NORTHERN TERRITORY GOVERNMENT

Department of PRIMARY INDUSTRY and RESOURCES

Application for reassessment under the EPBC Act of the

Northern Territory Timor Reef Fishery

September 2019

This Report has been prepared for the Department of the Environment and Energy as required for assessment under Part 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999*.

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1. Background

In 2013, the Northern Territory Department of Primary Industries and Fisheries (DPIF) submitted a document to the Department of Sustainability, Environment, Water, Populations and the Community (DSEWPaC) (now Department of the Environment and Energy [DoEE]) for assessment of the NT Timor Reef Fishery (TRF) under Parts 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The assessment resulted in an amendment to the list of exempt native specimens (LENS) to allow export of product from the TRF for a period of five years, until 9 August 2018.

To ensure continued good management practices in the TRF, three recommendations were agreed to between DSEWPaC and DPIF as part of the approval. This report provides DoEE with an update on the changes in management arrangements and progress of the TRF against the recommendations since its last assessment.

The DPIF had undergone a number of changes to its structure since 2013 and is now the Department of Primary Industry and Resources (DPIR). Wherever previous documents referred to DPIF, it will be interpreted and referred to as DPIR in this assessment application.

Previous Assessments

The TRF was due for reassessment in August 2018, however noting DPIR and industry had embarked on a comprehensive review of the management arrangements for the offshore snapper fisheries (TRF and Demersal Fishery [DF]), DoEE granted the TRF two short-term extensions by amendment to the LENS in July 2018 and March 2019. The TRF continues to operate under the TRF Management Framework (2015) however DPIR anticipates that new management arrangements will be implemented within the next 12 months.

Re-assessment Process

This report, produced by the DPIR, provides an update to DoEE on the progress of the TRF against the recommendations arising from the previous Ecologically Sustainable Development (ESD) assessment in 2013, outlining any changes to the management arrangements and progress against each recommendation.

For a comprehensive understanding of the management arrangements in place for the TRF, please refer to:

TRF Management Framework
https://dpir.nt.gov.au/__data/assets/pdf_file/0005/383270/timor-reef-fishery-management-framework-2015.pdf

Northern Territory *Fisheries Regulations 1992*
http://www.nt.gov.au/d/Fisheries/index.cfm?header=Legislation

Copies of the annual Status of Key Northern Territory Fish Stock Reports are available to download at the link below by searching for “fish status report”:
http://www.nt.gov.au/d/publications/index.cfm?fj=Fisheries%20Status%20Report

2. Overview of the Timor Reef Fishery

The Timor Reef Fishery (TRF) operates in the offshore waters of Northern Territory in a zone covering roughly 8400 nm to the north-west of Darwin (Figure 1). The TRF targets a range of tropical snappers (*Lutjanus* spp. and *Pristipomoides* spp.) in particular, Saddletail Snapper (*L. malabaricus),* Crimson Snapper (*L. erythropterus*) and Goldband Snapper (*P. multidens*).

The TRF is managed primarily by output (catch based) controls to ensure catches are maintained at sustainable levels. An Individual Transferable Quota (ITQ) management system was implemented in the TRF in 2011 with Total Allowable Catch (TAC) limits for Red Snapper (Crimson Snapper and Saddletail Snapper), Goldband Snapper and Group Species. Grouped species includes all fish other than Barramundi (*Lates calcarifer*), King Threadfin (*Polydactylus macrochir*), Spanish Mackerel (*Scomberomorus commerson*), shark and Mud Crabs (*Scylla* spp.) Any protected species that are caught must be released.

The management arrangements are described fully in the TRF Management Framework. There is no restriction on the number of licences in the fishery, however there are minimum unit holding requirements as legislated in the TRF Management Plan. Currently there are 13 licences issued, however there are currently only 3-6 vessels actively fishing.

The TRF is a multi-gear fishery. Most of the catch is taken using baited traps, but hand lines, drop-lines and demersal long-lines may also be used. Trawl gear was also trialled in the fishery between 2014 and 2018.

