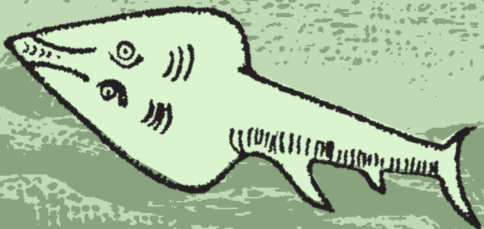




TORRES STRAIT
PZJA
PROTECTED ZONE
JOINT AUTHORITY



*Annual Report for the
Financial Year 2019–20*



Torres Strait Fisheries Act 1984 (Commonwealth)



PROTECTED ZONE JOINT AUTHORITY

Annual report for the financial year
1 JULY 2019 to 30 JUNE 2020

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1 INTRODUCTION

This, the thirtieth annual report of the Protected Zone Joint Authority (PZJA), describes PZJA activities and the condition of the fisheries in the Torres Strait Protected Zone (Figure 1) during the financial year ending 30 June 2020.

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.

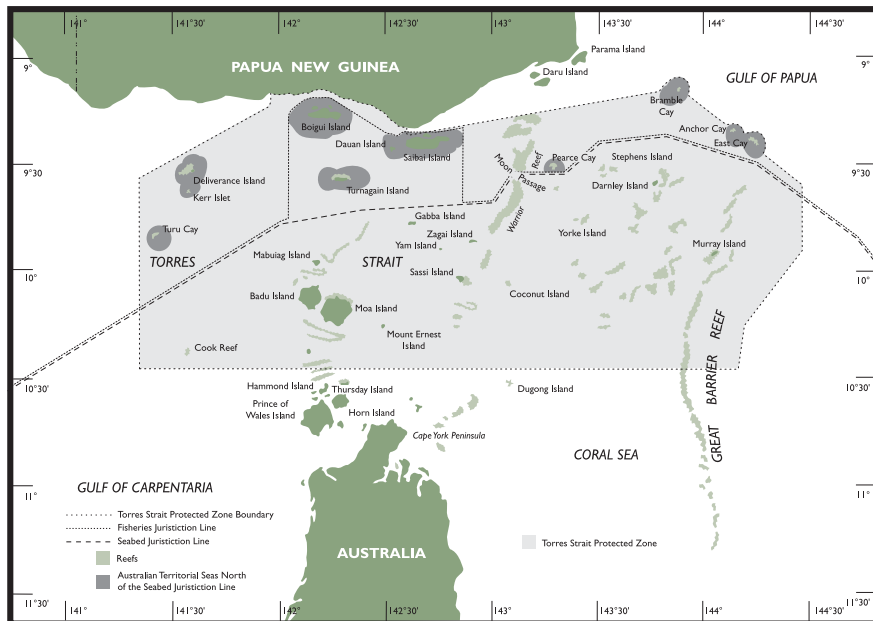


Figure 1. Area of the Torres Strait Protected Zone



2 BACKGROUND

THE TORRES STRAIT

The Torres Strait is located between the tip of the 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 that were once part of the Great Dividing Range. There are eighteen communities across seventeen of the islands and there are two Northern Peninsula area communities; all other islands are uninhabited. The island communities form five traditional geographical clusters; inner, eastern, central, western, and top-western Island clusters.

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 in 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 the same day as the Torres Strait Treaty was ratified, 15 February 1985. The Act gives 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, which 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, which consists of the Australian Government Minister responsible for fisheries, the Queensland Minister responsible for fisheries and the Chair of the Torres Strait Regional Authority (TSRA). The members for the reporting period are outlined in Section 3 of this report.

In addition to the Act, Protected Zone fisheries are subject to assessment under three parts of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) 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).

NATIVE TITLE

In August 2013, the High Court of Australia ruled that native title holders maintained the right to access and take fish and other aquatic life for any purpose in the waters of the Torres Strait where Native Title has been found to exist. The High Court noted that the native title right to access to fish and other aquatic life is non-exclusive, and that although there is legislation in place that regulates access to the fishery, regulation of the fishery is not inconsistent with the continued existence of native title rights where the legislation adequately provides for the exercise of those rights.

The Australian Fisheries Management Authority (AFMA), on behalf of the PZJA, consults with registered native title body corporates (RNTBCs), registered native title claimants and any representative Aboriginal and Torres Strait Islander bodies in accordance with section 24HA(7) of the *Native Title Act 1993*. Section 24HA(7) sets out when, and for what processes, a formal Future Act Notification and Native Title Notification must be undertaken. In addition, AFMA engages with RNTBCs, registered claimants and representative bodies through formal consultation and as invited participants on the PZJA consultative forums.

Future Act Notifications that have been undertaken by AFMA, including information on each consultation process are published online at <https://www.pzja.gov.au/native-title-notifications>.



3 THE PROTECTED ZONE JOINT AUTHORITY

The PZJA is responsible for the management of PZJA fisheries. Its members comprise the Australian Government and Queensland ministers responsible for fisheries, and the Chairperson of the Torres Strait Regional Authority.

Originally, the PZJA comprised the Australian Government and Queensland ministers; in November 2002 the Chairperson of the Torres Strait Regional Authority also became a member. This was acknowledged as a significant step in recognising the unique relationship between the Indigenous community and the region's fisheries resources.

During the reporting period the members of the PZJA were:

- Senator the Hon. Jonathon Duniam, Assistant Minister for Forestry and Fisheries
- The Hon Mark Furner MP, Queensland Minister for Agricultural Industry Development and Fisheries
- Mr Napau Pedro Stephen AM, Chairperson of the Torres Strait Regional Authority.

The Australian Government Minister is the presiding member of the PZJA.

PZJA decisions are published online at www.pzja.gov.au/pzja-and-committees/pzja-meeting-papers-and-records.

The PZJA member agencies are the:

- Australian Fisheries Management Authority
- Queensland Government Department of Agriculture and Fisheries
- Torres Strait Regional Authority and
- Australian Government Department of Agriculture, Water and the Environment

The PZJA has delegated certain powers and functions to these agencies. During the reporting period AFMA staff members held delegations for fisheries management, licensing and compliance functions in Torres Strait fisheries.



ROLES AND RESPONSIBILITIES

The PZJA is responsible for monitoring the condition of the designated fisheries and for formulating policies and plans for their management. The PZJA has regard to the rights and obligations conferred on Australia by the Torres Strait Treaty, and in particular, the protection of the traditional way of life and livelihood of the traditional inhabitants, including their rights in relation to traditional fishing. The specific fisheries managed by the PZJA are listed in section 5–Fisheries.

Since 2007, the preferred approach of the Australian Government has been to manage Commonwealth fisheries via formal harvest strategies in accordance with the *Commonwealth Fisheries Harvest Strategy Policy and Guidelines for the Implementation of the Commonwealth Fisheries Harvest Strategy Policy*. The policy does not apply to Torres Strait fisheries, but the PZJA has generally sought to follow it, and implemented harvest strategies for the Torres Strait Prawn Fishery (2007), the Torres Strait Tropical Rock Lobster Fishery (2019) and Bêche-de-mer Fishery (2019). The strategies contain a range of rules that control the intensity of fishing activity according to the biological conditions of each fishery. The Finfish harvest strategy is being developed and likely to be ready for implementation in the 2021–22 fishing season.

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

Consultation and communication is important for the effective management of the region's fisheries. For this purpose the PZJA has established a consultative structure that includes advisory bodies (Figure 2).

The consultative forums include membership comprising the following:

- Australian traditional inhabitant fishers (commercial and traditional fishing)
- non-traditional inhabitant commercial fishers
- Australian and Queensland government officials
- Papua New Guinea government officials
- other technical experts.



The PZJA is advised by several forums on issues associated with Protected Zone fisheries, including:

- the PZJA Standing Committee
- management and scientific advisory committees
- working groups
- resource assessment groups

While 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 and representatives of the broader community.

Consultation and communication can be difficult across the many island communities of the Torres Strait. Consultative forums are therefore complemented by meetings between fisheries officers and fishers in communities around the Torres Strait.

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 can be obtained on the PZJA website at: https://www.pzja.gov.au/sites/default/files/content/uploads/2011/06/fisheries-management-paper-no1.pdf?acsf_files_redirect.

The dates on which the various groups met during the reporting period are set out in Annex A.

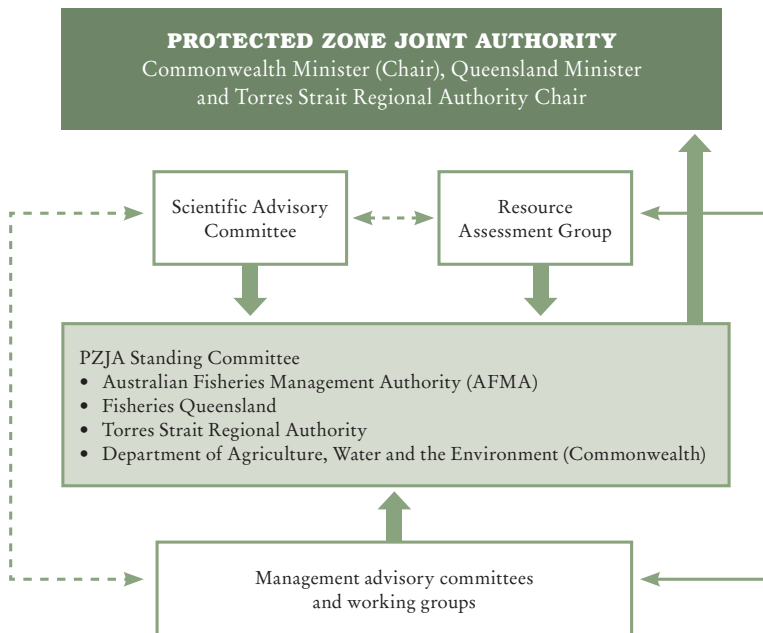


Figure 2. The consultative structure of the Torres Strait Protected Zone Joint Authority (Solid arrows and thin arrows indicate primary and secondary lines of communication respectively)

The PZJA Standing Committee

The PZJA Standing Committee consists of senior representatives from the PZJA member agencies (Table 1). The committee provides 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, Water and the Environment	Assistant Secretary, Fisheries Branch

Management advisory committees and working groups

There is one management advisory committee and three working groups under the PZJA, including:

- Torres Strait Prawn Management Advisory Committee
- Torres Strait Finfish Working Group
- Torres Strait Tropical Rock Lobster Working Group
- Torres Strait Hand Collectables Working Group

The management advisory committee and working groups comprise members from the traditional inhabitant and non-traditional industry sectors, the research community and PZJA agency staff and are an important source of advice and recommendations on fishery-specific management issues supporting the PZJA decision-making process.

These groups advise on matters relating to fishery objectives, harvest strategies, policies and management arrangements, as well as operational and compliance issues in pursuit of PZJA objectives. In these forums, fishery issues are discussed, problems identified and potential solutions developed. These deliberations are used to form recommendations to the PZJA.

The Torres Strait Prawn Management Advisory Committee met twice during the reporting period. Each of the finfish, tropical rock lobster and the hand collectables working groups met once during the reporting period. Additionally, many issues are considered by these groups out-of-session.



