

Class Notification under the Commonwealth *Native Title Act 1993*

Licence condition variations to authorise the sunset sector in Torres Strait Finfish Fishery (TSFF) to take a total catch amount of Spanish mackerel, coral trout and a basket of other reef-line species in the Torres Strait Finfish Fishery for the 2020-21 fishing season (NT2020-04).

Date of Issue: 13 May 2020

SECTION OF NTA	Section 24HA (7) of the Commonwealth <i>Native Title Act 1993</i>
DEPARTMENT/AGENCY	Australian Fisheries Management Authority (AFMA) on behalf of the Torres Strait Protected Zone Joint Authority (PZJA)
CONTACT NAME	Andrew Trappett
E-MAIL	FisheriesTI@afma.gov.au
TELEPHONE NO.	(07) 4069 1990
REFERENCE NO.	Licence condition variations to authorise the sunset sector in the Torres Strait Finfish Fishery (TSFF) to take a total catch amount of Spanish mackerel, coral trout and a basket of other reef-line species in the Torres Strait Finfish Fishery for the 2020-21 fishing season (NT2020-04).

The Protected Zone Joint Authority intends to do the following act:

TYPE OF APPROVAL	Licence condition variation under Section 22 of the Commonwealth <i>Torres Strait Fisheries Act 1984</i> (the Act).
NUMBER OF APPROVALS	Licence condition variation for up to seven Sunset Licences.
UNDER WHAT ACT	<i>Torres Strait Fisheries Act 1984</i> (The Act).

The approvals, if granted, will permit the following activity to happen:

NATURE OF ACTIVITY	<p>Access to the Torres Strait Finfish Fishery (TSFF) is reserved for Traditional Inhabitants (the TIB sector) and fishers that lease annual sunset licences from the Torres Strait Regional Authority (TSRA). Sunset licences may be held by non-traditional inhabitants and allow for a certain amount of catch to be taken. TSRA lease sunset licences and catch allowances on behalf of Traditional Inhabitants.</p> <p>The proposed management action, to which this notification relates, would authorise the sunset sector in the TSFF to take a total catch amount of Spanish mackerel, coral trout and a basket of other reef-line species in the 2020-20 fishing season. The total catch for the sunset licence sector is shared across sunset licences and prescribed in licence conditions. The licence conditions have the effect of limiting the amount an individual licence holder may take of Spanish mackerel, coral trout and a basket of other reef-line species. At present there are a total of seven sunset licences.</p> <p>The total catch proposed to be made available to the sunset sector at the commencement of the 2020-21 fishing season is 39 tonnes for Spanish mackerel, 30 tonnes for coral trout and 4 tonnes of other reef-line species. Subject to an assessment within the fishing season of expected undercatch by the traditional inhabitant sector (TIB), the catch available to the sunset sector may increase for coral trout and other reef line species to a maximum of 105 tonnes and 30 tonnes respectively.</p>
---------------------------	---

	<p>Based on agreed total allowable catches (TACs) for the 2020-21 fishing season, the remaining catch that would be available to the TIB sector is 20 tonnes for Spanish mackerel and 105 tonnes for coral trout at the commencement of the season with the potential to be changed to a minimum of 30 tonnes. TIB catches for other reef-line species are not limited.</p> <p>Further information on the proposed management action is provided at Attachment A. Also please note that this notification, together with previous notifications, are available here: https://www.pzja.gov.au/native-title-notifications</p>
--	---

The above activity will be located within:

LOCATION OF ACTIVITY	The extent of the Finfish Fishery to which the proposed prohibition will apply is described in Item 4, Schedule 2 of the <i>Torres Strait Fisheries Regulations 1985</i> (the Regulations). The Regulations can be accessed online at: https://www.legislation.gov.au/Details/F2016C00633
MAPS/PLANS	Attachment B shows the area of the Torres Strait Finfish Fishery, as described in Item 4, Schedule 2 of the <i>Torres Strait Fisheries Regulations 1985</i> .
NAME OF REGISTERED NATIVE TITLE CLAIMANT GROUP/S OR NAME OF REGISTERED NATIVE TITLE BODY CORPORATE	Malu Lamar (Torres Strait Islander) Corporation RNTBC Ipima Ikaya Aboriginal Corporation RNTBC Carpentaria Land Council Aboriginal Corporation Kaurareg People #1 Kaurareg People #2 Kaurareg Native Title (Aboriginal) Corporation RNTBC The applicant for the Torres Strait Sea Claim (Part B)
NAME OF NATIVE TITLE REPRESENTATIVE BODY	Torres Strait Regional Authority Cape York Land Council

If approved, after consideration of all comments, the management option will be implemented for the following period of time:

DURATION OF APPROVAL	The proposed licence variations will apply for the 2020-21 fishing season which commences on 1 July 2020 and ends 30 June 2021.
-----------------------------	---

You are invited to comment upon the class of proposed future acts outlined above within the 28 day response period which ends close of business on 10 June 2020. If you would like to extend the response period, please contact AFMA by close of business on 10 June 2020.

Any comments must be **in writing** to:

By mail addressed to:
Australian Fisheries Management Authority
Att: Andrew Trappett
PO Box 376
Thursday Island, QLD, 4875

Or by email to: FisheriesTI@afma.gov.au

Background Information

Total Allowable Catch limits for the Torres Strait Finfish Fishery (TSFF)

At its meeting on 20 January 2020, the Torres Strait Protected Zone Joint Authority (PZJA) agreed that the Torres Strait Finfish Fishery **Spanish mackerel Total Allowable Catch (TAC) will be 59 tonnes** and the **coral trout TAC will be 135 tonnes** for the 2020-21 fishing season which commences on 1 July 2020.

This PZJA decision was based on consideration of advice from both the Torres Strait Finfish Fishery Resource Assessment Group (FFRAG) and Finfish Fishery Working Group (FFWG). Records of these meetings are publically available on the PZJA website (www.pzja.gov.au/torres-strait-finfish-groups) and the notice sent to licence holders advising of the decision is at **Attachment C**.

While Spanish mackerel is a shared stock with Papua New Guinea and can be subject to a formal shared TAC under the *Torres Strait Treaty 1985*, there is no indication from Papua New Guinea at this time that they wish to enter into catch sharing arrangements for 2020-21.