In 2017, TRF licensees harvested 837.3 t of fish, with Red Snapper and Goldband Snapper constituting most of the harvest 40.2% and 29.7%, respectively. Cods (5.3%), trevally (4.1%), Red Emperor (3.8%), Mangrove Jack (3.4%) and Robinsons Sea Bream (2.1%) were the most common by-product species.

The total value of the catch by this fishery in 2017 was estimated at $4.9 million.

Relatively few recreational fishers, Indigenous fishers or Fishing Tour Operators (FTOs) fish outside 15 nm of the NT coast and there is little overlap in the harvest activities of the TRF and other marine user groups. However, the numbers of recreational and FTOs fishing these grounds has increased in recent times due to a combination of increases in boat size and improvements in technology and weather forecasting.

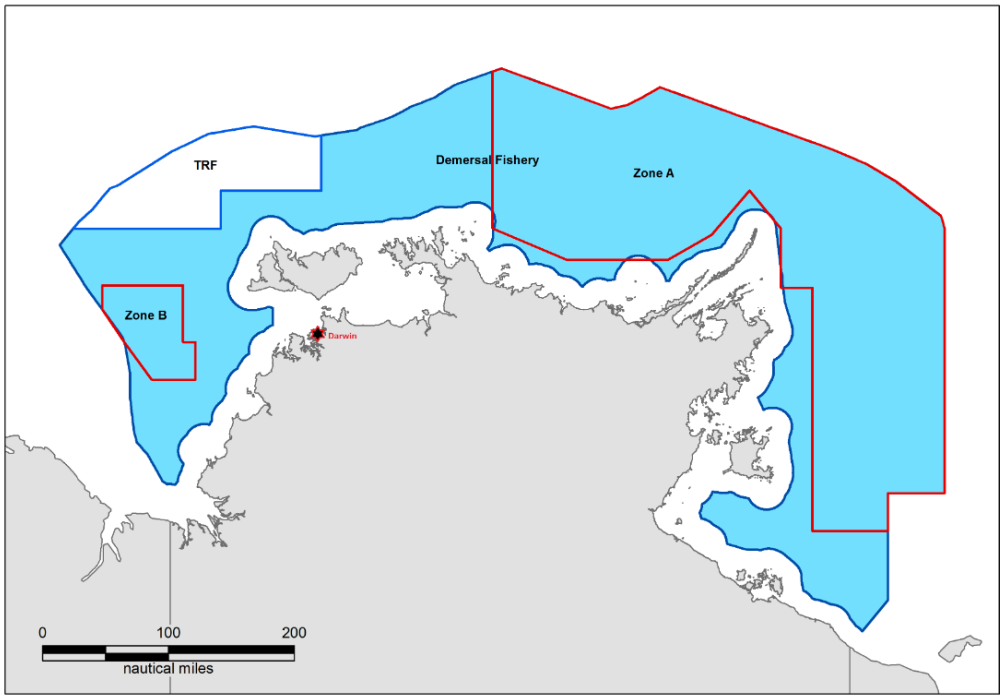

Figure 1. Map showing the boundaries of the Timor Reef Fishery off the Northern Territory. The red lines represent the two trawl zones (Zones A and B) of the Demersal Fishery.

3. Stock status

Annual Stock Status Reports for key NT fish species follow a nationally agreed framework (the latest status report, Report No. 119, was released in 2018). The information from these annual reports is incorporated into the National Status of Key Australian Fish Stocks reports which are released every two years (www.fish.gov.au).

Saddletail Snapper

Saddletail Snapper stock was recently assessed using a stochastic Stock Reduction Analysis (SRA) model with data up to 2016. The outputs of this model estimated biomass to be around 65% of unfished levels, well above conventional target levels. The model outputs also indicated that the current harvest rate of Saddletail Snapper is below that required to achieve maximum sustainable yield. Consequently, this species is unlikely to be recruitment overfished and the current level of fishing mortality is unlikely to cause overfishing. On the basis of the evidence provided above, the NT Saddletail Snapper stock is classified as a **sustainable stock.**

Crimson Snapper

Crimson Snapper was recently assessed using a stochastic SRA model with data up to 2016. The outputs of this model indicate that the stock was not overfished in 2016 and there was a high degree of certainty (90% probability) that the 2016 harvest rate was below that required to achieve MSY. The 2016 biomass was around 65% of unfished levels and consequently, this stock is unlikely to be recruitment overfished and the current level of fishing mortality is unlikely

to cause overfishing to occur. On the basis of the evidence provided above, the NT Crimson Snapper stock is classified as a **sustainable stock**.