Resource assessment groups

The role of resource assessment groups is to assess and provide advice on the status of Protected Zone commercial fish stocks and related matters, including environmental, economic and social/cultural factors affecting the fisheries. Advising on the impact of fishing on non-target species and the marine environment is also a key role of these groups.

There are two resource assessment groups; Torres Strait Tropical Rock Lobster Resource Assessment Group and the Finfish Resource Assessment Group. Both these groups held one meeting in the reporting period.

The Torres Strait Scientific Advisory Committee

The Torres Strait Scientific Advisory Committee's role is to advise on the strategic direction, priorities and funding for research to be undertaken across all PZJA fisheries.

The committee normally provides a review process for research being conducted to ensure milestones are met and that the research outcomes represent 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. The committee met twice during the reporting period.



4 COOPERATION WITH PAPUA NEW GUINEA

In line with the Torres Strait Treaty, Australia and Papua New Guinea are required to cooperate to conserve, manage and optimally utilise Protected Zone commercial fisheries (Article 21) and ensure that the rights of traditional inhabitants to fish traditionally are protected; noting that management measures may be applied to traditional fishing for the purpose of conserving a species if necessary (Article 20).

The Torres Strait Treaty enables either country to specify individual fisheries where common conservation and management arrangements should apply (Article 22). The Torres Strait Treaty also defines catch sharing arrangements for these fisheries (Article 23). The fisheries that 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 dugong and turtle traditional subsistence fisheries (for conservation purposes).

During the reporting period, Australia and Papua New Guinea agreed that catch-sharing arrangements were not required for prawn, Spanish mackerel and pearl shell fisheries.

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 Guinea 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” adjacent 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 Protected Zone and in certain waters outside but near the Protected Zone. This measure has been in place since 1988.



5 FISHERIES

Sea-based resources are important to Torres Strait Islander and Aboriginal people. 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. The relative importance of each group varies between island communities.

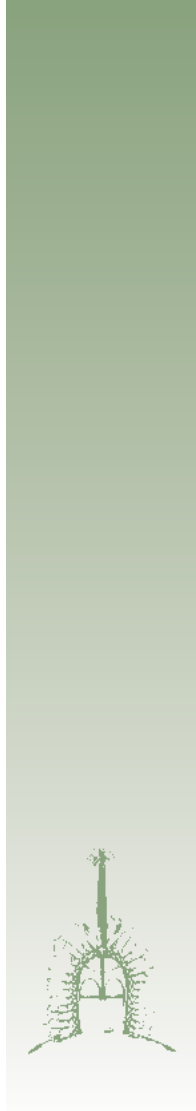
The most common subsistence fishing activities undertaken by traditional inhabitants include hand lining for finfish and diving for many species including tropical rock lobster. Other means of obtaining seafood include:

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

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

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.

The PZJA at its 23rd meeting in April 2014 acknowledged and supported the aspirations of 100 per cent ownership of Torres Strait fisheries by Torres Strait Islander and Aboriginal Traditional Owners. The Torres Strait Regional Authority continues to lead on the development of strategies to increase ownership of access and participation in Torres Strait commercial fisheries.



Non-traditional inhabitants can only gain access to a fishery by purchasing or leasing an existing Torres Strait Fishing Licence or leasing a Torres Strait Sunset Fishing Licence.

Further information about licencing for fisheries in the Australian jurisdiction of the Protected Zone by both traditional inhabitants and non-traditional inhabitants is available at <https://www.pzja.gov.au/licences>.

The fisheries managed under the *Torres Strait Fisheries Act 1984* are:

- 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 Sea Cucumber (Bêche-de-mer) Fishery
- Torres Strait dugong and turtle subsistence fisheries (for conservation purposes)

The condition of both the biological and economic status of fish stocks in the Torres Strait is independently evaluated by the Australian Bureau of Agricultural and Resource Economics and Sciences. *Fishery status reports* outline the results of the evaluations and can be accessed at <https://www.agriculture.gov.au/abares/products>.



TORRES STRAIT PRAWN FISHERY

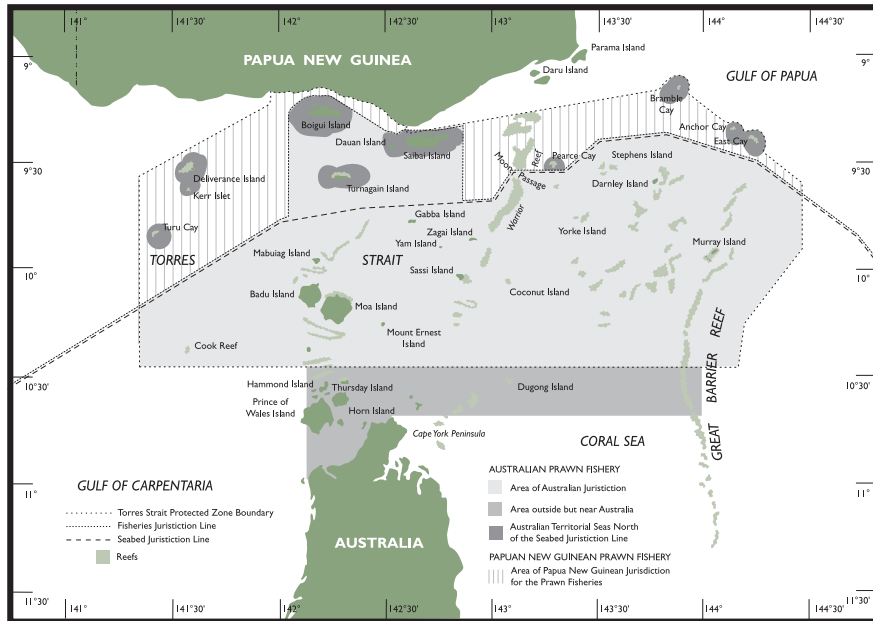


Figure 3. Area of the Torres Strait Prawn Fishery

Description of the fishery

The Torres Strait Prawn Fishery (Figure 3) is one of the most valuable commercial fisheries in the Torres Strait. The key species of the fishery are brown tiger and blue endeavour prawns. Species taken as by-product include red spot king prawns, Moreton Bay bugs and squid. This fishery is subject to catch sharing arrangements under the Torres Strait Treaty, although to date, neither party has sought to access cross endorsement under a catch sharing arrangement.

The prawn and bug catch for the fishery in the 2019 and 2020 is detailed in Table 2. The fishing season is from 1 February to 1 December each year. The Gross Value of Product (GVP) for the fishery decreased substantially in the 2019–20 financial year from \$11.2 million in 2018–19 to \$3.3 million (Table 3). While the 2019 fishing year produced the highest catch since 2008, the higher catches were largely between February and June, returning high GVP for 2018–19. Cold store inventories remained high into 2020 and, when coupled with the effects of COVID-19 throughout 2020, dampened fishing effort and catch in the 2020 fishing season (Table 4), significantly lowering GVP in 2019–20.



Table 2. Prawn and bug catches in the prawn fishery for the 2019 and 2020 season (Source: Logbook data)

Species	Catch (tonnes)	
	2019	2020
Blue endeavour prawns	298	60
Brown tiger prawns	514	203
King prawns	11	2
Other prawns	2	0
Total prawn	824	265
Bugs	15	4
Total	839	269

Table 3. TSPF GVP for 2018–19 and 2019–20

Financial Year	Value ¹
2018–19	\$11.2 million
2019–20	\$3.3 million

The prawn fishery is the only cost recovered fishery in the Torres Strait. Fishers are charged a levy to recover certain costs of management in line with AFMA’s annual Cost Recovery Implementation Statement.

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 total amount of net that fishers can use are restricted.

Fishers use the otter trawl method, where two, three or four trawl nets are towed by the fishing vessel. Fishing occurs in the eastern part of the Torres Strait at night and only during the prescribed fishing season.

The Torres Strait Prawn Fishery handbook provides a guide for fishers on management arrangements and is updated periodically. An annual data summary is also published for the fishery. These resources are available on the PZJA website (www.pzja.gov.au).

¹ Value is gross value of production (GVP) in Australian dollars.



In 2015, the Torres Strait Prawn Fishery bycatch action plan was updated, and a bycatch and discard workplan was implemented for the fishery.

The workplan aims to:

- Respond to ecological risks assessed through the Ecological Risk Assessment for the Effect of Fishing and other assessment processes.
- Avoid interactions with high risk, protected and traditionally important species, particularly species listed under the EPBC Act and listed species of interest to Aboriginal and Torres Strait Islanders.
- Reduce discarding of target species to as close to zero as practically possible.
- Minimise overall bycatch in the fishery.

The above workplan objectives are pursued by:

- Targeted risk management measures;
- Protecting important habitat for vulnerable marine species through spatial management;
- Testing the relative effectiveness of different and new Bycatch Reduction Devices (BRDs) and increasing the uptake of the most effective BRDs;
- Improving the quality of scientific data collected in the fishery;
- Improving fisher's reporting of bycatch and threatened, endangered and protected species (TEP) interactions; and
- Regulating fishing gear specifications.

A harvest strategy for the fishery was approved by the PZJA in 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. Through the 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).

In 2019, the TSPMAC agreed that the triggers and decision rules in the harvest strategy should be reviewed, as the current triggers do not adequately indicate trends in stock biomass. This review process commenced during the period and will result in an updated harvest strategy being considered by the PZJA in the 2021–22 financial year.



Condition of the fishery

For 2019, the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) determined the Brown tiger prawn stock was not subject to overfishing, while Blue endeavour prawn was uncertain (Patterson *et al* 2020). The uncertainty was because a stock assessment had not been undertaken in the blue endeavour prawn component of the fishery since 2009.

Operators are fishing well below the allocated fishing days. The number of fishing days used by Australian fishers is detailed in Table 4. Papua New Guinea, which is entitled to 25 per cent of the annual Total Allowable Effort, did not seek to utilise catch sharing during the reporting period. The number of fishing days and catches in 2020 were influenced by COVID-19 impacts on markets.

Table 4. TSPF effort (fishing days) for the 2019–2020 fishing seasons (Source: Logbook data)

Year	Days fished
2019	2625
2020	1033

The amount of prawns caught in the fishery declined from 1999 until 2009 as a direct result of decreasing fishing activity. Since 2009, the annual prawn catch has been around 400–500 tonnes, with two lower catch years in 2011 and 2017 and two higher catch years in 2015 and 2019 (Figure 4). The fluctuations in total catch since 2009 are largely linked to fluctuations in fishing effort.

Economic conditions tend to influence the actual fishing effort used in the Torres Strait Prawn Fishery from year to year, including the state of stocks and prawn prices in the Queensland East Coast Trawl Fishery (ECTF), in which most Torres Strait licence holders also hold a licence.