AFMA monitors TSFF catches through the season by receiving catch reports from both Sunset and TIB fishers through the Torres Strait Fish Receiver System and publishes these reports on the PZJA website: <https://www.pzja.gov.au/fishery-catch-watch-reports>.

Background to leasing catch to the sunset licence sector of the TSFF

Access to the TSFF is reserved for Traditional Inhabitants (the TIB sector) and fishers that lease sunset licences (the sunset sector) from the Torres Strait Regional Authority (TSRA). Sunset licences may be held by non-traditional inhabitants and allow for a certain amount of catch to be taken. Each year since 2008-09 the TSRA, on behalf of traditional inhabitants, has leased (temporary transfers) these sunset licences, with specified Spanish mackerel and coral trout catch amounts. Since 2017/18 TSRA have also lease catch allowances for other-reef-line species. Sunset licences are granted and varied by AFMA, as the PZJA licensing delegate.

As advised by the TSRA, the process for recommending catch amounts to be leased to the sunset sector is as follows:

- a) The TSRA Finfish Quota Management Committee (FQMC) provides advice to the TSRA Board on the leasing of finfish catch allocations. The FQMC comprises TSRA Board Member and a community fisher representative for the four main finfish communities (Erub, Masig, Mer and Ugar). The Committee also includes a Chair appointed by the TSRA Board.
- b) Each year the FQMC makes key recommendations to the TSRA Board on:
 - the amount (t) of catch to be set aside for TIB fishers
 - the amount (t) of catch to be leased out
 - the minimum price per kilo for each of the main species in the fishery
 - the names of the applicants who were successful through the Expression of Interests process, the catch in kilograms (kg) allocated to them and the price per kg to be charged.
- c) The TSRA Board of elected community representatives make the decision based on the advice and recommendations of the FQMC.
- d) When making a recommendation on allocations for the TIB sector the committee considers:
 - historic and current log book and docket book returns supplied by the PZJA
 - FQMC members' informed estimate of current fishing effort and likely changes to fishing effort in their communities.

The TSRA then applies to AFMA ahead of each TSFF fishing season to amend sunset licence conditions to reflect the TSRA Board decision on how much catch is to be leased to the Sunset Licence sector together with specific amounts for each licence.

Proposed catch leasing to the sunset licence sector for the 2020-21 fishing season

On 12 May 2020 the TSRA applied to AFMA for the following catch amounts to be made available to the sunset licence sector for the 2020-21 fishing season; 39 tonnes of Spanish mackerel, 30 tonnes of coral trout and 4 tonnes of other reef-line species across all licences (**Table 1**). The TSRA also advised that the initial catch amounts for coral trout and other reef-line species may be increased once the fishing season has commenced to a maximum of 105 tonnes for coral trout and 30 tonnes for other reef-line species (**Table 1**). The potential increase for coral trout is in line with TSRA advice on catch amounts to be reserved for the TIB sector and will be subject to an assessment of likely undercatch for the sector at the time. TIB catches for other reef-line species are not limited. Currently there are a total of seven sunset licences.

Table 1 Proposed catch amounts (in tonnes) to be made available to the Sunset licence sector for the 2020-21 fishing season and agreed TACs.

	Spanish mackerel	Coral trout	Other reef-line species
Total Allowable Catch	59	135	30
Available catch - TIB Sector	20	105 (with potential to change to a minimum of 30)	Not applicable
Available catch - Sunset licence sector	39	30 (with potential to change to a maximum of 105t)	4 (with potential to change to a maximum of 30)

How may the proposed decision impact Traditional Inhabitants

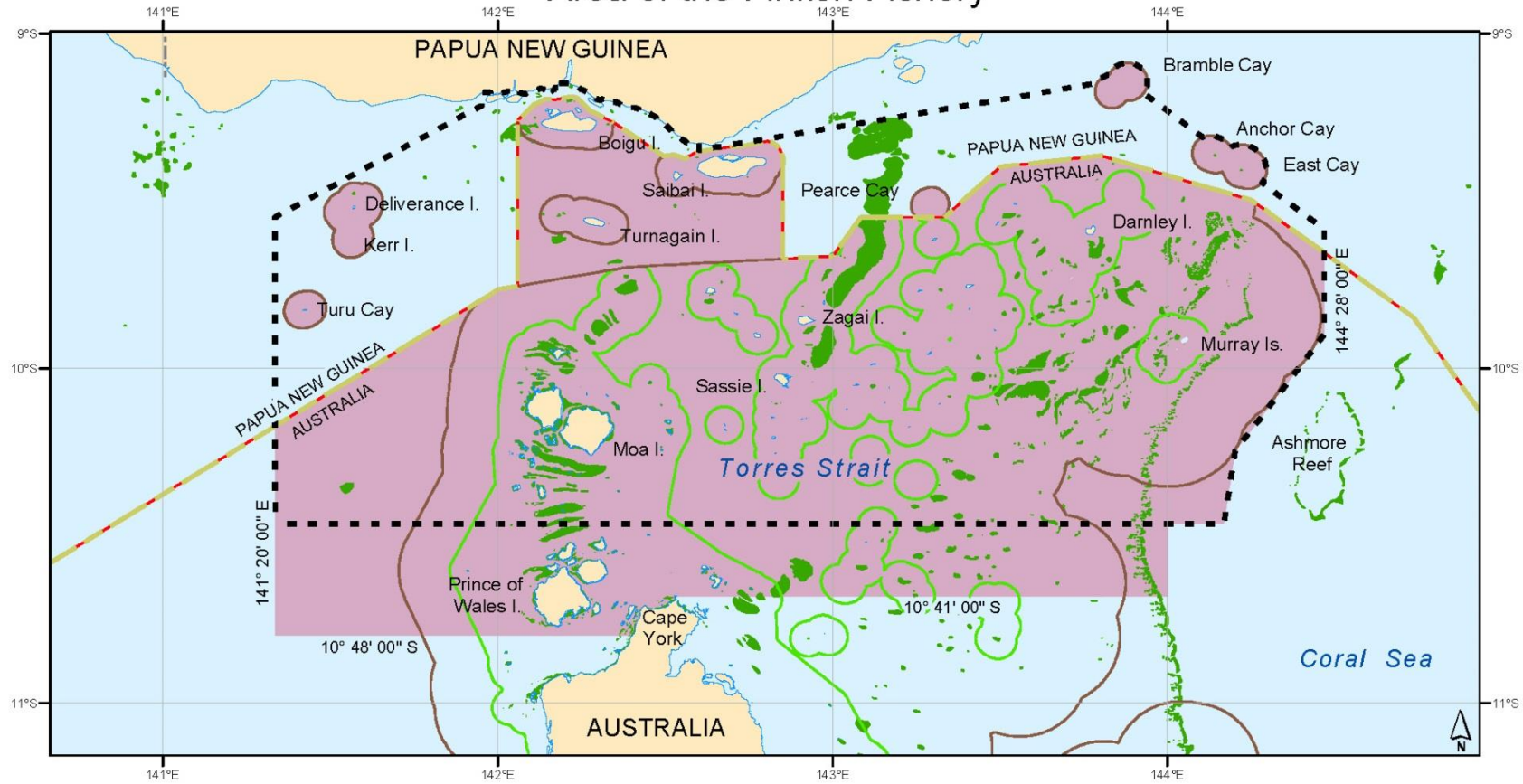
Following the Australian Government buyout of all TSFF licences held by non-traditional inhabitants in 2008, arrangements for leasing catch to the sunset licence sector were established. The aim being to maintain market supply and generate revenue for the benefit of Traditional Inhabitants whilst catches in the TIB sector increase overtime. In 2018-19 leasing generated \$189 400 of revenue and the TSRA Finfish Trust Account balance as at 30 June 2019 was 1.865 million (*Torres Strait Regional Authority Annual Report 2018-19*).