Goldband snapper

The status of Goldband Snapper from the Arafura and Timor seas was assessed in 2018 using a stochastic SRA model. The outputs of this model estimated the biomass to be around 70% of unfished levels, well above conventional target levels. The model outputs also indicated that the current level of fishing mortality was below that required to achieve maximum sustainable yield. Consequently, this species is unlikely to be recruitment overfished and the current level of fishing mortality is unlikely to cause overfishing. On the basis of the evidence provided above, the NT Goldband Snapper stock is classified as a **sustainable stock**.

Secondary and tertiary species (by-product species)

With the exception of the key target species (Saddletail Snapper, Crimson Snapper and Goldband Snapper), the secondary and tertiary species encompass all remaining retained catch from the fishery. Catches of secondary and tertiary species fall within the 'Group species' quota for the TRF with the exception of Barramundi, King Threadfin, Spanish Mackerel, shark and Mud Crabs which must not be retained.

As outlined above, the most common secondary and tertiary species taken in the TRF are cods (Family Serranidae), trevally, Red Emperor (*Lethrinus lentjan*), Mangrove Jack (*Lutjanus argentimaculatus*) and Robinsons Sea Bream (*Gymnocranius grandoculus*).

Secondary and tertiary species are not currently assessed due to the inconsistent targeting of these species not providing a sufficient catch history to conduct a stock assessment.

4. Interactions with protected species

All TRF operators must record any interactions with threatened, endangered or protected species (TEPS) in a logbook (paper or electronic) and provide the returns to DPIR with their monthly catch logbook returns (if paper format). DPIR assesses these interactions annually. Interactions include capture, entanglement and collision.

The TRF operates beyond the geographic range of most TEPS and so the risk of interaction with this group of species is low. There were no interactions between traps/lines and TEPS recorded in 2017.

Between 2014 and 2018, the use of demersal and midwater trawl gear was trialled in the TRF. The use of bycatch reduction devices was required when using trawl gear and mandated by licence condition. Square mesh cod-ends were used voluntarily to reduce the retention of non-target species and increase the value of the landed product. For 2017, the logbook data for the TRF recorded 16 interactions with various species of sawfish (15 alive, one dead), 13 interactions with sea snakes (11 alive, two dead), nine hammerhead sharks (two alive, seven dead), eight sharks (two alive, eight dead), one Spotted Shovelnose (dead) and one stingray (dead).

All interactions with protected species are compiled and reported in Status of Key NT Fish Stocks Reports which are published annually.

5. Changes to management arrangements

Between 2014 and 2018, a trial to monitor, record and evaluate the ecological impact of demersal and midwater trawl gear in the TRF was undertaken. Any future trawl access in the TRF would be considered as part of the comprehensive review of the management arrangements which is being undertaken for the offshore snapper fisheries (DF and TRF).

The review of the existing management arrangements in the offshore snapper fisheries was instigated at the request of the then Offshore Snapper Fishery Advisory Committee (OSFAC) members in 2014. The primary drivers for this review included the development of a contemporary harvest strategy for the fisheries to underpin sustainable development, improve the validity of management, simplify administrative and reporting requirements, and meet the expectations of contemporary best practice as assessed by third party processes such as the Marine Stewardship Council.

Since the review was instigated in 2014, the OSFAC has endorsed a number of key elements including long-term and operational objectives, and the Harvest Strategy for the fishery.

As an important technical step in the process to develop the management arrangements, a scientific assessment of the population structure of key species was undertaken. Stock structure research was conducted by experts from Charles Darwin University and independent consultants in 2016 for the key species using analyses of the otolith chemistry and parasitology from fish samples collected throughout the offshore snapper fisheries. These techniques have been used by researchers in numerous stock structure projects on tropical fish species.