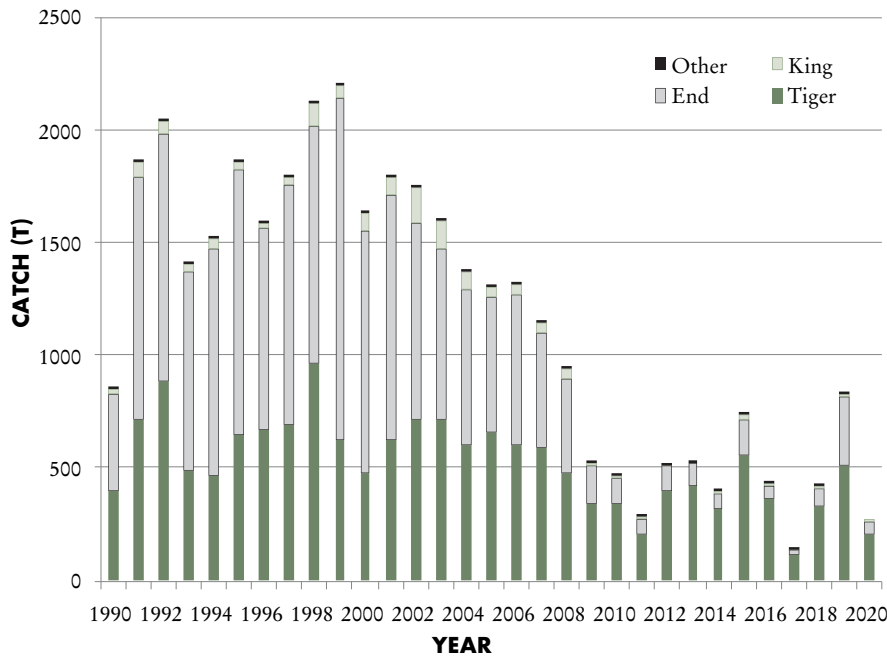


Figure 4. Annual catches of all prawn species in the prawn fishery 1990 to 2020, data is presented by fishing season (Source: Logbook data 1990 to 2020)

Strategic assessment—update

The prawn fishery was accredited under the EPBC Act as an approved wildlife trade operation in 2013, valid until 4 August 2017. In 2017, the Torres Strait Prawn Fishery received a ‘List of Exempt Native Specimens’ or LENS exemption for 10 years, noting the low effort in the fishery, and lower risk under the current management arrangements. AFMA provides annual updates on management of the fishery as part of the 10 year LENS.



TORRES STRAIT TROPICAL ROCK LOBSTER FISHERY

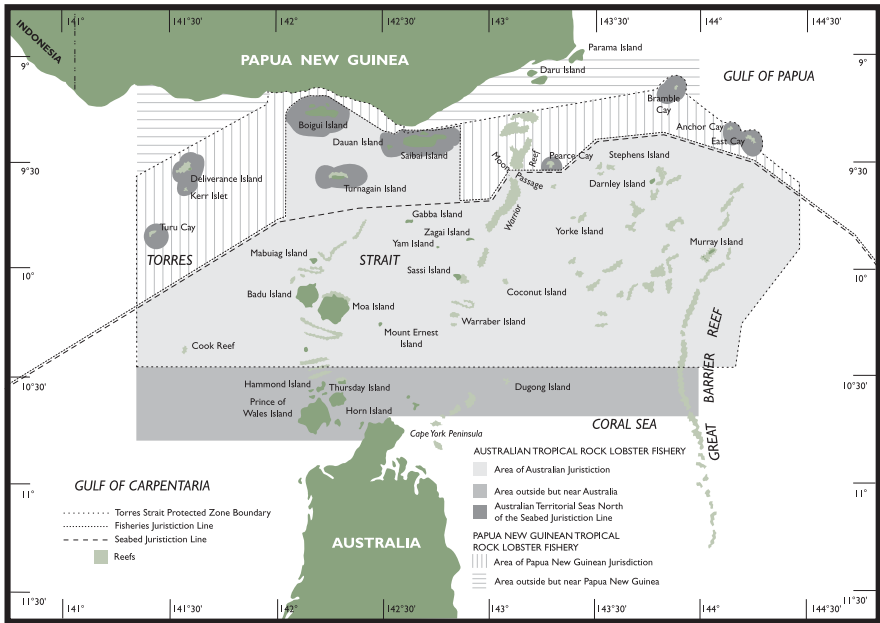


Figure 5. Area of the Torres Strait Tropical Rock Lobster Fishery

Description of the fishery

The Torres Strait Tropical Rock Lobster (TRL) Fishery (Figure 5) is the most valuable commercial fishery in the Torres Strait. Ornate lobster (*Panulirus ornatus*) is an important species to both traditional and non-traditional fishers. This fishery is subject to catch sharing arrangements under the Torres Strait Treaty.

Divers work from dinghies, free diving on shallow reef tops or use hookah equipment (surface supplied air) to dive deeper areas of the fishery. Lobster is collected by hand and short hand spear or loops. Scoop nets are also used in 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 to 30 September in the following year; and the use of hookah gear is permitted from 1 February and subject to periodic moon-tide closures that fall three days either side of the full or new moon between the months of February and September. The majority of the catch is taken between March and August.



Management arrangements

A number of significant changes have been made to the management of the fishery during the reporting period.

The Torres Strait Tropical Rock Lobster Fishery Harvest Strategy was developed in line with the *Commonwealth Fisheries Harvest Strategy Policy and Guidelines 2018* and implemented in November 2019. It replaced the 2008 interim Harvest Strategy and sets out the management actions needed to achieve agreed fishery objectives. The Harvest Strategy describes performance indicators used for monitoring the condition of the stock, along with the fishery-independent survey, stock assessment procedures and rules applied to determine the recommended biological catch and the total allowable catch (TAC) for each fishing season.

Ongoing efforts to improve fishery dependent data collection and analyses for the fishery have been undertaken during the reporting period, including ongoing use of the fish receiver system.

Condition of the fishery

ABARES reported the status of the lobster stocks in the Protected Zone as ‘not overfished’ and ‘not subject to overfishing’ (Patterson *et al.* 2020). The stock assessment of the TRL Fishery undertaken in 2019 found that the stock had recovered following a period of low recruitment in the fishery. The assessment model estimated the 2019 spawning biomass to be approximately 4,467t or 93 per cent of the estimated unfished biomass (relative to 1973), which is well above the agreed target reference point (65 per cent of unfished biomass).

The global TAC for 2019–20 season was set at 582t. Of this amount, 435t was allocated to Australian fishers (TIB—288t; TVH—147t) and 60t allocated to cross-endorsed PNG fishers. Eighty seven tonnes was allocated to PNG to fish exclusively in PNG waters.

Due to the COVID-19 pandemic and subsequent border closures, PNG fishers did not access their apportionment of 60t in Australian waters during the 2019–20 season. COVID-19 disrupted the supply chain of TRL to the main export market for Australia in early 2020.

Details regarding catch limits, actual catch and value in 2018–19 fishing season are outlined in Table 5 and a graph showing the annual level of catch in the fishery since 1989 at Figure 6.



Table 5. Statistics for the tropical rock lobster fishery 2018–19 fishing season

Fishery statistics	Total Allowable Catch (tonne) ²	Catch (tonne) (TIB/TVH ³)	Value (million) ⁴
Australian waters (TVH, TIB)	494.85	415.6	\$20.5
Australian waters (PNG cross-endorsed)	50	0	0
PNG waters	96.15	167.0 ⁵	n/a
Total fishery	641	583	n/a

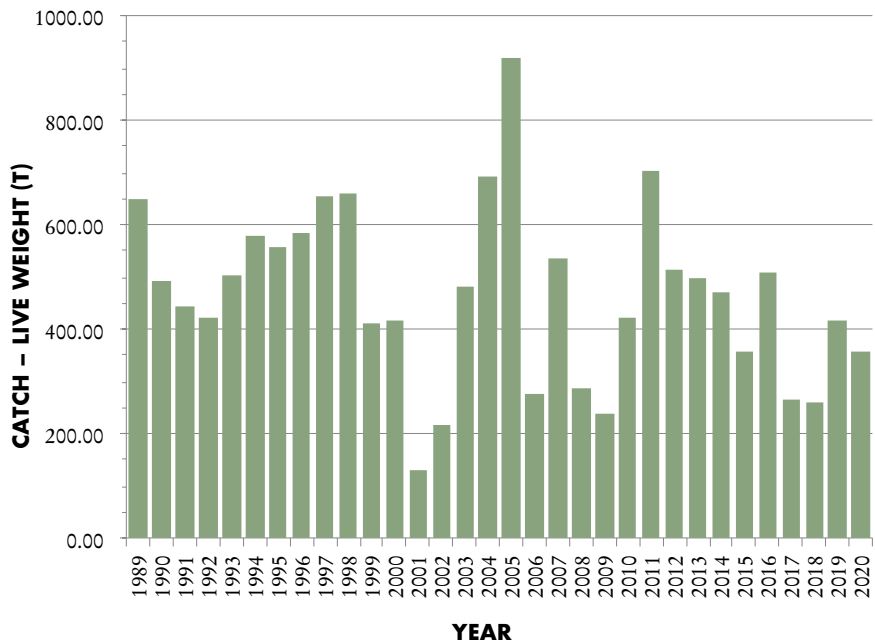


Figure 6. Annual catch of tropical rock lobster 1989 to 2020 in the Australian Jurisdiction (source: logbook data, docket book data and catch disposal record and other records)

- Fishery statistics are provided by fishing season, unless otherwise indicated. The fishing season for the Australian fishery is 1 December–30 September. The fishing season for the PNG fishery is 1 January–31 December.
- TVH—transferable vessel holder boat licence, TIB—Traditional Inhabitant boat licence.
- Value is gross value of production (GVP) as per Patterson *et al* (2020).
- Catch taken inside and outside the Torres Strait Protected Zone in the PNG part of the fishery for the period 1 December 2018 to 30 November 2019; Patterson *et al* (2020), p. 335.



Strategic assessment—update

The TRL Fishery was accredited as an approved wildlife trade operation on 21 December 2017 until 18 December 2020 under section 303FN (Part 13A) of the EPBC Act. This accreditation is subject to the conditions and recommendations that were developed by the Department of Agriculture, Water and the Environment.

