

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
PRELIMINARIES Meeting preliminaries	Agenda Item No. 1.1 FOR NOTING

RECOMMENDATIONS

That the Finfish RAG **NOTE**:

1. the Chairperson's acknowledgement of traditional owners and welcome address; and
2. apologies received from members unable to attend.

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
PRELIMINARIES Adoption of agenda	Agenda Item No. 1.2 FOR NOTING

RECOMMENDATIONS

That the FFRAG **CONSIDER** and **ADOPT** the draft agenda.

BACKGROUND

1. Key items for a draft agenda for FFRAG 8 were circulated to members and other participants via email on 16 October 2020. A request was received from an Industry member to add an item to the agenda to discuss the Western Line Closure in the context of the outcomes of the TSRA Fisheries Summit held on 21-23 October 2020.
2. A full draft agenda (**Attachment A**) was circulated together with papers, to members on 27 October 2020.

EIGHTH MEETING OF THE PROTECTED ZONE JOINT AUTHORITY TORRES STRAIT FINFISH FISHERY RESOURCE ASSESSMENT GROUP

4-5 November 2020 (8:30 am – 5:00 pm), Novotel Oasis Cairns

DRAFT AGENDA

The meeting will open at 8.30am on Wednesday 4th November 2020 at 8:30 am.

AGENDA ITEM 1 PRELIMINARIES

1.1 **Acknowledgement of Traditional Owners, welcome and apologies**

The Chair will welcome FFRAG members, permanent observers, invited participants and any casual observers to the eighth Torres Strait Finfish Resource Assessment Group meeting.

1.2 **Adoption of agenda**

The FFRAG is invited to consider and adopt the draft agenda.

1.3 **Declarations of interest**

FFRAG members must declare any real or potential conflicts of interests to the group and determine whether a member may or may not be present during discussion of, or decisions made, on the matter which is the subject of the conflict.

1.4 **Action items from previous meetings**

The FFRAG will note the status of action items arising from recent RAG meetings.

AGENDA ITEM 2 FFRAG UPDATES

This part of the agenda is an opportunity for the FFRAG to develop a common understanding of the Torres Strait Finfish Fishery including recent fishing, economic, biological and ecological trends.

2.1 **Industry and scientific updates**

Industry members are asked to provide a brief verbal update on any recent developments relevant to the fishery. Science members are asked to provide an updates on any research projects underway in Torres Strait or adjacent fisheries that may have relevance to the Torres Strait Finfish Fishery.

2.2 **Member updates**

The FFRAG will note updates from each of the PZJA government agency members on the latest developments relevant to the Torres Strait Finfish Fishery. The FFRAG will note a verbal update from the Malu Lamar representative

AGENDA ITEM 3 STOCK ASSESSMENT and RBC ADVICE

3.1 **Updated Spanish mackerel stock assessment 2020**

Expected outcome: FFRAG are to **discuss and provide advice** to the Finfish Working Group and PZJA on the outcomes of the updated 2020 stock assessment for Spanish mackerel delivered by Dr. O'Neill and Dr Buckworth.

3.2 Torres Strait Spanish mackerel Recommended Biological Catch for 2021-22 season

Expected outcome: FFRAG are to **recommend a 2021-22 season Recommended Biological Catch** to the Finfish Working Group and PZJA based on the outcomes of the 2020 stock assessment update (Agenda Item 3.1)

3.3 Coral trout Recommended Biological Catch for 2021-22 season.

Expected outcome: FFRAG are note any updated catch and effort information available for coral trout and are to **recommend a 2021-22 season Recommended Biological Catch** to the Finfish Working Group and the PZJA.

AGENDA ITEM 4 MANAGEMENT

4.1 Review of TSFF data needs including daily fishing logbooks

The FFRAG are asked to review the past and present daily fishing logbooks in use in the Torres Strait Finfish Fishery and the information this provides. RAG are asked to **DISCUSS** and **PROVIDE ADVICE** to AFMA on issues raised with the present logbook with a view to updating the logbook ahead of the 2021/22 fishing season.