The research identified that all three key species have multiple stocks within the boundaries of the offshore snapper fisheries. Goldband Snapper had four spatially distinct stocks across the region (Figure 2a), whereas Saddletail Snapper had three spatially distinct stocks, and due to similarities in distribution and abundance it is assumed Crimson Snapper have the same stock boundary (Figure 2b).

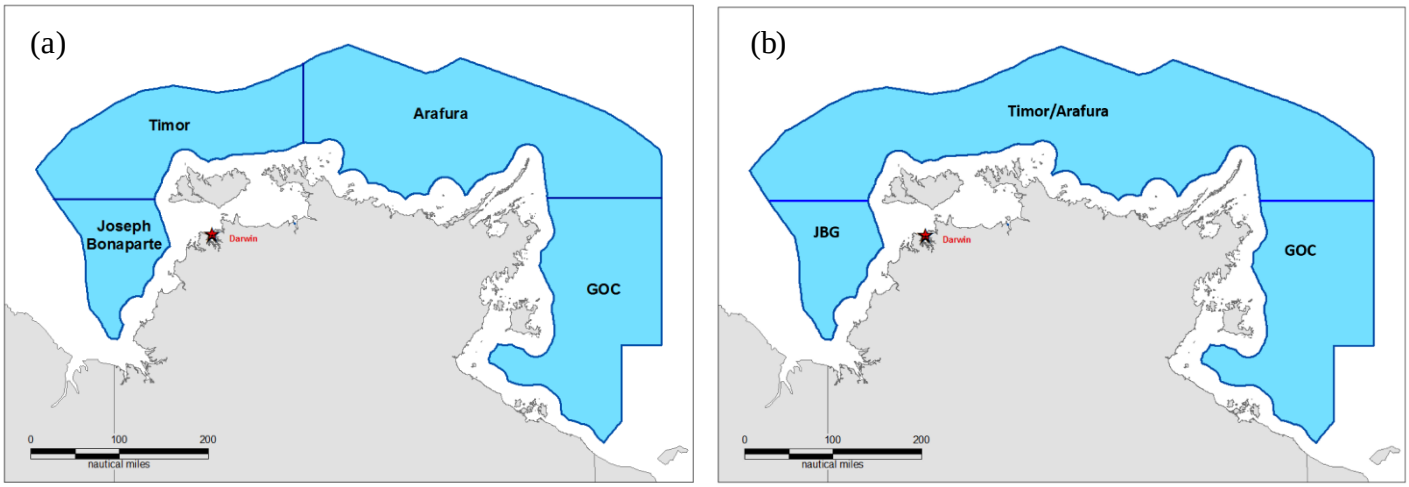

Figure 2. Schematic maps of spatially distinct stocks found for (a) Goldband Snapper and (b) Saddletail/Crimson Snapper identified during stock structuring analysis.

A detailed Ecological Risk Assessment (ERA) was also conducted (and peer reviewed) in 2017 by independent experts and then workshopped with stakeholders to identify critical issues and elicit objectives for management of the fisheries.

Independent expert review of the Harvest Strategy was also built into the process (completed in March 2018) and the final draft management framework stage is to be completed as the next step in the process.

The draft management framework has been prepared by DPIR in line with the objectives of the NT Fisheries Act and taking into consideration the scientific assessment for the fisheries including population structure of key species, ERA, review of the Harvest Strategy as well as outcomes from the OSFAC and feedback from industry. The draft management framework was provided to an independent reviewer and relevant industry members in May 2019, with industry invited to participate and contribute to the review process.

DPIR anticipates that the new management framework will be finalised by end of 2019 and come into effect by mid-2020.