TORRES STRAIT FINFISH FISHERY

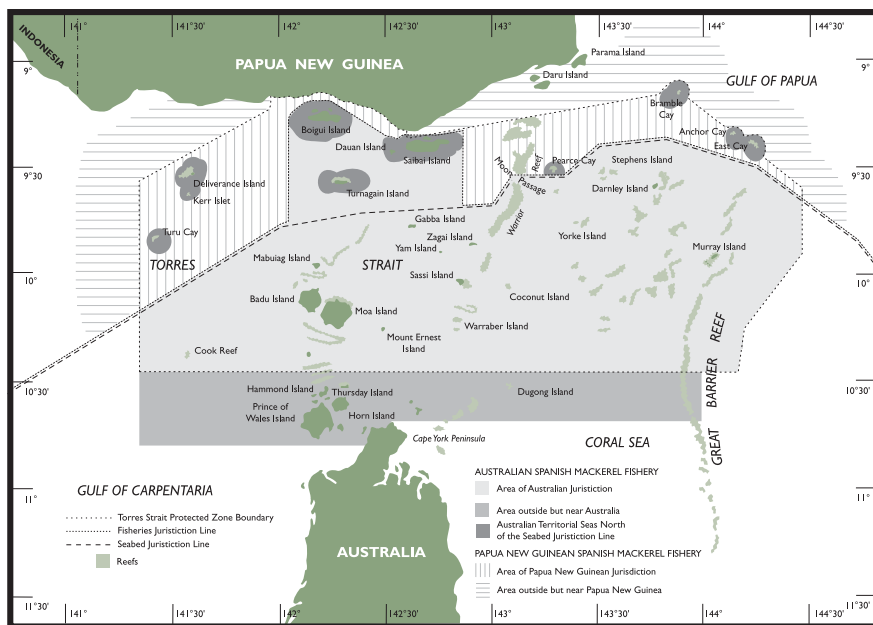


Figure 7. Area of the Spanish mackerel fishery



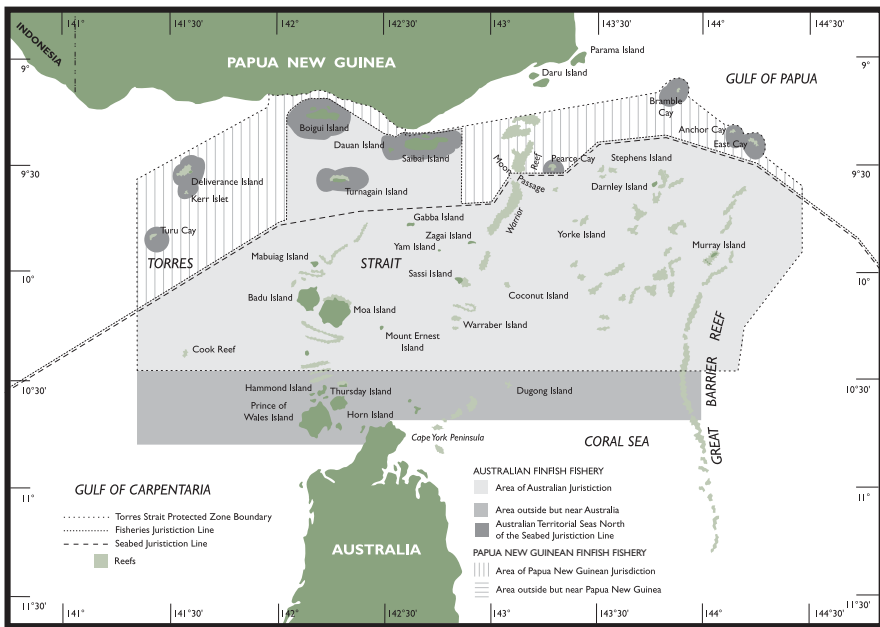


Figure 8. Area of the reef line fishery

Description of the fishery

The Torres Strait Finfish Fishery is a multi-species commercial fishery in which a range of finfish species are harvested. Several hook fishing methods are used in the fishery including trolling and hand lining. The use of nets is not permitted in the Protected Zone or the outside but near area.

The Torres Strait Finfish Fishery comprises two sectors: the Spanish mackerel sector (Figure 7) and the reef line sector (Figure 8). The Spanish mackerel sector of the fishery is subject to catch sharing arrangements with Papua New Guinea under the Torres Strait Treaty. Both the Spanish mackerel and reef line sectors operate mainly in the eastern Torres Strait. The reef line fishery is closed in western Torres Strait.

The target species in the Spanish mackerel sector is the narrow-barred Spanish mackerel (*Scomberomorus commerson*). Other species caught in the fishery, and covered in the catch allowance, include school mackerel, grey mackerel, spotted mackerel, and shark mackerel. Mackerel are fished by trolling baits and lures, or by handlines from dories/dinghies operating either to a primary vessel or stand-alone.



Reef line fishers target a basket of four coral trout species, which have the greatest value (common coral trout *Plectropomus leopardus*, passionfruit coral trout *Plectropomus areolatus*, bar-cheek coral trout *Plectropomus maculatus* and blue-spot coral trout *Plectropomus laevis*). Also caught are small numbers of medium value species including barramundi cod, mixed reef fish such as emperors, tropical snappers and several species of rock cod. These species are mostly caught using handlines from a dory operating to a primary boat, or smaller dinghies of less than 6m.

Annual catches of Spanish mackerel and coral trout declined during the lead up to the 2007–08 buyout of transferable licences in the finfish fishery to secure fishing for the traditional inhabitant sector. Prior to the buyout the catch of finfish was variable, with annual catches of up to 400 tonnes. Catches of Spanish mackerel and coral trout have been relatively low since the buyout commenced in 2007.

The Australian traditional inhabitant sector now holds 100 per cent of the access to finfish resources allocated to commercial fishing in the Protected Zone with 40 per cent of the Spanish mackerel entitlements made available to Papua New Guinea each fishing season (in accordance with catch sharing arrangements under the Torres Strait Treaty).

While mackerel and reef line species are commercially targeted by a small number of traditional inhabitants, a larger number of traditional inhabitants fish for these species opportunistically for subsistence.

Sunset licences (licences that are not subject to renewal beyond a lease period) are issued by the PZJA to the TSRA each year for the purpose of leasing seasonal catch allowances to non-traditional inhabitant fishers. Decisions on the leasing of licences and catch allowances are made by the TSRA Board with advice from a Finfish Quota Management Committee comprising Board Members and other relevant community representatives. During this process, the Board also makes recommendations on any conditions that should apply to the leased licences, including catch limits per licence and spatial closures, which would then be regulated by AFMA through conditions placed on the sunset licences.

Catch reporting by the traditional inhabitant sector was voluntary through the docket book system up until 1 December 2017. Since this time, the PZJA has implemented a mandatory Fish Receiver System which makes it compulsory for all Torres Strait commercial catch to be landed to a licensed Fish Receiver (excluding catch taken in the prawn fishery). Under the Fish Receiver System, all commercial catch must be weighed and catch reports completed at the point of first landing and supplied to AFMA. Reporting on finfish catches by traditional inhabitant fishers through the Fish Receiver System has been successful.



The quantity of finfish taken for traditional purposes, including for subsistence, is poorly understood. Historically, only a small proportion of traditional inhabitant fishers with finfish-endorsed licences participated in the finfish fishery. Since 1 December 2017, the Fish Receiver System has indicated that between 20–30 traditional inhabitant fishers have been commercially fishing for mackerel or reef-line species.

The catch and catch limits for the fishery are provided in Table 6 and Figure 9 and 10. Figure 9 and 10 show the trends in catches since the 2002–03 season. The ‘real value’⁶ of the fishery was \$0.9 million in 2018–19.

Table 6. Total allowable catch and catch for the Torres Strait Finfish Fishery in 2019–20 (Source: AFMA CatchWatch; data period 1 July 2019 to 30 June 2020)

Species Name	Agreed Total Allowable Catch (TAC)(kg)	Reported Catch (kg)	Available TAC (kg)	% TAC Caught
Traditional Inhabitant Boat licence (TIB) sector				
Spanish Mackerel	20,000	1,566	18,434	8%
Coral Trout	103,900	2,261	101,639	2%
Basket Species	No catch limit	224	n/a	n/a
Sunset licence (Sunset) sector				
Spanish Mackerel	62,000	54,097	7,903	87%
Coral Trout	31,000	30,075	925	97%
Basket Species	5,000	4,483	0	90%

⁶ ‘Real value’ is gross value of production (GVP) across all species in the fishery, in Australian dollars and by financial year.

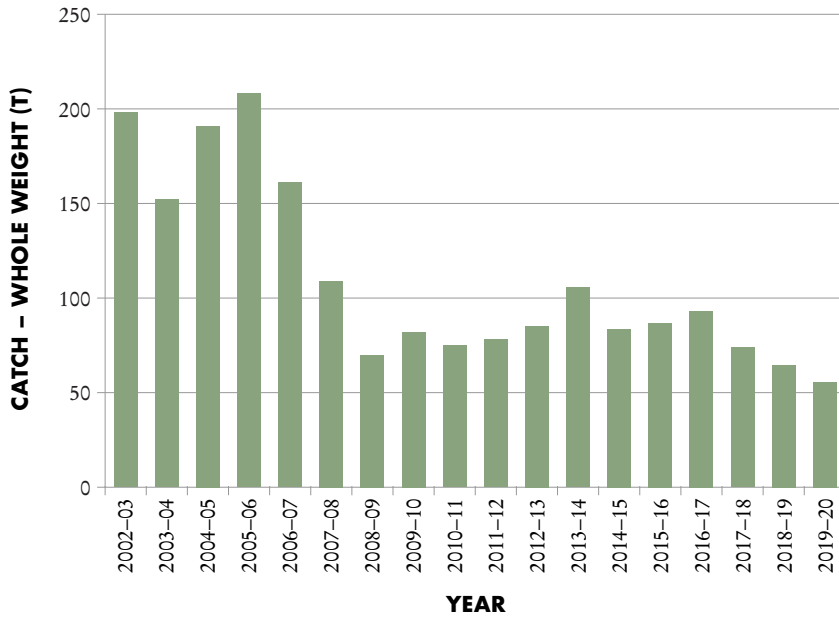


Figure 9. Catch history for Spanish mackerel in the Torres Strait Finfish Fishery

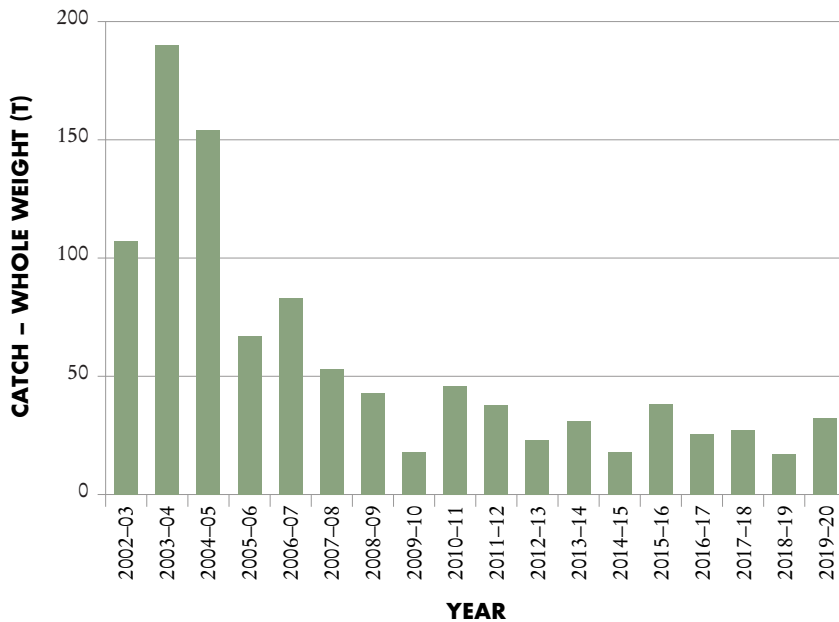


Figure 10. Catch history for coral trout species in the Torres Strait Finfish Fishery



Management arrangements

Expansion of the number of licenses in the finfish fishery is limited to traditional inhabitants to maximise fishing opportunities. Non-traditional inhabitant operators can only access the fishery by leasing limited annual catch allowances under sunset licences. Management controls for the harvest of finfish species include:

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

The *Torres Strait Finfish Fishery Management Plan* was introduced in 2013. Additionally, the Spanish mackerel and reef line sectors of the fishery are also subject to requirements under separate fishery management notices; Spanish mackerel fishery species—*Fisheries Management Instrument No. 14* and reef line fishery species—*Fisheries Management Instrument No. 8*. These define allowable activities, gear types and restrictions.

Condition of the fishery

During the reporting period ABARES 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.* 2020).