4.2 Western line closure

The FFRAG are asked to provide further advice on removal of the part of the Western line in the 'top-hat' area of the Torres Strait Protected Zone north of Numar Reef.

4.3 Fishery management history – Torres Strait Spanish mackerel fishery

FFRAG are asked to **DISCUSS** and **PROVIDE ADVICE** to AFMA on a table summarising recent RAG work on capturing the history of active fishing boats and IUU fishing incidents on the earlier stages of the Torres Strait Spanish mackerel fishery.

AGENDA ITEM 5 RESEARCH

5.1 Outcomes from Torres Strait Scientific Advisory Committee (TSSAC) meeting

The FFRAG will note an update on the outcomes of the 2 November 2020 TSSAC meeting which considered whether four research projects relevant to the Torres Strait Finfish Fishery will be included in the December 2020 public call for research funding proposals for the 2021/22 financial year.

5.2 Update: Coral trout and Spanish mackerel biological sampling project

The FFRAG will note an update from Principle Investigator Jo Langstreth (QDAF) on the TSSAC funded project "*Torres Strait Finfish Fishery: Coral trout and Spanish mackerel biological sampling*" AFMA project number 20202/0803.

AGENDA ITEM 6 OTHER BUSINESS

6.1 Other Business

The FFRAG is invited to nominate any other business for discussion.

6.2 Meeting schedule and priorities - date and venue for next meeting

The FFRAG will confirm arrangements for FFRAG 9 and 10, tentatively scheduled for September and October 2021.

CLOSE OF MEETING

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
PRELIMINARIES Declarations of interests	Agenda Item No. 1.3 FOR ACTION

RECOMMENDATIONS

That the Finfish RAG:

1. **DECLARE** all real or potential conflicts of interest in Torres Strait Finfish Fisheries at the commencement of the meeting;
2. **DETERMINE** whether the member may or may not be present during discussion of or decisions made on the matter which is the subject of the conflict;
3. **ABIDE** by decisions of the RAG regarding the management of conflicts of interest; and
4. **NOTE** that the record of the meeting must record the fact of any disclosure, and the determination of the RAG as to whether the member may or may not be present during discussion of or decisions made on the matter which is the subject of the conflict.

BACKGROUND

1. Consistent with the *Protected Zone Joint Authority (PZJA) Fisheries Management Paper No. 1 (FMP1)*, which guides the operation and administration of PZJA consultative forums, members are asked to declare any real or potential conflicts of interest.
2. RAG members are asked to provide the executive officer with a list of declared interests.
3. FMP1 recognises that members are appointed to provide input based on their knowledge and expertise and as a consequence, may face potential or direct conflicts of interest. Where a member has a material personal interest in a matter being considered, including a direct or indirect financial or economic interest; the interest could conflict with the proper performance of the member's duties. Of greater concern is the specific conflict created where a member is in a position to derive direct benefit from a recommendation if it is implemented.
4. When a member recognises that a real or potential conflict of interest exists, the conflict must be disclosed as soon as possible. Where this relates to an issue on the agenda of a meeting this can normally wait until that meeting, but where the conflict relates to decisions already made, members must be informed immediately. Conflicts of interest should be dealt with at the start of each meeting. If members become aware of a potential conflict of interest during the meeting, they must immediately disclose the conflict of interest.
5. Where it is determined that a direct conflict of interest exists, the forum may allow the member to continue to participate in the discussions relating to the matter but not in any decision making process. They may also determine that, having made their contribution to the discussions, the member should retire from the meeting for the remainder of discussions on that issue. Declarations of interest, and subsequent decisions by the forum, must be recorded accurately in the meeting minutes.
6. Interests declared at the last FFRAG meeting (FFRAG 7 data meeting 8 October 2020) are provided at **ATTACHMENT A**.