To support growth in TIB catches overtime, it is intended that the amount of catch leased leaves enough of the TAC for the TIB sector having regard for recent TIB catch trends and any expected catch increases. The TSRA leasing process outlined above is designed to capture industry and community views on appropriate catch levels to be both reserved for the TIB sector and leased to the sunset sector.

For the 2018-19 fishing season the TIB sector reportedly caught 7 tonnes of Spanish mackerel and 6 tonnes of coral trout. As at 13 May 2020, recorded TIB catches for the current season (2019-20) which ends on 30 June are 1.98 tonnes of Spanish mackerel and 2.04 tonnes of coral trout.

Torres Strait Fisheries

Area of the Finfish Fishery



- Coastal Waters limit (3nm)
- Exclusive Economic Zone limit (200nm)
- - - Fisheries Jurisdiction line
- Protected Zone Boundary
- Territorial Sea limit (12nm)
- Low tide elevations and reefs
- Torres Strait Fisheries**
- Finfish Fishery



Produced by Geoscience Australia
for the Australian Fisheries Management Authority, August 2006
© Commonwealth of Australia 2006

Geographic
Datum: WGS84

NOTES:

1. The area of the Fishery is sourced from the Torres Strait Fisheries Regulations 1985
2. Within this fishery, arrangements exist between the Commonwealth and QLD, whereby the Coastal Waters of that State are deemed part of the AFZ
3. The Fisheries Jurisdiction Line and Protected Zone shown on this map are established under the Treaty between Australia and the Independent State of Papua New Guinea. This Treaty entered into force on 15 February 1985
4. The maritime zone boundaries shown on this map are sourced from the "Australian Maritime Boundaries (AMB) v2.0"

GeoCat #: 64844



Australian Government
Australian Fisheries Management Authority

DOC REF F2020/0059

4 February 2020

Dear Torres Strait Finfish Fishery Licence Holder,

I am writing to advise you of updates for the Torres Strait Finfish Fishery including the agreed Total Allowable Catch limits (TACs) for commercial fishing in the Torres Strait Finfish Fishery for the 2020-21 season.

Torres Strait Finfish Fishery Total Allowable Catch limits for the 2020-21 season

At its 20 January 2020 meeting, the Torres Strait Protected Zone Joint Authority (PZJA) agreed that the Torres Strait Finfish Fishery **Spanish mackerel Total Allowable Catch (TAC) will be 59 tonnes** and the **coral trout TAC will be 135 tonnes** for the 2020-21 fishing season which commences on 1 July 2020.

This PZJA decision was based on consideration of advice from both the Torres Strait Finfish Fishery Resource Assessment Group (FFRAG) and Finfish Fishery Working Group (FFWG). All records of PZJA advisory group meetings are publically available on the PZJA website and are also enclosed with this letter (www.pzja.gov.au/torres-strait-finish-groups).

While Spanish mackerel is a shared stock with Papua New Guinea and can be subject to a formal shared TAC under the *Torres Strait Treaty 1985*, there is no indication from Papua New Guinea at this time that they wish to enter into catch sharing arrangements for 2020-21.

Status of the Torres Strait Spanish mackerel stock

Our understanding of the status of the Torres Strait Spanish mackerel stock relies heavily on catch and effort data supplied by commercial fishers through Daily Fishing Logbooks and Catch Disposal Records. These data support a scientific stock assessment, which tells us that the Spanish mackerel biomass has been declining in Torres Strait over recent seasons.

The outcomes of the 2019 stock assessment suggest that the stock is around 23 per cent of unfished levels. Generally, when fish stocks fall below 20 percent, the risk to the stock from continued commercial fishing is regarded by the Australian government as unacceptably high and it is the Australian Government's policy is to cease all commercial fishing and to rebuild the stock.

The PZJA has taken action to reduce the risk of the stock further declining by reducing the TAC for 2020-21. PZJA agencies have also invested in research to gather information on the length and age of Spanish mackerel being caught which can then be used to improve our assessment of the

Canberra

PO Box 7051
 Canberra Business Centre ACT 2610
 P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
 Darwin NT 0801
 P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
 Thursday Island QLD 4875
 P 07 4069 1990 F 07 4069 1277

stock. Fishers and fish receivers also have a very important role in ensuring we have reliable and accurate information about the stock by filling out accurate Catch Disposal Records and Logbooks. Fisher information will be used in the next Torres Strait Spanish mackerel stock assessment update planned for late 2020 and these catch data are crucial to support our understanding of how the stock is tracking over time.