Strategic assessment—update

The fishery was most recently accredited as an approved wildlife trade operation under the EPBC Act in December 2017 to 18 December 2020. As part of the accreditation, a number of recommendations to improve the sustainability of the fishery were made by the Department of Agriculture, Water and the Environment.



TORRES STRAIT PEARL SHELL FISHERY

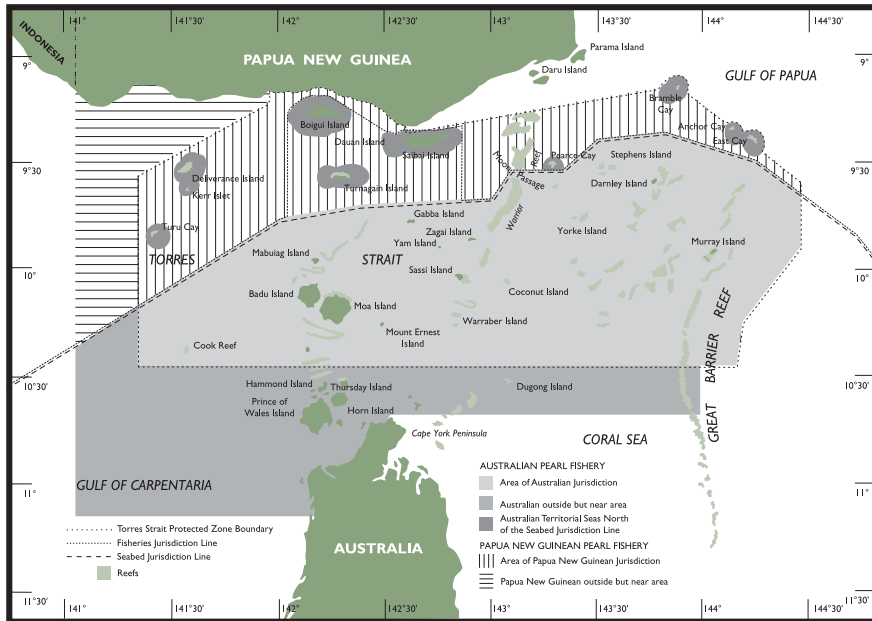


Figure 11. Area of the Torres Strait Pearl Shell Fishery

Description of the fishery

In the Torres Strait Pearl Shell Fishery (Figure 11) wild pearl oyster is collected during the months of October through to March for use in pearl culture farms. The main species is the gold-lipped pearl oyster (*Pinctada maxima*), although at least six other species, including the black-lipped pearl oyster (*Pinctada margaritifera*) and the winged pearl oyster (*Pteria sterna*), are also collected. Most divers use hookah equipment (surface supplied air).

Only a few licence holders specialise in collecting pearl oyster. However, there are also a number of licence holders that collect pearl oyster while fishing for lobster. Table 10 in Section 6 of this report outline the number of licences with pearl shell endorsements.

Aquaculture farming of pearl oyster in the Torres Strait is regulated and managed by Fisheries Queensland.



Management arrangements

Expansion in the number of licences in the fishery is limited to traditional inhabitants to maximise fishing opportunities. Provisions apply to existing non-traditional inhabitants operating in the fishery, including strict boat replacement policies and linking tender boats with specific primary boats.

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 pearl oyster by any method other than collection by hand.

To revitalise the fishery a review of the management regulations was completed in late 2014. The review was undertaken to assess the viability of reducing size limits for pearl oyster down to 100 mm minimum (whilst maintaining the 230 mm maximum for gold-lipped pearl oyster). To allow the commercial assessment of the viability of using smaller pearl oyster the PZJA issued eight developmental permits in March 2016 allowing the harvest of no more than 2000 gold-lipped pearl oyster sized between 100 and 130 mm. Approximately 800 pearl oyster was reported to have been harvested during the permit period, with roughly 15–20% of oyster between 100–130 mm. The pearl oyster harvested were used for seeding in aquaculture but due to the low level of smaller size pearl oyster harvested, any benefits to the aquaculture sector in relation to improved profitability could not be determined.

Condition of the fishery

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

Strategic Assessment—update

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



TORRES STRAIT CRAB FISHERY

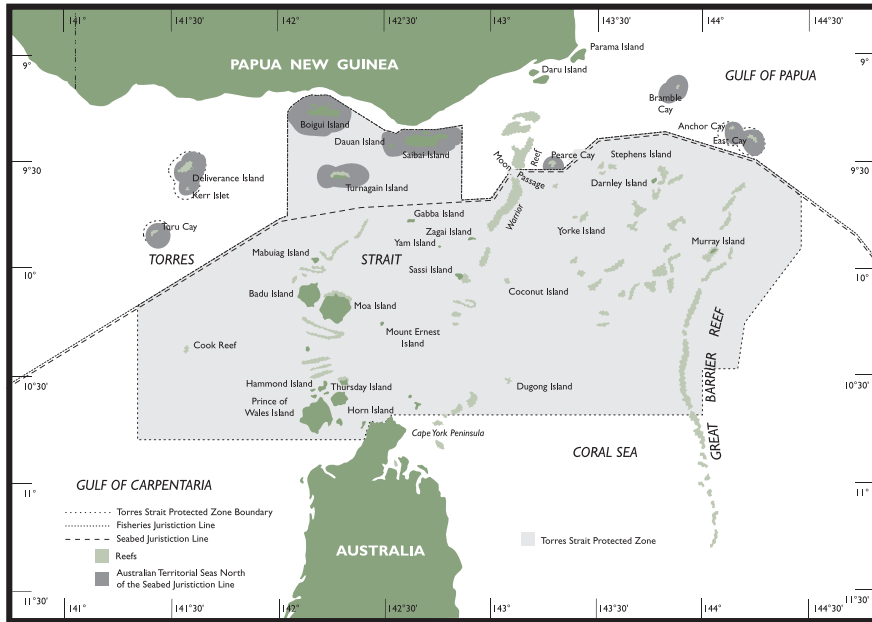


Figure 12. Area of the Crab Fishery

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

Expansion of the number of licences in the crab fishery is limited to traditional inhabitants to maximise opportunities. 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.



During the reporting period, there were 112 licence holders endorsed to operate in the Torres Strait Crab Fishery. These endorsements are, in nearly all cases, one of a package of multiple endorsements even though the licence holder is active in only one or two fisheries. Of these licence holders only three have landed crab to fish receivers since 2018.

Condition of the fishery

The status of crab stocks in the Protected Zone is uncertain due to the lack of catch data on which to base an assessment. In 2008 a stock assessment took place around Saibai and Boigu Islands. Recommendations at that time were that the crab fishery could sustainably support one full time fishing operation only, and that a further survey be conducted again at some future date.

Strategic assessment—update

The crab fishery has not been assessed under the EPBC Act. It may in the future, depending on activity in the fishery.

TORRES STRAIT TROCHUS FISHERY

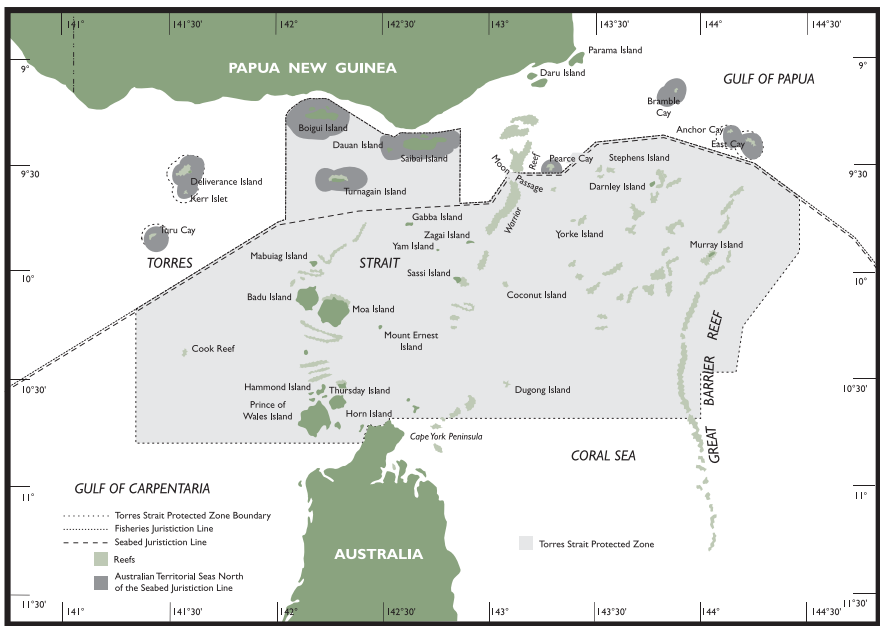


Figure 13. Area of the Trochus Fishery



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 members. 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 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

The take of trochus is restricted to hand collection—the use of an 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 is 150 tonnes annually.

Condition of the fishery

ABARES classified trochus in the Protected Zone as not subject to overfishing but acknowledged uncertainty about the biomass of the stock (Patterson *et al.* 2020) because of low fishing effort and catch driven by sporadic market demand. This has resulted in a lack of fishery data making stock assessment unviable.

Whilst there were 82 traditional inhabitant boat licences with a trochus endorsement there was no catch reported during the reporting period. Catch in 2018 was 0.04t and none in 2019. 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 less than 10 tonnes per year; well below the annual catch limit of 150 tonnes.



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 its patchy distribution and difficulty to locate. Further investigation of this uncertainty is not warranted at this time with persistent low levels of effort in the fishery.

Strategic assessment—update

The trochus fishery is accredited as an approved wildlife trade operation under the EPBC Act until 9 October 2026.

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

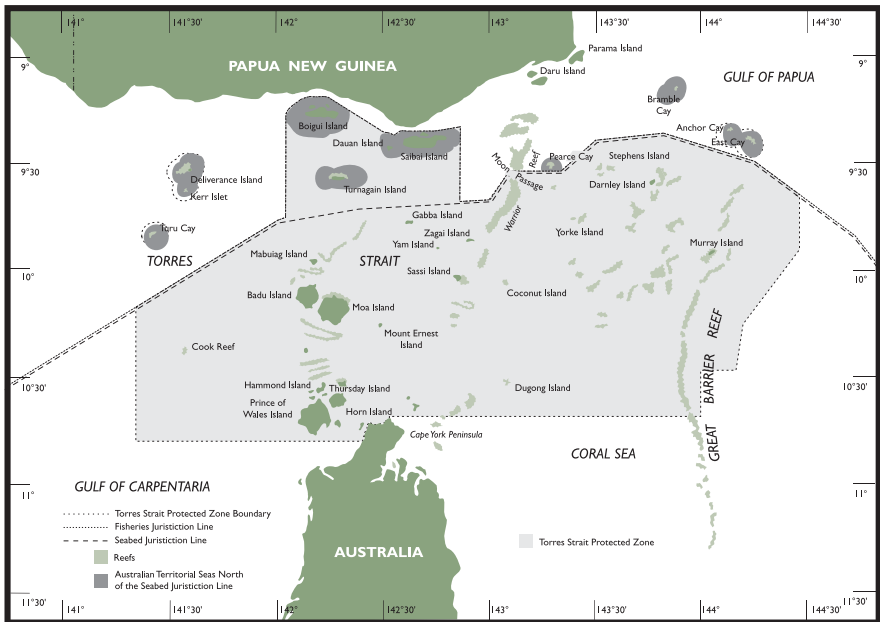


Figure 14. Area of the Bêche-de-mer Fishery



Description of the fishery

The Torres Strait Sea Cucumber (Bêche-de-mer) Fishery has a history dating back to at least the 19th century. In 1916–17 558 tonnes of Bêche-de-mer was exported from Thursday Island with 124 boats registered to collect it. The fishery is now accessed only by traditional inhabitants and it forms an important source of income for those fishers.