FFRAG 8 Attachment 1.3a, FFRAG Standing Register of Declared Interests as recorded at FFRAG 7 on 8 October 2020

Name and position	Organisation	Declaration of interest
David Brewer, Independent Chair	Upwelling P/L (David Brewer Consultancy).	Director – Upwelling P/L (David Brewer Consulting). Honorary Fellow – CSIRO Chair - Torres Strait Finfish RAG Scientific member – Torres Strait Finfish Working Group Scientific member – Northern Prawn Fishery RAG Current consultancies with Quandamooka Yoolooburrabee Aboriginal Corporation. Co-investigator on Torres Strait non-commercial fish fishery project funded by TSSAC with RAG member Kenny Bedford.
Rocky Stephen, Industry Member	Chair, Kos and Abob Fisheries, Ugar Brother Bear Fisheries, Ugar Torres Strait Island Regional Council. Torres Strait Regional Authority	Councillor for Ugar, Chairperson of Kos and Abob Fisheries Ugar, Works with brother in a commercial fishing business on Ugar, Eastern cluster representative on the PZJA Finfish RAG & Working Group. Torres Strait Scientific Advisory Committee. Does not hold a TIB licence. TSRA Board member for Ugar
Tenny Elisala, Industry Member	Industry, Torres Strait Regional Authority	TSRA Ranger Dauan, TIB licence holder.
John Tabo Jr, Industry Member	Industry, Torres Strait Regional Authority Finfish Quota Management Committee.	Commercial coral trout fisher (TIB) Holds a Torres Strait Traditional Inhabitant Boat Licence. Member of the Torres Strait Regional Authority Finfish Quota Management Committee. Newly elected board member for MDW Fisheries Association on Mer Island.
Kenny Bedford, Industry Member	Debe Mekik Le Consultancy	Runs a consultancy business which has delivered projects relevant to Torres Strait fisheries.
Keith Brightman, Acting TSRA Member in lieu of Mark Anderson	Torres Strait Regional Authority	No interests declared.
Tony Vass, Industry Member, Sunset	Industry, Sunset	No financial interests in the Torres Strait. Former mackerel fisher in Torres Strait 1990 to 2008, does not own or operate a licence in Torres Strait.
Michael O'Neill, Scientific Member	Queensland Department of Agriculture and Fisheries	Principal scientist for TSSAC recommended two-year project for Spanish mackerel stock assessment work. Member of PZJA Finfish RAG and Working Group.
Ashley Williams, Scientific Member	CSIRO Australian Bureau of Agricultural and	Recent move to CSIRO. Continued work with ABARES as a fishery scientist under Department of Agriculture and Water Resources. Involved in previous Torres Strait research.

	Resource Economics James Cook University	
Rik Buckworth, Scientific Member	Sea Sense (Consultancy)	Independent Fisheries Scientist with Sea Sense Consultancy, adjunct at Charles Darwin University, ex NT Fisheries, AFMA Northern Prawn RAG, Principal investigator on a proposal seeking funding for TS Spanish mackerel assessment work. Chair of NT Research Advisory Committee for FRDC. Chair of Northern Territory Aquaculture Management Advisory Committee.
Tom Roberts	QDAF member	Reef line fisheries manager Queensland East Coast.
Selina Stoute	AFMA member	No interests. Manager of Andrew Trappett who is a co-investigator on two Torres Strait funded research projects.
Andrew Trappett, RAG Executive Officer	Australian Fisheries Management Authority	Co-investigator on two TSSAC funded projects for Spanish mackerel stock assessment and biological data collection in a data services and industry liaison role.

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
PRELIMINARIES Action items and record from last meeting	Agenda Item No. 1.4 FOR NOTING

RECOMMENDATIONS

1. That the Finfish Fishery RAG **NOTE** the:
 - a. the progress of actions arising from previous FFRAG meetings; and
 - b. draft meeting record of the FFRAG 7 data meeting on 8 October 2020 as circulated for member comment on 20 October 2020.

KEY ISSUES

Actions arising

1. Progress against the draft actions arising from FFRAG 7 is detailed in **Table 1**
2. Progress against the draft actions arising from prior RAG meetings are detailed in **Table 2**

Meeting record

3. The draft meeting record from FFRAG 7 was circulated for member comment on 20 October 2020 with the period for comments to close on 30 October 2020.