Further updates for Torres Strait Finfish Fishery Licence Holders

Access to the Fishery is reserved for Traditional Inhabitants who hold a Traditional Inhabitant Boat (TIB) licence and fishers that lease annual sunset licences from the Torres Strait Regional Authority (TSRA). Sunset licences may be held by non-traditional inhabitants and allow for a certain amount of catch to be taken. TSRA lease sunset licences and catch allowances on behalf of Traditional Inhabitants with the leasing process for 2020-21 season expected to be completed before 1 July 2020. AFMA will further advise licence holders on the outcomes of this leasing process including the number of sunset licences issued and total catch leased to these licences.

AFMA will provide catch watch reports throughout the season to advise licence holders on reported catches against the recommended commercial catch limits.

Please note that all catch taken in the Torres Strait Finfish Fishery must be weighed and recorded by a licenced fish receiver at the first point of landing. A list of licenced fish receivers who can receive your catch is available on the public register of concession holders available here: <http://www.afma.gov.au/fisheries-services/concession-holders-conditions/>. The public register also contains details of all commercially licenced fishers in Torres Strait including sunset licence holders.

If you would like further information about the season commercial catch limits or any other updates relating to the Torres Strait Finfish Fishery please do not hesitate to contact me at the AFMA Office on Thursday Island on (07) 4069 1990 or via email andrew.trappett@afma.gov.au

Yours sincerely,



Andrew Trappett
Senior Fisheries Management Officer
Torres Strait Fisheries

LIST OF ATTACHMENTS

Attachment A – Finfish RAG (27-29 November 2019) excerpt of final meeting record.

Attachment B - Finfish Working Group (30 November 2019) excerpt of final meeting record.

Canberra

PO Box 7051
Canberra Business Centre ACT 2610
P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
Darwin NT 0801
P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
Thursday Island QLD 4875
P 07 4069 1990 F 07 4069 1277

Agenda Item 2 – Stock assessments and RBCs

2.1 Spanish mackerel stock assessment update and recommended biological catch

Advice summary

The PZJA Torres Strait Finfish Fishery Resource Assessment Group **RECOMMEND** either a 56 or 71 tonne Recommended Biological Catch for Spanish mackerel for the 2020-21 season.

The FFRAG noted an updated stock assessment performed under the project “Spanish mackerel stock assessment, with appraisal of environmental drivers” (AFMA project number 2019/0831). The Spanish mackerel stock assessment uses an annual age-structured model. The assessment uses all available catch-effort data and the fish age-frequency data from the 2000’s. The present stock assessment update included an additional fishing year of catch data (2018-19).

The RAG noted the results of the updated stock assessment show:

- a) Biomass has been estimated to be declining since 2009-10; i.e. the standardised catch rate of legal-sized Spanish mackerel (the abundance index), using logbook data from sunset fishing operations, has declined since 2009-10. Standardised catch rates are comparable to periods in the fishery where total catches were significantly higher, and did not substantially differ in 2018-19 to the last assessment using data up to 2017-18.
- b) The estimated median 2018–19 biomass was 23 per cent (ranging between 14% to 37% (B_{14} and B_{37})) of unfished biomass (B_0) estimated in 1940–1941 and this value was close to the default *Commonwealth Harvest Strategy Policy*¹ limit reference point of 20 per cent of unfished biomass.
- c) Recent fishing pressures are mostly not exceeding F_{MSY} . This means overfishing is unlikely to be occurring. The RAG assumption remains, therefore, that the biomass decline is likely associated with factors other than fishing pressure, such as broader environmental factors driving below average recruitment.

To guide advice on a 2020–21 RBC, the FFRAG recommended applying a constant harvest rate of either F 40 or F 48 (i.e. harvest rates that build the stock to either B 40 or B 48) based on current 2018-19 exploitable biomass. Previous FFRAG advice for the 2019-20 season was based on applying a Maximum Sustainable Yield (F MSY) harvest rate based on the current exploitable biomass. The decision to use F 40 or F 48, rather than F MSY was based on the need for precaution as the estimated level of biomass approaches the limit reference point.

Based on the outcomes of the stock assessment and applying a constant harvest rate of either F40 or F48 in a depressed recruitment scenario, the FFRAG recommended an RBC of either 56 tonnes (F48) or 71 tonnes (F40) for the 2020-21 season. These catch levels represent the application of

¹ *Commonwealth Fisheries Harvest Strategy Policy and Guidelines 2018*, https://www.agriculture.gov.au/fisheries/domestic/harvest_strategy_policy

the constant harvest rate to the median value of current biomass estimated from 35 model-scenarios.

Noting there is no agreed harvest strategy in place for the Finfish Fishery, the FFRAG considered fish-population projections for a range of harvest control rules to evaluate risks to the stock. The RAG agreed to consider how many years in a model run the stock would drop the stock below the limit reference point (B20) during a 12 year-time period (three times the average age of sexual maturity). Two future alternatives were considered: an assumption of either average recruitment or depressed recruitment in the future 12-year projection period (**Table 1**).

The FFRAG noted that the stock assessment model has estimated that below average recruitment is likely to have been occurring in recent seasons and the FFRAG recommended that it would be prudent to consider projections with lower than average recruitment. Taking this approach was considered an appropriate risk-management strategy given the potential consequences of over-estimating future recruitment given the proximity of the stock to the limit reference point (**Table 2**). It was noted that if the stock falls below the limit reference point the *Commonwealth Harvest Strategy Policy* is to cease all commercial fishing.

When considering reduced estimates of recruitment (20 per cent lower than the model predicted average recruitment values) the FFRAG noted that the percentage of time that projections of the 35 model scenario runs fell below the limit reference point was 7 per cent (F 40 approach) and 11 per cent (F 48 approach) of the 12-year projection period. The FFRAG considered that this level of risk to the stock was acceptable from these two approaches and is in line with the *Commonwealth Harvest Strategy Policy*. The FFRAG noted that the 11 percent value is unlikely to be statistically different from 10 percent cut off given the limited exploratory model runs undertaken (during the meeting). Hockey-stick harvest control-rule scenarios were also examined (scenarios 4-6, **Table 1**), but not recommended in this advice, noting the dramatic reductions in RBCs and their likely associated social and economic impacts. The FFRAG also noted that, with the application of new data in future assessments, such reductions in RBC may be unnecessary.