Characteristic of Bêche-de-mer (BDM) fisheries throughout the world, there have been several “booms and busts” in the Torres Strait fishery. The life-history of sea cucumbers and the fact they are easily collected make them vulnerable to overfishing, which has occurred in the Torres Strait in the past.

Bêche-de-mer is mainly collected by free-divers from dinghies or by people walking along reefs at low tide and collecting by hand. Once collected, the animal is gutted, cleaned and graded, and then either boiled, smoked or dried. This is a labour-intensive process carried out on processing vessels or at shore-based facilities.

Management arrangements

Expansion of the number of licences in the Bêche-de-mer fishery is limited to traditional inhabitants to maximise their opportunities; in February 2015 the sole non-traditional inhabitant licence was purchased by the Torres Strait Regional Authority with the commercial entitlements now 100 per cent held by the traditional inhabitant sector.

Bêche-de-mer 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 Bêche-de-mer must be under seven metres in length.

Commercial catch is limited for the year across the fishery (measured in wet weight gutted) and size limits of Bêche-de-mer also apply. Three species were closed to fishing; sandfish, black teatfish and surf redfish. The details of restrictions across the species are outlined in Table 7.

The black teatfish fishery, which was closed to fishing from 2003, has been opened twice for limited fishing trials in 2014 and 2015 under a 15 tonne total allowable catch (TAC). The TAC was exceeded within two weeks of the opening in 2014 and within eight days in 2015. Whilst reporting of catch by fishers improved significantly between 2014 and 2015 there was a significant lag between collection and reporting which undermined the ability to manage the fishery within the TAC. Fishing for black teatfish has been closed since 2016.



The total allowable catch for prickly redfish was reduced from 20 tonnes to 15 tonnes during 2017 due to sustainability concerns from previous overfishing and inadequate catch reporting. On 1 December 2017 a mandatory Fish Receiver System was implemented for all Torres Strait fisheries (except the Torres Strait Prawn Fishery). Under the Fish Receiver System, persons or businesses receiving (including buying) Torres Strait seafood must hold a Torres Strait Fish Receivers licence. Licenced Fish Receivers are only allowed to receive product from licenced Torres Strait commercial fishers. Licenced Torres Strait commercial fishers are only allowed to dispose of their catch to licenced Fish Receivers. The Fish Receiver System has improved the accuracy and timelines of catch reporting in the fishery and allows for better monitoring of total allowable catches.

A Bêche-de-mer Harvest Strategy was implemented in November 2019. It provides a framework for making evidence-based, precautionary and transparent decisions about the amount of Bêche-de-mer that can be caught in a fishing season. The Harvest Strategy sets out the objectives for the fishery, and how the fishery is monitored and assessed. It also sets out clear rules to guide the re-opening of fishing for a closed species if enough information becomes available. The Harvest Strategy provides greater certainty to fishers, traditional owners, communities, scientists and managers about how the fishery will be managed.

The new Harvest Strategy recommended changes to the starting TACs, conversion ratios and minimum size limits for some sea cucumber species. Species that were part of the 80 tonnes basket were assigned individual TACs, leading to a reduction of the basket species catch limit to 50 tonnes:

- i. deepwater redfish (5 tonnes);
- ii. hairy blackfish (5 tonnes);
- iii. greenfish (40 tonnes);
- iv. due to the recent interest in curryfish species, the three curryfish species were removed from the 80 tonnes basket and classified in a 60 tonnes curryfish basket TAC. This includes the common curryfish, curryfish vastus and curryfish ocellatus species.

The new starting TACs and conversion ratios were implemented for the 2020 fishing season through a variation of licence conditions on 1 January 2020.

The changes to the minimum size limits will be implemented through the amendment of the *Torres Strait Fisheries Management Instrument No 15*.



Table 7. Catch limits of commercially harvested species in the Torres Strait Bêche-de-mer (Sea Cucumber) Fishery (catch limit source: BDM Harvest Strategy, size limits source: Torres Strait Fisheries Management Instrument No. 15)

Species/Basket	New TAC ⁷ under the new BDM Harvest Strategy	Pre BDM HS TAC
Prickly redfish	15 tonnes	15 tonnes
White teatfish	15 tonnes	15 tonnes
Deepwater redfish	5 tonnes	Part of 80 tonnes limit
Hairy blackfish	5 tonnes	Part of 80 tonnes limit
Greenfish	40 tonnes	Part of 80 tonnes limit
Curryfish species (common, <i>vastus</i> and <i>occelatus</i>)	60 tonnes combined TAC (basket)	Part of 80 tonnes limit
Black teatfish	0 tonnes (CLOSED)	0 tonnes
Surf redfish	0 tonnes (CLOSED)	0 tonnes
Sandfish	0 tonnes (CLOSED)	0 tonnes
All other BDM species	50 tonnes combined TAC (basket)	Part of 80 tonnes limit



7 Catch limits are implemented through licence conditions / all species listed as ‘combined 50’ have a combined catch limit across the species of 50 tonnes with species specific trigger limits applicable to some species.

Table 8 Size limits of commercially harvested species in the Torres Strait Bêche-de-mer (Sea Cucumber) Fishery (size limits source: Torres Strait Fisheries Management Instrument No. 15)

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

*also known as tigerfish

Condition of the fishery

The fishery was assessed in 2019 (Patterson *et al.* 2020) as not subject to overfishing (noting that there is uncertainty about some species managed within a basket total allowable catch, taken in 2018). Aside from sandfish, a stock abundance survey conducted in 2009 indicated that sea cucumbers overfished in the past are now recovering. A new survey will be completed in late 2020.

The total catch in the fishery in 2019 was 37.3 tonnes, down from 64.3 tonnes in 2018, largely as a result of increased targeting of tropical rock lobster and reduced targeting of curryfish.



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 resource depletion of sandfish stocks occurred on Warrior Reef. This has been confirmed through several fishery-independent surveys that were conducted to assess the status of 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, which may have been the result of illegal harvesting.

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

Illegal fishing by Papua New Guinea nationals at Warrior Reef has reduced since the closure of the Papua New Guinea bêche-de-mer fishery in October 2009. Australia continues to conduct surveillance of the reef and maintain a response capability in the area through AFMA's Foreign Compliance program. Coastwatch flights also cover the area daily.

When the sandfish harvest was closed in 1998, fishing 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. 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 Bêche-de-mer species were either stable or increasing in abundance. The catch limits that were set for the various species of Bêche-de-mer to ensure that the stocks either remain healthy or improve are outlined in Table 7.

The status of species in the fishery varies. Table 9 provides a summary of species status as assessed by ABARES.



Table 9. Summary of species status within the Torres Strait Bêche-de-mer (Sea Cucumber) Fishery (Patterson et al. 2020)

Species	Comments
Black teatfish	The species has been assessed as not overfished and not subject to overfishing. The most recent survey estimates (2009) indicate that the stock has recovered and is no longer overfished. The species has been closed to fishing since 2016.
Prickly redfish	The species has been assessed as not overfished and not subject to overfishing. The catch limit was reduced from 20t to 15t in 2017 due to sustainability concerns from previous overfishing and inadequate catch reporting. Catch has decreased from 12.4t in 2018 to 11.8t in 2019. There are relatively stable densities across the surveys carried out in the fishery in 1995, 2002, 2005 and 2009.
Sandfish	This species has been assessed as overfished but not subject to overfishing. The most recent published survey (2010) showed density is still below the 1995 estimate. Illegal catch taken by Papua New Guinea nationals has been reported in recent years but not for 2018.
White teatfish	This species was assessed as not overfished and not subject to overfishing. Catch was reported in 2019 of 1.6t. There were relatively stable densities in 1995, 2002 and 2005 surveys, potentially increasing between 2005 and 2009 surveys.
Other Bêche-de-mer species (18 species)	The level of fishing mortality and biomass of the stock as a whole were considered to be uncertain. Catch was reported across these species in 2019 was 23.7t less than half of reported catch from 2018 (47.8t).

Strategic assessment—update

The fishery was accredited under the EPBC Act on 20 December 2017 as an approved wildlife trade operation until 18 December 2020. It is subject to conditions and management recommendations.



TORRES STRAIT DUGONG AND TURTLE FISHERIES

Description of the fisheries

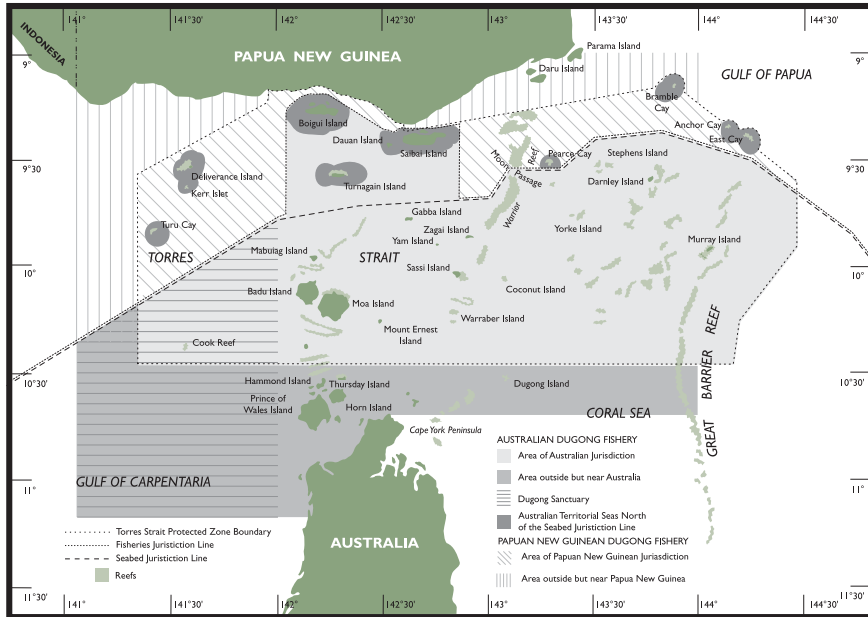


Figure 15. Area of the Torres Strait Dugong Fishery

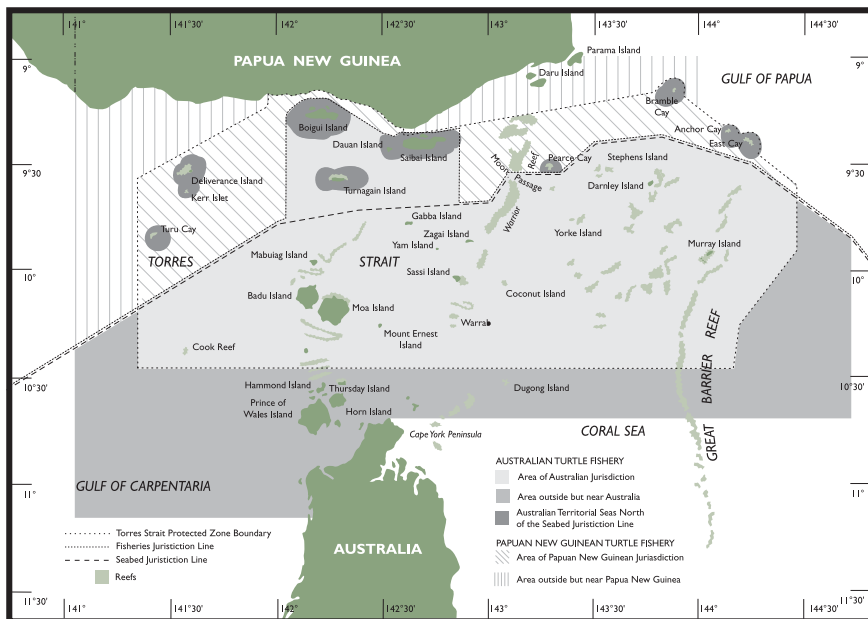


Figure 16. Area of the Torres Strait Turtle Fishery



The Torres Strait dugong and turtle fisheries (Figure 15 and 16) are allowed under Native Title legislation. Commercial take of these species is not permitted. Traditional take of dugong and turtle is an important part of the traditional way of life and a source of protein in the diet of traditional inhabitants of the Torres Strait.