ATTACHMENTS

Attachment A - Finfish RAG 7 Data Meeting, 8 Oct 2020, Draft Meeting Record as circulated for member comment on 20 October 2020.

Table 1. Status of draft actions arising from FFRAG 7 data meeting 8 October 2020

Number	Agenda item	Action	Status update for FFRAG 8
FFRAG 7, Action 1	2.1 Review of data inputs	QDAF to investigate whether older licensing data might be available to understand vessels and years active during the pre-1989 phase of the TSFF.	In progress – QDAF to advise on any updates.
FFRAG 7, Action 2	2.1 Review of data inputs	AFMA to request access to the logbooks of Mr Snowy Whitaker, <i>AFV Trader Horn</i> from the Townsville Maritime Museum where they are reportedly catalogued.	In progress – enquiry sent by AFMA on 27 October 2020. AFMA to advise on any updates.
FFRAG 7, Action 3	2.1 Review of data inputs	The RAG noted that the project team would consult out-of-session with the author of the study that summarised these data, Geoff McPherson. This might lead to an adjustment of the figures based on advice received. Stock assessment team are to report the findings of this discussion back to the RAG.	Complete – update to be provided under agenda paper 3.1.
FFRAG 7, Action 4	2.1 Review of data inputs	AFMA to arrange an out-of-session meeting with the SESSF RAG chair and the Spanish mackerel stock assessment project team to discuss options for setting an RBC using a forecasting method and report back to the RAG.	Complete - update provided under agenda paper 3.2.

Table 2. Status of draft actions arising from previous FFRAG meetings

Number	Agenda item	Action	Status update
FFRAG 6, Action 1	2.2 Coral trout RBC	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).	Ongoing – update under FFRAG 8 Agenda Item 3.3
FFRAG 5, Action 1	2.1 RAG Updates	AFMA are to advise on appropriate information streams and resources to help the FFRAG to consider the impacts of climate change on the Torres Strait Finfish Fishery.	Ongoing – FFRAG watching brief to keep informed of all climate change relevant research and project outputs. RAG technical

			member attended a presentation on project outputs on 14 Oct 2020.
FFRAG 5, Action 2	2.1 RAG Updates	AFMA are to confirm that TIB licence holders are receiving text message, catch-watch updates from AFMA linking fishers to the reports on the PZJA website.	Ongoing – AFMA encourages all fishers to contact 07 4069 1990 to check their contact details are correct.
FFRAG 5, Action 3	2.1 RAG Updates	AFMA to update the FFRAG on the outcomes of Torres Strait case study fisheries adaption to climate change case study to be presented once complete (it was noted that it may be appropriate for AFMA to arrange an expert to present to the FFRAG on this report at an upcoming meeting).	In progress – RAG scientific members attended a presentation from project PI Leo Dutra on 14 Oct 2020.
FFRAG 5, Action 4	2.1 RAG Updates	TSRA to forward FFRAG a link to AIMS water temperature self-serve portal.	Complete – sent with TSRA comments to Finfish RAG 6.
FFRAG 5, Action 5	3.1 Harvest strategy and 5.2.2 Spanish mackerel stock assessment.	FFRAG are to work on forming a matrix of scenarios (different target reference points and building rates) to support RBC setting and deciding control rules for the Harvest Strategy. Matrix is to compare RBC, time to reach B Target and risk to stock (being number of model runs dropping below the limit reference point).	Ongoing - To be addressed under renewed Harvest Strategy project (if funded in 2021).
FFRAG 5, Action 6	5.2.2 Spanish mackerel stock assessment	Obtaining accurate catch and effort data from the TIB sector is a key data need. AFMA and TSRA are to continue supporting industry in collecting voluntary effort data in catch disposal records and work on progressing compulsory logbook reporting as a priority.	Ongoing – AFMA continues to support fishers with catch reporting through the Fish Receiver System and will conduct initial consultation with Whaphill Project trainees at Erub on 27-28 Oct 2020.