Table 1: Average and reduced summary recruitment statistics from 35 analyses with 12-year projections.

	Name of Approach	Harvest Control Rule Type	% runs below B20 over 12 years Assume average recruitment	% runs below B20 over 12 years Assume reduced recruitment	2020-21 RBC
1	Constant F MSY	2	7%	15%	91
2	Constant F 40	2	6%	11%	71
3	Constant F 48	2	5%	7%	56

4	Hockey F MSY	3	0	0	15
5	Hockey F 40	3	0	0	11
6	Hockey F 48	3	0	0	6

Non-commercial catch estimates.

The FFRAG confirmed 2019-20 advice on best estimates for catches taken outside of the commercial fishery and supported the use of the values shown in **Table 3** for decision making in 2020-21.

Table 2: Risk assessment of natural occurrence of recruitment scenarios (normal or depressed) vs. assumed response taken by management.

		Management Response	
		Assume average recruitment	Assume depressed recruitment
Scenarios	Average recruitment	Prudent response: assumption was correct and did actually occur.	Precautionary response: Assumed depressed recruitment, but average R is occurring. Results in no impact on stock - we are acting to 'bank fish'.
	Depressed recruitment	Non-precautionary response: Nature has depressed recruitment, assumed normal recruitment. Stock status will get worse.	Prudent response: planning for this event when it has occurred.

Table 3: Summary of available information on catches outside of the commercial Spanish mackerel fishery.

Source of catches	Expected catch (t)	Comments
Subsistence catch (kai kai) by traditional inhabitants	10	Based on data from <i>Busilacchi 2013</i> this includes total of catch estimates for Mer, Masig and Erub Islands. The FWG agreed in July 2016 that the catch figures from the <i>Busilacchi 2008</i> research are the best estimates of traditional take of finfish. While originally reported by CSIRO as 12 t this was further refined to 5.155 t. The RAG recommended that an estimate of 10 t be used for decision making noting data was only from

		three islands, the number of TIB fishing endorsements has increased and effort creep may be occurring. NOTING that anecdotal information presented at the FFRAG by TIB industry members infers this number generally may have gone down.
Recreational	2	RAG advised that based on the available evidence from QDAF recreational survey results recreational catches are likely to be minimal. Changed now - based on QDAF survey (2013) which included Torres Strait.
Charter	Likely to be minimal	Available QLD logbook records show Charter boat line catches are low. Logbook records for the period between 1995 and 2014 report a total of 19.58 tonnes of mixed species taken from Torres Strait waters. RAG has advised based on the available evidence from QDAF logbook data from charter catches are likely to be minimal.
PNG catch sharing	0	PNG-NFA declined to enter into catch sharing arrangements under the Treaty for 2019-20 fishing season (advice pending for 2020-21 season).

Background - analysis and considerations

Recruitment estimates

The FFRAG noted that Spanish mackerel, like most fish stocks, are known to have natural variation in recruitment. The current model was estimating (note – recruitment itself is not being measured, only estimated) below average recruitment in recent seasons (**Figure 1**) to explain lower biomass estimates despite no overfishing occurring.

FFRAG noted that the upward trend in recent years on the modelled recruitment deviation plot is an artefact of the model automatically attempting to realign recruitment with the long-term average and that the last few values on this series have more uncertainty in the model (**Figure 1**).

Canberra

PO Box 7051
Canberra Business Centre ACT 2610
P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
Darwin NT 0801
P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
Thursday Island QLD 4875
P 07 4069 1990 F 07 4069 1277

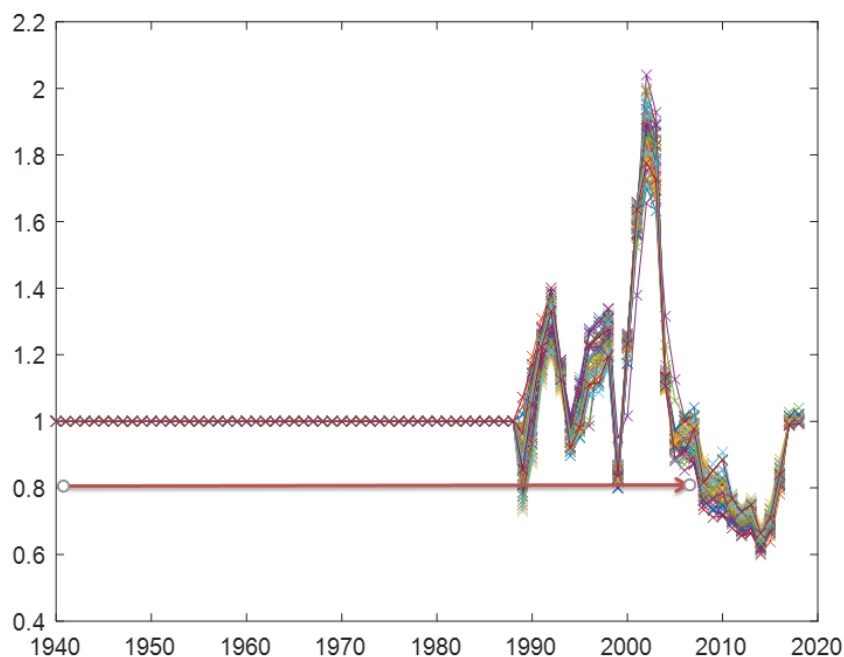


Figure 1. Model estimated deviations in stock recruitment from the long-term average (1) over time. Red arrow indicates a 20 per cent level of depressed recruitment which was adopted as a value by the RAG for consideration of risks to the stock from continued depressed recruitment occurring.

Alternative model testing

FFRAG noted concerns raised that the Catch Per Unit Effort series (mainly driven from sunset Daily Fishing Logbook data) might not be a reflection of the stock abundance over time. To address this the stock assessment team performed a simple analysis using catch data alone (i.e. no effort component) which was put into a basic alternative model called *CatchMSY* (Figure 2 below).

