada maxima</i>
Squid	Teuthoidea
Scallops	<i>Amusium</i> spp.
Trochus	<i>Tectus niloticus</i> (previously <i>Trochus niloticus</i>)
Winged pearl oyster	<i>Pteria penguin</i>
Mammals	
Dugong	<i>Dugong dugon</i>





Reptiles

Flatback turtle	<i>Natator depressus</i>
Green turtle	<i>Chelonia mydas</i>
Hawksbill turtle	<i>Eretmochelys imbricata</i>

Bêche-de-mer

Amberfish	<i>Thelenota anax</i>
Blackfish	<i>Actinopyga miliaris</i>
Black teatfish	<i>Holothuria whitmaei</i> (previously <i>H. nobilis</i>)
Brown sandfish	<i>Bohadschia vitiensis</i>
Curryfish	<i>Stichopus hermanni</i> (previously <i>S. variegatus</i>)
Deepwater redfish	<i>Actinopyga echinites</i>
Elephant's trunkfish	<i>Holothuria fuscopunctata</i>
Greenfish	<i>Stichopus chloronotus</i>
Leopardfish (also known as tigerfish)	<i>Bohadschia argus</i>
Lollyfish	<i>Holothuria atra</i>
Pinkfish	<i>Holothuria edulis</i>
Prickly redfish	<i>Thelenota ananas</i>
Sandfish	<i>Holothuria scabra</i>
Stonefish	<i>Actinopyga lecanora</i>
Surf redfish	<i>Actinopyga mauritiana</i>
White teatfish	<i>Holothuria fuscogilva</i>



ACRONYMS AND ABBREVIATIONS

CSIRO	Commonwealth Scientific and Industrial Research Organisation
PZJA	Protected Zone Joint Authority
The Act	The <i>Torres Strait Fisheries Act 1984</i>
The Torres Strait Treaty	The <i>Treaty between Australia and the Independent State of Papua New Guinea concerning Sovereignty and Maritime Boundaries in the area between the two Countries, including the area known as the Torres Strait, and Related Matters</i> that was signed at Sydney on 18 December 1978
Protected Zone	Torres Strait Protected Zone