FFRAG 5, Action 7	5.2.2 Spanish mackerel stock assessment	FFRAG are to consider retrospective analyses for Spanish mackerel and how these can be built in to the assessment	Incomplete – Spanish mackerel stock assessment can advise whether this is possible in the 2020 stock assessment or the next round.

PZJA Torres Strait Finfish Fishery Resource Assessment Group

FFRAG Meeting 7

8 October 2019
Video Conference

Draft Meeting Record

Note all meeting papers and records are available on
the PZJA webpage:

<https://www.pzja.gov.au/torres-strait-finfish-groups>



Australian Government

Australian Fisheries Management Authority

Agenda Item 1 – Preliminaries

1.1 Preliminaries

The seventh meeting of the PZJA Torres Strait Finfish Fishery Resource Assessment Group (FFRAG) was commenced at 9:30 am via videoconference. FFRAG Chairperson, Mr David Brewer, welcomed participants and acknowledged the Quandamooka Traditional Owners of the land where the chair was located and acknowledged the other Traditional Owners of the land on which the meeting was held where all the members were located.

Traditional Inhabitant Industry Member for Mailulalgal - Paul Lowatta was noted as an apology.

AFMA sought consent from the RAG to record the meeting for the purpose of ensuring an accurate record. AFMA advised that the recording is kept secure and is deleted once the final meeting record is published. There were no objections to the meeting being recorded.

1.2 Adoption of agenda

The agenda (**Attachment A**) was adopted as circulated by AFMA.

The RAG noted that the key items for discussion were to provide guidance to the Spanish mackerel stock assessment team ahead of the November 2020 stock assessment by reviewing all available data, discuss select and endorse key data inputs and to also review research priorities for the near future.

1.2 Declarations of interests

Each RAG member declared their interest in the fishery as documented in **Table 1** (below).

Table 1. Attendance and declarations of interest – Finfish RAG 6 meeting members

Name and position	Organisation	Declaration of interest
David Brewer, Independent Chair	Upwelling P/L (David Brewer Consultancy).	Director – Upwelling P/L (David Brewer Consulting). Honorary Fellow - CSIRO Chair - Torres Strait Finfish RAG Scientific member – Torres Strait Finfish Working Group Scientific member – Northern Prawn Fishery RAG Current consultancies with Quandamooka Yoolooburrabee Aboriginal Corporation. Co-investigator on Torres Strait non-commercial fish fishery project funded by TSSAC with RAG member Kenny Bedford.
Rocky Stephen, Industry Member	Chair, Kos and Abob Fisheries, Ugar Brother Bear Fisheries, Ugar Torres Strait Island Regional Council. Torres Strait Regional Authority	Councillor for Ugar, Chairperson of Kos and Abob Fisheries Ugar, Works with brother in a commercial fishing business on Ugar, Eastern cluster representative on the PZJA Finfish RAG & Working Group. Torres Strait Scientific Advisory Committee. Does not hold a TIB licence. TSRA Board member for Ugar
Tenny Elisala. Industry Member	Industry, Torres Strait Regional Authority	TSRA Ranger Dauan, TIB licence holder.