FFRAG noted that this alternative analysis was a useful exercise as it shows that the model range of outputs did agree with the CPUE standardisation and concur with the apparent decline in the stock from around 2005.

Canberra

PO Box 7051
Canberra Business Centre ACT 2610
P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
Darwin NT 0801
P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
Thursday Island QLD 4875
P 07 4069 1990 F 07 4069 1277

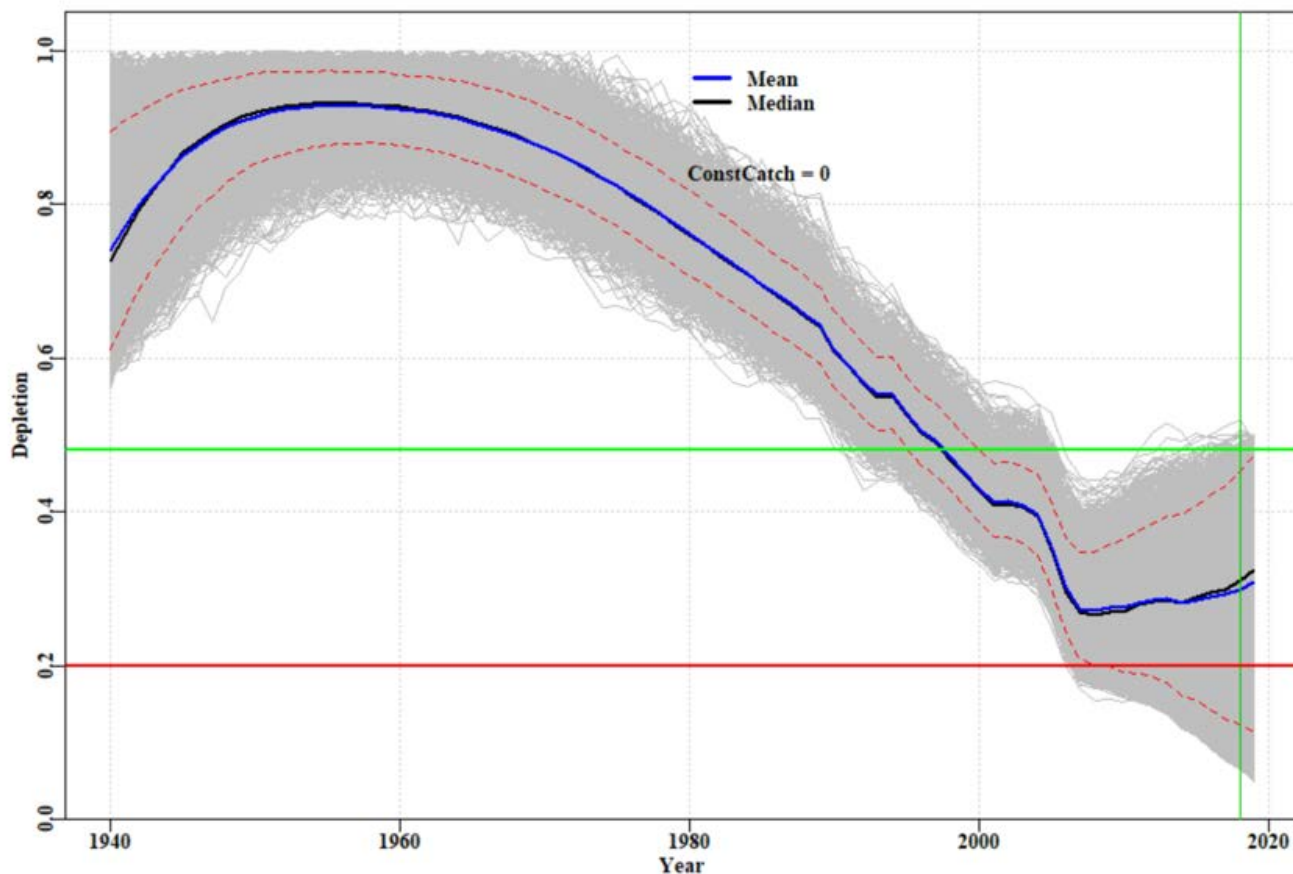


Figure 2: CatchMSY Biomass model outputs.

Inclusion of “paper fish” in the model

FFRAG noted previous concerns raised on the impacts of several high CPUE points flagged as possible “paper fish” (potential over-reporting of catch prior to the government funded 2007 buyout of TVH licences) and that these points may be falsely inflating catch rates over this period and influencing the outcomes of the stock assessment model. The stock assessment team performed an additional model run and deliberately lowered the values of the apparent years of ‘paper-fish’ around the 2005 season, with these values reduced down to a catch-rate level comparable with previous years in the catch series.

The RAG noted that reducing the values of these points had little effect on the outcomes of the model, with the estimated level of biomass being the same as the base case model at 23 per cent of unfished biomass (range 14 to 36 % rather than 14 to 37 %) and that reducing these values might make the model more conservative (estimating a smaller population size) and would act to adjust the RBC downwards by a few tonnes.

FFRAG concluded that, as an issue, paper fish was not substantially influential on the model outcomes and scientific efforts should be placed on other areas in future assessments. The stock assessment team advised that paper fish could be left in the model for future analysis (in 2020) as a post-analysis sensitivity approach rather than including as part of the core assessment model

runs. FFRAG supported this approach to leave these data in the model and that there would need to be a clear justification to remove or alter these values.

Inclusion of early logbook data (1988) in assessments

FFRAG noted a concern raised about the effect of including older logbook data from the model time series, given known uncertainty associated with the number of tenders reported in these data and that earlier analyses had not analysed this earlier available data.

The stock assessment team helped clarify for the FFRAG that the older 1988 logbook data includes 261 days of boat data (January to June 1988, not representing a full fishing year of data) and that these was not used in the second stock assessment report² but was included in the 2018 and 2019 assessment updates. FFRAG science members advised a preference not to discount any data if available for consideration. It was noted that uncertainty does exist in the earlier points in our time series due to the number of tenders recorded being variable and it had been noted in previous assessments data prior to 1989 was considered unreliable. It was also noted that the current funded stock assessment project would be investigating dory driver names in 2020.