6. Background Information and Reports

Department of the Environment and Energy assessment (2013)
http://www.environment.gov.au/marine/fisheries/nt/timor-reef-fishery

Northern Territory *Fisheries Act 1988* https://legislation.nt.gov.au/en/Legislation/FISHERIES-ACT

Northern Territory *Fisheries Regulations 1992*
https://legislation.nt.gov.au/Legislation/FISHERIES-REGULATIONS

Management Framework for the Northern Territory's Timor Reef Fishery (2015)
https://dpir.nt.gov.au/__data/assets/pdf_file/0005/383270/timor-reef-fishery-management-framework-2015.pdf

Timor Reef Fishery information page on Department of Primary Industries and Resources (NT DPIR) website https://nt.gov.au/marine/commercial-fishing/fishery-licenses/timor-reef-fishery-and-licences

NT Fishery Status Reports 2016 (published in 2018)
https://dpir.nt.gov.au/__data/assets/pdf_file/0007/546640/FR119.pdf Overview of the Demersal Fishery page 33, Crimson Snapper page 77, Goldband Snapper page 83, Saddletail Snapper page 93.

National Status of Key Australian Fish Stocks 2018
Crimson snapper, sustainable in NT https://www.fish.gov.au/report/223-Crimson-Snapper-2018
Goldband snapper, sustainable in NT https://www.fish.gov.au/report/221-Goldband-Snapper-2018
Saddletail snapper, sustainable in NT https://www.fish.gov.au/report/224-Saddletail-Snapper-2018
Red emperor, undefined in NT https://www.fish.gov.au/report/222-Red-Emperor-2018

Stock Assessment of Selected Northern Territory Fishes (2013)
https://dpif.nt.gov.au/__data/assets/pdf_file/0019/233524/fr110.pdf

Marine bioregional plan for the North Marine Region 2012
http://www.environment.gov.au/topics/marine/marine-bioregional-plans/north

Ecological Risk Assessment of the Northern Territory Offshore Snapper Fisheries (2017)
Provided direct to DoEE. Not available online, but available to the public by request.

Survey of recreational fishing in the Northern Territory 2009-10
https://dpir.nt.gov.au/__data/assets/pdf_file/0016/233017/fr109.pdf

National Recreational and Indigenous Fishing Survey (2003)
https://www.frdc.com.au/Archived-Reports/FRDC%20Projects/1999-158-DLD.pdf

TABLE 1: PROGRESS AGAINST PREVIOUS RECOMMENDATIONS

Recommendation	Progress
Recommendation 1: Operation of the Northern Territory Timor Reef Fishery will be carried out in accordance with the Northern Territory *Fisheries Act 1988* and the Northern Territory *Fisheries Regulations 1992.*	**Met and ongoing.** The Northern Territory Department of Primary Industry and Resources (DPIR) reports that the Demersal Fishery continues to be managed in accordance with the management regime made under the NT *Fisheries Act 1988* and the NT *Fisheries Regulations 1992.* All new entrants into the fishery are required to undertake an induction interview with NT Fisheries during which the relevant regulations, licence conditions and protocols associated with any protected species interactions are clearly explained.
Recommendation 2: The Northern Territory Department of Primary Industry and Fisheries to inform the Department of Sustainability, Environment, Water, Population and Communities of any intended material changes to the NT Timor Reef Fishery management arrangements that may affect the assessment against which *Environment Protection and Biodiversity Conservation Act 1999* decisions are made.	**Met and ongoing.** DPIR has, and will continue to advise DoEE of any proposed amendments to the management of the fishery through interim and annual fishery reports. A new management framework is being progressed for the offshore snapper fisheries (Demersal Fishery and Timor Reef Fishery) to address risks identified in the 2017 Ecological Risk Assessment undertaken for the fisheries and provide for contemporary management of the fisheries. The draft management framework includes a harvest strategy (inclusive of performance indicators, reference levels and decision rules) designed to meet clearly defined management objectives. The new management framework is proposed to be finalised in 2019 and come into effect by mid-2020.
Recommendation 3: The Northern Territory Department of Primary Industry and Fisheries to produce and present reports to Department of Sustainability, Environment, Water, Population and Communities annually as per Appendix B to the *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition.*	**Met and ongoing**. DPIR has, and continues to, publish annual reports for the Timor Reef Fishery as part of the *Status of Key NT Fish Stocks Report*. These reports are publically available.