Whilst the subsistence importance of these species is recognised, measures are still implemented to ensure the sustainable use is prioritised through legislated management arrangements across both Australia and Papua New Guinea and through the Torres Strait Community Based Dugong and Turtle Management Plans.

Strong partnerships have been established between Traditional Owners and research institutions for monitoring projects including dugong and turtle aerial population assessment surveys and marine turtle tagging, nesting effort and success, hatching success and hatchling production surveys.

Management arrangements

The legislated management arrangements for the Torres Strait Dugong and Turtle fisheries are outlined in *Torres Strait Fisheries Management Instrument No. 16*, summarised below.

Community-based Dugong and Turtle Management Plans, developed by individual Torres Strait Islander communities, are being implemented on a voluntary basis throughout the Torres Strait with the assistance of the Torres Strait Regional Authority. Each community plan includes a range of culturally based management arrangements that have been agreed to by the respective community. The Torres Strait Ranger Program is used to monitor the implementation of the Plans. For more information visit the TSRA website at www.tsra.gov.au.

Regulations currently implemented in the Torres Strait Dugong and Turtle fisheries include:

- Dugongs and turtles may only be taken by a traditional inhabitant in the course of traditional fishing;
- Dugongs may only be taken using the traditional spear (wap);
- Dugong hunting is banned in a large area of western Torres Strait which has been set aside as a dugong sanctuary (see map); and
- Dugongs and turtles cannot be taken or carried in a commercially licensed fishing boat greater than 6m in length (boats under 6m with a Traditional Inhabitant Boat licence are permitted to take and carry turtle and dugong).



Habitat

Seagrass meadows are the primary food resource for dugongs and green turtles as well as the ‘nurseries’ of critical young fish stocks. 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 and the largest and most abundant seagrass area on Earth.

These meadows continue to be assessed and monitored by the Torres Strait Regional Authority’s Land and Sea Management Unit in partnership with James Cook University, Centre for Tropical Water and Aquatic Ecosystem Research.

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 100,000 individuals (Hagihara *et al.* 2016). Additionally, Marsh *et al.* (2015) used several lines of evidence to re-evaluate the sustainability of the Torres Strait dugong harvest. The evidence suggested that the harvest is sustainable. Dugong relative density was significantly higher in 2013 than in any other survey year and the index of Area of Occupancy has trended slightly upward since 1987. The proportion of calves in 2013 was the highest recorded. Genetic diversity is high and 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 but exclude the waters of the eastern Torres Strait. Since 2011 surveys also included areas of the western waters of the Torres Strait. TSRA’s Land and Sea Management Unit had proposed to instigate an aerial survey in November 2020.

Turtle: Six of the world’s seven species of marine turtle, all of which are of conservation concern, are found across the Torres Strait region. These include the green, hawksbill, flatback, loggerhead, leatherback and olive ridley. The green and hawksbill turtles are the most significant species in the broader region (green for meat and eggs, hawksbill for eggs).



The hawksbill is listed as critically endangered and green as endangered. These two species are high bio-cultural species and under enormous pressures for ongoing survival. Aerial surveys conducted in November 2013 found a substantial population of approximately 600,000 adult and sub-adult turtles (Hagihara *et al.* 2016), of which 95 per cent were estimated to be green turtles using the foraging grounds of the western and central Torres Strait and excluding the eastern Torres Strait (Fuentes *et al.*, 2015).

Despite seemingly large green turtle stock estimates across Torres Strait, the nesting site of Raine Island (which accounts for nearly 90 per cent of all green turtles across the Great Barrier Reef (GBR) system, including Torres Strait) is reporting near 100 per cent feminization of hatchlings over recent years due to sand temperatures above 32 degrees.

TSRA's Land and Sea Management Unit will further develop research initiatives and partnerships focused on green turtle recovery across the Northern GBR in a joint research/management project from July 2020 through to June 2023, focusing on stock recovery.

There are no population estimates for the hawksbill turtle in the Torres Strait. Most research efforts have been focused on the Howlick Islands of the central GBR. In 2020, TSRA, along with primary support from the Department of Agriculture, Water and the Environment, and in partnership with the Great Barrier Reef Marine Park Authority and the Queensland State government, intend to instigate a three-year monitoring program to ascertain population estimates on hawksbill turtles.

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 (no longer in operation), AFMA Environment Committee (no longer in operation) 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. Given the non-commercial nature of these fisheries, finalising the strategic assessment has not been a priority.



6 LICENSING

In order to fish in a Torres Strait commercial fishery a person must hold a licence, or number of licences. There are different types of licences associated with commercial fishing in the Torres Strait fisheries. These include: Fishing Licences, Processor-Carrier Boat Licences, and Master Fisherman's Licences.

Further information on the licensing arrangements in place for commercial fishing in the Torres Strait is available online at <https://www.pzja.gov.au/licences>.

FISHING LICENCES

Licences are issued with an endorsement that identifies the fishery (or fisheries) in which a licence holder can operate, including boats authorised to operate under the licence.

There are three categories of fishing licences issued in the Australian jurisdiction of the Protected Zone:

- Traditional Inhabitant Licences
- Torres Strait Fishing Licences
- Torres Strait Sunset Fishing Licences.

Only Australian traditional inhabitants are eligible for Traditional Inhabitant licences. Torres Strait Fishing licences and Torres Strait Sunset Fishing licences are the only avenue by which non-traditional inhabitants take fish from commercial fisheries in the Torres Strait. Non-traditional inhabitants can access commercial fisheries by purchasing or leasing an existing (transferable) Torres Strait Fishing licence or by leasing a Torres Strait Sunset Fishing licence.

Figures relating to fishing licences issued or renewed by the PZJA at 30 June 2020 are provided in Tables 10 to 12. Figures provided for fishing licences exclude those held by non-traditional inhabitants in “no boat” status, where there are no registered vessels attached to the licence.



Table 10. Number of endorsements in each Torres Strait fishery held by traditional inhabitants⁸

Fishery	Licenses
Bêche-de-mer	150
Crab	112
Tropical rock lobster	452
Reef line	177
Spanish mackerel	199
Pearl shell	72
Trochus	82

Table 11. Number of Torres Strait Fishing Licences by fishery

Fishery	Primary	Tenders	Total
Bêche-de-mer ⁹	1	2	3
Tropical rock lobster	12	33	45
Pearl shell	9	13	22
Prawn	60	0	60

Table 12. Number of Torres Strait Sunset Fishing Licences by fishery¹⁰

Fishery	Primary	Tenders	Total
Finfish—reef line	6	23	29
Finfish—Spanish mackerel	7	22	29

⁸ Note that some licence holders held multiple commercial fishery endorsements, and not all licence holders were active within the fishery (or fisheries) for which they held a commercial endorsement.

⁹ This licence was purchased by the Torres Strait Regional Authority in February 2015. Whilst these licences exist, they are not active and no vessels are linked to them. The licences in this fishery are now 100 per cent held by traditional inhabitants.

¹⁰ The finfish fishery is the only fishery in the Protected Zone that has sunset licences.



TORRES STRAIT CARRIER AND PROCESSOR-CARRIER BOAT LICENCES

There are three classes of Torres Strait Carrier and Processor-Carrier Boat Licences that regulate how commercial seafood products are carried and/or processed in the Torres Strait: Class A, B and C.

- A processor-carrier boat licence class A is required to allow a primary boat to process and carry product taken by its associated tender boats.
- A carrier boat licence class B allows the identified boat to carry product taken by other licensed operations but does not allow the product to be processed while aboard.
- A processor-carrier boat licence class C allows the identified boat to process and carry product taken by other licensed operations.

Figures relating to processor-carrier boat licences issued or renewed by the PZJA at 30 June 2020 are provided in Table 13.

Table 13. Number of processor-carrier Licences by fishery

Fishery	Class A	Class B	Class C
Bêche-de-mer	0	7	9
Crab	3	3	6
Tropical rock lobster	20	14	10
Reef line	13	3	7
Spanish mackerel	16	8	6
Pearl shell	6	6	6
Trochus	1	4	3



MASTER FISHERMAN'S LICENCES

A Master Fisherman's Licence is required to be held by at least one person aboard each boat endorsed on a Torres Strait Fishing Licence or a Torres Strait Sunset Licence¹¹. Each Master Fisherman's Licence must be endorsed for the fishery in which the boat is operating. Figures relating to Master Fisherman's licences issued or renewed by the PZJA at 30 June 2020 are provided in Table 14.

Table 14. Number of Master Fisherman's licences by combinations of fishery endorsement

Fishery	Number of licences
Tropical rock lobster	62
Tropical rock lobster, reef line, Spanish mackerel and pearl	5
Tropical rock lobster, reef line and prawn	1
Tropical rock lobster, reef line, Spanish mackerel, pearl and prawn	3
Tropical rock lobster and Spanish mackerel	1
Tropical rock lobster, Spanish mackerel and pearl	13
Tropical rock lobster and pearl	2
Reef line	4
Reef line and Spanish mackerel	3
Reef line, Spanish mackerel and prawn	1
Reef line and prawn	13
Spanish mackerel	4
Pearl	2
Prawn	55
Bêche-de-mer	0
Bêche-de-mer, Crab, Tropical rock lobster, reef line and Spanish mackerel	1
Total	

¹¹ Note: Where a Primary boat operating as part of a Primary-Tender licence package only receives fish from its associated tenders, a Master Fisherman's License is only required for each of the tender boats operating in the licence package.



7 SURVEILLANCE AND ENFORCEMENT

The PZJA has a responsibility to undertake surveillance and enforce the provisions of the Act, rules and regulations in the Protected Zone. The purpose of the Protected Zone Compliance 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 PZJA to protect the resources of the Protected Zone.

In July 2018, AFMA took over the responsibility, from Fisheries Queensland, for undertaking domestic compliance activities of the Protected Zone Compliance Program on behalf of the PZJA. This change was part of a broader range of initiatives undertaken to improve the efficiency of the PZJA administration, which also included the transfer of licensing responsibilities to AFMA, from Fisheries Queensland, in July 2015.