The RAG noted that removing 1988 data did have an effect on the outcomes of the model, with a slightly increased median estimated level of biomass of 26 per cent (range between 14-48 biomass estimates). The stock assessment team advised that 1988 data could be left in the model for future analysis (in 2020) as a post-analysis sensitivity approach rather than including as part of the core assessment model runs.

Industry members supported the recommended approach to use all available older logbook reported values in the assessment unless there is a clear reason to leave it out. It was advised this is a matter of messaging for communities “*no data is being left out, no stone is being unturned*” and that the RAG is doing everything that it can to examine the state of the resource.

Shark depredation effect on CPUE

FFRAG noted industry advice that shark depredation (shark taking hooked mackerel before they are retrieved to the boat) has reportedly been high during certain fishing seasons. Science members advised that factoring shark depredation rates into the model might result in a better understanding of the status of the stock if it could be measured and shown to be occurring at significant levels. Science members advised that guidance would be required to help this future examination, but without data to inform the model, the magnitude of this effect it would be hard represent; e.g. when did it start, strength of effect, when did it get relatively/absolutely better or worse. FFRAG noted that an FRDC study was in progress in a Western Australian fishery (demersal line sector, not Spanish mackerel specifically) and that the outcomes of this research may inform future work on understanding and incorporating this effect into the Torres Strait Spanish mackerel stock assessment.

² O'Neill, MF, and Tobin, A. 2016, Torres Strait Spanish mackerel stock assessment II, 2015. Torres Strait AFMA Project Number: RR2014/0823, Department of Agriculture and Fisheries, Queensland Government.

Canberra

PO Box 7051
Canberra Business Centre ACT 2610
P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
Darwin NT 0801
P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
Thursday Island QLD 4875
P 07 4069 1990 F 07 4069 1277

Papua New Guinea drought impacts on Torres Strait water quality and Spanish mackerel abundance

FFRAG noted a presentation from industry member Tony Vass examining possible effects of PNG droughts on catch rates from his vessel. The FFRAG noted that 1997 reportedly had the worst drought in history in PNG and that 2017 had also seen a large drought occur. Both of these years were followed by lagged low catches as per the example catch figure presented by Mr Vass from his vessels operations during these season.

The FFRAG noted older advice from the sunset fishing industry that droughts in PNG seemed to impact water quality and catches at Bramble Cay. Industry have previous advised AFMA that it is possible that outflow of nutrients and sediments from the Fly River may be impacting the area of Bramble Cay. FFRAG science members advised that it was possible that PNG droughts might impact the productivity and available food for mackerel larvae and/or juveniles based on outflows from the Fly River. FFRAG noted that the current funded stock assessment project was investigating this factor, among other environmental variables, for possible inclusion into the stock assessment in 2020.

What happens if the sunset sector do not fish and there are fishing seasons without sunset logbook data?

FFRAG noted advice from the stock assessment team that not having any data from the sunset sector would be challenging to model in future assessments. The stock assessment team advised that, for the 2020 stock assessment, additional data points including ageing data, a second and third year of TIB catch data and some TIB sector voluntary effort data will be available, allowing some analysis of overlap with sunset sector data. It was advised that, in the short term, more uncertainty would result from losing all/parts of the sunset information, but would be manageable in the longer term with the TIB data set building over time and will help improve the assessment in the longer term.

Non-commercial catch estimates.

The RAG noted no new data was available to alter the tabled estimates of catches outside the commercial fishery (Table 1, page 44 of the meeting material):

- QDAF advised that there was no new information to revise recreational or charter catch;
- There was no new subsistence catch information, noting a scoping study in progress; and
- There was no information available from PNG-NFA to suggest a change to the catch-sharing arrangement.

2.2 Coral trout RBC for 2020-21 season

FFRAG **RECOMMEND** maintaining the current Total Allowable Catch for coral trout for the 2020-21 fishing season. However, instead of setting the TAC at the current 134.9 tonnes, for simplicity, the RAG recommended the TAC be set at **135 tonnes**.

In making this recommendation the RAG noted:

Canberra

PO Box 7051
Canberra Business Centre ACT 2610
P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
Darwin NT 0801
P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
Thursday Island QLD 4875
P 07 4069 1990 F 07 4069 1277

- the results of the preliminary stock assessment presented for the previous fishing season (2018-19), which indicated that the stock biomass is likely to be high (the preliminary stock assessment estimated biomass to be around 80 percent (B80) of estimated virgin biomass, with all of the model estimates of spawning biomass being above B65);
- continued low levels of reported catches (less than 20 tonnes (17.3 t) was reportedly taken in 2018-19 fishing season by TVH and TIB combined); and
- there is no new information to justify (or guide) a changed management approach.

Noting the low reported catches, the FFRAG did not consider it a priority at this time to develop estimates of catches taken outside the Fishery and for the TAC to be reduced accordingly. However, the RAG did recommend that this work commence in 2020.

Action arising: AFMA to develop a work plan for the FFRAG to advise on best estimates of coral trout catches taken outside the commercial Torres Strait Finfish Fishery (traditional take - kai-kai, recreational, charter sector).

Canberra

PO Box 7051
 Canberra Business Centre ACT 2610
 P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
 Darwin NT 0801
 P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
 Thursday Island QLD 4875
 P 07 4069 1990 F 07 4069 1277

Agenda Item 3 – Advice on Total Allowable Catches for Spanish mackerel and coral trout

Agenda item 3.1 Spanish mackerel TAC recommendation for 2020-21 fishing season

Having regard for the FFRAG advice, presented as key outcomes from the 27-28 Nov 2019 meeting (**Attachment B**), the FFWG agreed to recommend a Spanish mackerel TAC of 59 tonnes for the 2020-21 season (based on an Recommended Biological Catch (RBC) of 71 tonnes minus a total estimated catch outside the Fishery of 12 tonnes (10 t for traditional/subsistence fishing and 2 t for recreational fishing). In making this recommendation the FFWG:

- a) noted biomass has been estimated to be declining since 2009-10; i.e. the standardised catch rate of legal-sized Spanish mackerel (the abundance index), using logbook data from sunset fishing operations, had declined since 2009-10. Standardised catch rates have reached levels comparable to periods where total fishery harvests were significantly higher and did not substantially differ in 2018-19 to the last assessment using data up to 2017-18;
- b) noted the results of the stock assessment update suggesting the estimated median 2018-19 biomass was 23 per cent (ranging between 14% to 37% (B14 and B37) of unfished biomass (B0) estimated in 1940-1941 and that this value is close to the default *Commonwealth Fisheries Harvest Strategy Policy: Framework for applying an evidence-based approach to setting harvest levels in Commonwealth Fisheries* (June 2018) (harvest strategy policy) limit reference point of 20 per cent of unfished biomass. Although still in development, the FFRAG and FFWG have recommended B20 as the limit reference point for the Spanish mackerel;
- c) noted FFRAG advice that overfishing is unlikely to be occurring meaning the biomass decline is likely associated with factors, other than fishing pressure, such as broader environmental factors driving below average recruitment;
- d) noted the FFRAG advice to consider applying a constant harvest rate of either F 40 or F 48 (i.e harvest rates that build the stock to either B 40 or B 48) based on the current exploitable biomass rather than applying a Maximum Sustainable Yield (FMSY) harvest rates based on the need for precaution as the estimated level of biomass approaches the limit reference point;
- e) supported the FFRAG approach to assume below average recruitment scenarios in assessing stock projections for a range of harvest control rules and agreed that this an appropriate risk-management strategy given the proximity of the stock to the limit reference point;
- f) noted FFRAG advice that risk associated with either an RBC of 56 or 71 tonnes of the stock falling below the limit reference point (B20) is consistent with the harvest strategy policy. An RBC of 71 tonnes has slightly higher risk but is still within accepted risk thresholds under the harvest strategy policy;

Canberra

PO Box 7051
Canberra Business Centre ACT 2610
P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
Darwin NT 0801
P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
Thursday Island QLD 4875
P 07 4069 1990 F 07 4069 1277

- g) noted advice from the FFRAG that the best estimates of catches taken outside the commercial Fishery remain unchanged since the last season and supported the use of the same estimates noting that the members also had no new information. The catch estimates are detailed in **Table 3 of Attachment B**.
- h) agreed that based on best available information, the recommended TAC seeks to:
- ensure the sustainability of the stock by allowing for the stock to build and avoiding unacceptable risk of the stock falling below the limit reference point;
 - minimise potential economic and social impacts such as the potential loss of available fisheries expertise (that can be shared with TIB fishers) from sunset licence holders and/or impacts on supply chain/market dynamics (although the likelihood of the latter occurring were considered low); and
 - minimise impacts on the CPUE data series that may occur as a result of a reduced TAC and hence less sunset licensed vessels fishing for Spanish Mackerel; also noting application of new data is expected in the next stock assessment.

The FFWG discussed and sought advice from the scientific members on future data needs and possible options to improve our understanding of the stock (including a possible alternate index of abundance (noting TSRA concerns about the limited number of boats driving the estimated decline in abundance and other issues that might be impacting such as change in fisher experience and increased shark depredation). Members noted the current CPUE series based on daily logbook information submitted by sunset licence holders, may be at risk as the sector reduces. The scientific members provided the following advice:

- stock assessments can deal with breaks in a CPUE. However a break does introduce additional uncertainty. For the Finfish Fishery it would be prudent to have a few years of overlap between the TIB CPUE series (in development) and the long-standing Sunset Licensee (ex TVH licences) CPUE series to enable the model to merge the two data sets.
- the next stock assessment update (2020) is expected to incorporate additional data including two years of TIB catch (and some effort data) from the Fish Receiver System, ageing and length frequency data from the biological sampling project plus analysis of environmental drivers. While additional data is likely to reduce uncertainty in the stock assessment, it may improve, maintain or even reduce our estimate of stock status.
- the close-kin genetic technique, if developed and applied successfully, could provide an estimate of absolute abundance (fish numbers) for the stock independent of the existing CPUE series. Tissue samples from Torres Strait Spanish mackerel are being collected and stored under the funded biological sampling project which may aid development of such a project and reduce some initial costs.

Action 2, FFWG 29 November 2019: FFRAG to advise on the feasibility and likely cost of the close kin genetic technique to examine absolute abundance in the Spanish mackerel fishery and

Canberra

PO Box 7051
Canberra Business Centre ACT 2610
P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
Darwin NT 0801
P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
Thursday Island QLD 4875
P 07 4069 1990 F 07 4069 1277

consider recent advances in the field (e.g. Southern Bluefin Tuna, School Shark), noting also that collection of Spanish mackerel tissue samples is occurring under biological data. FFRAG should also advise on any other data and research priorities that could assist in improving the assessment of the Torres Strait Spanish mackerel stock.

Agenda item 3.2. Coral trout TAC recommendation for 2020-21 fishing season

The FFWG agreed to recommend maintaining the current TAC for coral trout for the 2020-21 season but instead of the TAC being 134.9 tonnes that it be set at 135 tonnes. In making this recommendation the FFWG considered FFRAG advice (**Attachment B**) that:

- the results of the preliminary stock assessment presented for the previous fishing season (2018/19), which indicated that the stock biomass is likely to be high (the preliminary stock assessment estimated biomass to be around 80 percent (B80) of estimated virgin biomass with all of the model estimates of spawning biomass being above B65);
- continued low levels of reported catches (less than 20 tonnes (17.3 t) was reportedly taken in 2018/19 fishing season by sunset licensees and TIB combined); and
- there is no new information to justify (or guide) a changed management approach.

The FFWG further noted advice from the FFRAG that given the low reported catches, it did not consider it a priority at this time to develop estimates of catches taken outside the Fishery and for the TAC to be reduced accordingly. However the FFRAG did recommend that this work commence in 2020.

Canberra

PO Box 7051
Canberra Business Centre ACT 2610
P 02 6225 5555 F 02 6225 5500

Darwin

PO Box 131
Darwin NT 0801
P 08 8943 0333 F 08 8942 2897

Thursday Island

PO Box 376
Thursday Island QLD 4875
P 07 4069 1990 F 07 4069 1277