Domestic compliance operations in the Protected Zone are often supported by other government agencies including Australian Border Force, Royal Australian Navy, Queensland Water Police Service and Torres Strait Rangers. Using other government resources improves the ability to patrol and enforce fisheries legislation throughout the Protected Zone.

While the Fish Receiver System and Vessel Monitoring Systems were introduced in 2017, these fishery management tools have continued to enhance the compliance programme.

Throughout the 2019–20 reporting period 51 boats were inspected and 34 Fish Receiver premises were inspected. These inspections were undertaken during the course of patrols and as part of other AFMA compliance operations.

In addition, a number of official warnings were issued for relatively minor offences, in line with AFMA's policy of encouraging voluntary compliance by those active in the commercial fishing sector. Five more matters that were more serious were referred to the Commonwealth Director of Public Prosecutions (CDPP) to be assessed.

AFMA officers also participated in stakeholder / community meetings throughout the Protected Zone increase education and awareness of compliance related issues and foster voluntary compliance with licence conditions and the fisheries management arrangements in place.



8 RESEARCH PROGRAM

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

To ensure that research is conducted in a culturally appropriate manner in the Torres Strait, a *Procedural framework for undertaking research in the Torres Strait (2018)* is provided to people undertaking research. The procedural framework was developed during the reporting period and updates the previous *Guide to researchers working in the Torres Strait (2012)*. The *Procedural framework for undertaking research in the Torres Strait* is available online at <https://www.pzja.gov.au/resources/research>.

Projects were funded by AFMA and the TSRA based on recommendations of the Torres Strait Scientific Advisory Committee. Reports from the projects can be accessed at publications.csiro.au/rpr/home. Details of the projects conducted during the reporting period are provided in Table 15.



Table 15. Research projects conducted in the Protected Zone presented by the financial year they were commenced

Research project	Research provider	Principal Investigator	Financial year completed ¹²
Commenced in 2018–19			
2018 stock assessment and total allowable catch estimation for the Torres Strait tropical rock lobster	CSIRO	Eva Plaganyi-Lloyd	(2021/2022)
Commenced in 2019–20			
Climate variability and change relevant to key fisheries in the Torres Strait ¹³	CSIRO	Leo Dutra	(2020/2021)
Spanish mackerel stock assessment with appraisal of environmental drivers	Sea Sense	Rik Buckworth	(2020/2021)
Measuring non-commercial fishing (indigenous subsistence fishing and recreational fishing) in the Torres Strait in order to improve fisheries management and promote sustainable	Debe Mekik Le Consultancy	Kenny Bedford	(2020/2021)
Management Strategy Evaluation for the Torres Strait Prawn Fishery Season Dates	Clive Turnbull	Clive Turnbull	(2020/2021)
Stock survey of Torres Strait Bêche-de-mer species	CSIRO	Nicole Murphy	(2020/2021)
Enhancing biological data inputs to Torres Strait Spanish mackerel stock assessment	QDAF	Jo Langstreth	2019/2020

¹² Financial years in brackets indicate when the project is due for completion.

¹³ Three projects were extended into 2020–21 due to COVID-19 disrupting progress of these projects.



9 FINANCIAL ARRANGEMENTS

The costs for managing PZJA fisheries during the 2019–20 financial year were incurred by:

- AFMA for fisheries management, licensing, compliance and PZJA committee administrative functions
- Fisheries Queensland for providing support and advice in relation to PZJA fisheries management
- Torres Strait Regional Authority for providing support and advice in relation to PZJA fisheries management, and capacity building in Torres Strait communities.

Expenses, and revenue, for AFMA and Fisheries Queensland for the financial year 2019–20 are outlined in Table 16, noting that:

- The financial performance of AFMA 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 difference between the two; however, it is unlikely to be significant.
- The Torres Strait Prawn Fishery is the only Torres Strait fishery for which some costs of management are recovered. As such, reported cost recovered expenses are only applicable to the Torres Strait Prawn Fishery.

To support activities associated with Torres Strait fisheries, levies and/or licence fees are collected from traditional and non-traditional commercial fishers that offset costs. Revenue is also sourced from the collection of rent for office space in buildings held by the agencies on Thursday Island. Implementation of the initial capital items program, fully funded by the Australian Government, 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 Australian Government’s capital items include:

- An AFMA fisheries management and compliance office on Thursday Island (which includes commercial space leased to TSRA and DAWE for non PZJA-related functions)
- three residences on Thursday Island for the use of AFMA staff.



During the reporting period TSRA 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 in their annual reports. The Torres Strait Regional Authority does not report the financial costs associated with PZJA activity separately as it forms part of its day-to-day program activity.

DAWE 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.

Table 16. 2019–20 Australian Fisheries Management Authority (AFMA)—Fisheries Queensland (FQ) cost-sharing details

Description	AFMA	FQ	Total
Expenses			
Salaries & other staff related costs	\$1 028 882	\$25 271	\$1 054 153
Consultants & contractors	\$46 399		\$46 399
Meetings, travel & subsistence	\$189 372	\$953	\$190 325
Research contracts	\$592 372		\$592 372
Vessel Monitoring	\$22 832		\$22 832
Other administrative costs	\$459 336		\$459 336
Overheads	\$436 254		\$436 254
Total Expenditure (excluding Cost Recovery)	\$2 775 447	\$26 224	\$2 801 671
Cost Recovered Expenses (Torres Strait Prawn)			
Fisheries Management			
Species & environmental management	\$46 088		\$46 088
Risk Management	\$3 388		\$3 388
Management advisory forums	\$30 396		\$30 396
Consultation & engagement	\$3 529		\$3 529
Strategy, governance & leadership	\$8 610		\$8 610
<i>Sub-total Fisheries Management</i>	<i>\$92 011</i>	<i>\$0</i>	<i>\$92 011</i>



Description	AFMA	FQ	Total
Data Collection & Management			
Observers	\$37 767		\$37 767
Vessel Monitoring	\$25 856		\$25 856
Logbook data	\$17 352		\$17 352
Data management	\$6 703		\$6 703
<i>Sub-total Data Collection & Management</i>	<i>\$87 678</i>	<i>\$ 0</i>	<i>\$87 678</i>
Licensing & Revenue Collection			
Licensing administration & revenue collection	\$18 432		\$18 432
Licensing administration & revenue collection systems	\$16 454		\$16 454
<i>Sub-total Licensing & Revenue Collection</i>	<i>\$34 886</i>	<i>\$ 0</i>	<i>\$34 886</i>
Policy Support			
Policy	\$6 841		\$6 841
<i>Sub-total Policy Support</i>	<i>\$6 841</i>	<i>\$ 0</i>	<i>\$6 841</i>
<i>Total Cost Recovered Expenditure</i>	<i>\$221 416</i>	<i>\$0</i>	<i>\$221 416</i>
Total expenditure	\$2 996 863	\$26 224	\$3 023 087
Revenue			
Fee for service (Torres Strait Prawn Levy)	\$371 986		
Licence fees	\$87 175		
Other revenue	\$155 396		
Total Revenue	\$614 558	\$0	\$614 558
Net Expenditure	\$2 382 305	\$26 224	\$2 408 529



ANNEXE A: PZJA AND PZJA CONSULTATIVE COMMITTEE MEETINGS¹⁴

Protected Zone Joint Authority

- Meeting 32: 8 October 2019, teleconference
- Meeting 33: 19 November 2019, teleconference
- Meeting 34: 20 January 2020, teleconference

Torres Strait Scientific Advisory Committee

- 25 November 2019, teleconference
- 11 March 2020, teleconference

Torres Strait Prawn Management Advisory Committee

- 17 September 2019, teleconference
- 29–30 January 2020, Cairns

Torres Strait Hand Collectables Working Group

- 1–2 August 2019, Thursday Island
- September 2019, Out of Session Meeting
- 21 February 2020, Thursday Island

Torres Strait Tropical Rock Lobster Working Group

- 12 December 2019, Thursday Island

Torres Strait Finfish Working Group

- 27–28 November 2019, Thursday Island

Torres Strait Tropical Rock Lobster Resource Assessment Group

- 10–11 December 2019, Thursday Island
- 7 May 2020, teleconference

Torres Strait Finfish Resource Assessment Group

- 31 October–1 November 2019, Cairns
- 27–28 November 2019, Thursday Island



¹⁴ The PZJA and PZJA consultative groups also considered decisions outside of meetings. PZJA and PZJA consultative group meeting and out-of-session decisions are published online at <https://www.pzja.gov.au/pzja-and-committees/pzja-meeting-papers-and-records>.

ANNEXE B: REFERENCES

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

Hagihara, R., Cleguer, C., Preston, S., Soltzick, S., Hamann, M., Shimada, T. and Marsh, H. (2016) *Improving the estimates of abundance of dugongs and large immature and adult-sized green turtles in Western and Central Torres Strait*. Report to the National Environmental Science Programme. Reef and Rainforest Research Centre Limited, Cairns (53pp.).

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.

Marsh, Helene & Grayson, Jillian & Grech, Alana & Hagihara, Rie & Soltzick, Susan. (2015). Re-evaluation of the sustainability of a marine mammal harvest by indigenous people using several lines of evidence. *Biological Conservation*. 192. 324-330. 10.1016/j.biocon.2015.10.007.

Patterson, H, Larcombe, J, Nicol, S and Curtotti, R. 2018, Fishery status reports 2018, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra. CC BY 4.0.

Patterson, H, Williams, A, Woodhams, J and Curtotti, R 2019, Fishery status reports 2019, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra. CC BY 4.0. <https://doi.org/10.25814/5d80431de3fae>.

Patterson, H, Larcombe, J, Woodhams, J and Curtotti, R 2020, Fishery status reports 2020, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra. CC BY 4.0. <https://doi.org/10.25814/5f447487e6749>.

Soltzick, 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.).

Wilson, Lindsay & Queensland. Dept. of Education (1993). *Kerkar lu: contemporary artefacts of the Torres Strait Islanders*. Dept. of Education, Brisbane.

Wilson, Lindsay & Queensland. Department of Education (1988). *Thathilgaw emeret lu: a handbook of traditional Torres Strait Islands material culture*. Dept. of Education, Queensland, Brisbane.



ANNEXE C: 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>



Common name	Scientific Name
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>Bobadschia 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>Bobadschia 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

ABARES	Australian Bureau of Agricultural and Resource Economics
AFMA	Australian Fisheries Management Authority
BRDs	Bycatch Reduction Devices
CDPP	The Commonwealth Director of Public Prosecutions
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EPBC Act	<i>The Environment Protection and Biodiversity Conservation Act 1999</i>
GVP	Gross Value of Product
LENS	List of Exempt Native Specimens
RBC	Recommended biological catch
RNTBC	Registered Native Title Body Corporates
Protected Zone	Torres Strait Protected Zone
PZJA	Protected Zone Joint Authority
TAC	Total Allowable Catch
TEPs	Threatened, Endangered and Protected species
The Act	<i>The Torres Strait Fisheries Act 1984</i>
The Torres Strait Treaty	<i>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 that was signed at Sydney on 18 December 1978</i>
TSPZ	The Torres Strait Protected Zone
TSRA	The Torres Strait Regional Authority
WTO	Wildlife Trade Operation



TORRES STRAIT
PZJA
PROTECTED ZONE
JOINT AUTHORITY