Name and position	Organisation	Declaration of interest
John Tabo Jr, Industry Member	Industry, Torres Strait Regional Authority Finfish Quota Management Committee.	Commercial coral trout fisher (TIB) Holds a Torres Strait Traditional Inhabitant Boat Licence. Member of the Torres Strait Regional Authority Finfish Quota Management Committee. Newly elected board member for MDW Fisheries Association on Mer Island.
Kenny Bedford, Industry Member	Debe Mekik Le Consultancy	Runs a consultancy business which has delivered projects relevant to Torres Strait fisheries.
Keith Brightman, Acting TSRA Member in lieu of Mark Anderson	Torres Strait Regional Authority	No interests declared.
Tony Vass, Industry Member, Sunset	Industry, Sunset	No financial interests in the Torres Strait. Former mackerel fisher in Torres Strait 1990 to 2008, does not own or operate a licence in Torres Strait.
Michael O'Neill, Scientific Member	Queensland Department of Agriculture and Fisheries	Principal scientist for TSSAC recommended two-year project for Spanish mackerel stock assessment work. Member of PZJA Finfish RAG and Working Group.
Ashley Williams, Scientific Member	CSIRO Australian Bureau of Agricultural and Resource Economics James Cook University	Recent move to CSIRO. Continued work with ABARES as a fishery scientist under Department of Agriculture and Water Resources. Involved in previous Torres Strait research.
Rik Buckworth, Scientific Member	Sea Sense (Consultancy)	Independent Fisheries Scientist with Sea Sense Consultancy, adjunct at Charles Darwin University, ex NT Fisheries, AFMA Northern Prawn RAG, Principal investigator on a proposal seeking funding for TS Spanish mackerel assessment work. Chair of NT Research Advisory Committee for FRDC. Chair of Northern Territory Aquaculture Management Advisory Committee.
Tom Roberts*	QDAF member	Reef line fisheries manager Queensland East Coast.
Selina Stoute	AFMA member	No interests. Manager of Andrew Trappett who is a co-investigator on two Torres Strait funded research projects.
Andrew Trappett, RAG Executive Officer	Australian Fisheries Management Authority	Co-investigator on two TSSAC funded projects for Spanish mackerel stock assessment and biological data collection in a data services and industry liaison role.

Meeting observers and declarations of interests registered.

Quinten Hirakawa	TSRA	TSRA project officer, TIB licence holder – commercial TRL fisher background. 25 years working with Queensland Boating and Fisheries Patrol (QDAF). Recent employment with TSRA Ranger Program and now with the TSRA Fisheries Team.
Trevor Hutton	CSIRO	CSIRO receives research funding. Principal investigator for TSSAC recommended project to develop a harvest strategy for

		the Torres Strait Finfish Fishery. AFMA Northern Prawn Fishery (NPF) RAG regular observer and Principle Investigator for the NPF stock assessment project. Through CSIRO is involved in the desktop study to assess Climate Change Impacts on Torres Strait (small allocation of time).
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Agenda Item 2 – Stock assessments

2.1 Review of data inputs to support the 2020 Spanish mackerel stock assessment

The FFRAG noted a presentation from the Spanish mackerel stock assessment project team Dr Michael O'Neill and Dr Rik Buckworth covering a range of data issues under four broad themes (**Table 2** below). The RAG noted an update on progress made to date and that a number of issues were complete, outstanding or being progressed as outlined in **Table 2** below. The RAG noted that RAG advice would be sought on each issue highlighted in blue.

Table 2. 2020 RAG list of assessment items with colour coded status updates. Black font – completed; Red font - outstanding; Blue font – new/review

Assessment item	Status
1. Total annual harvest tonnes	
Established time series of TIB harvests	✓
Standardise AFMA and DAF data scripts	✓
Revise annual fish weights in Sunset tonnages	
Review harvest estimates 1940-1988	
Keep or adjust the 100 t Taiwanese gillnet harvest 1979-1986	
Assess logbook over reporting of fish harvest (paper fish)	✓
2. Standardised catch rates	
Assess all boats and subsets of boats	✓
Include annual increase in fishing power from QLD East Coast	✓
Spatially classify harvests	✓
Re-examine the number of dories reported	
Categorise fishing skippers and dory drivers	
3. Biology	
Using Torres Strait data	✓
Select new age frequency data	
Select natural mortality rates	
4. Stock assessment model	
Demonstrated methods and model to the RAG	✓
Define the data treatments (analyses)	
Stock forecasts assuming constant harvests	✓
Set the method for calculating RBCs	
Design RBC decision tables	
Dissect the depletion levels up to 1989 and catch history	
Retrospective analyses	

Section 1 - Total Harvests

Revise average fish weights in Sunset tonnages

The project team sought advice from the RAG on whether to vary the current approach for assuming mean weight per fish in calculating harvest tonnages from daily fishing logbooks. The RAG noted that the model currently calculates total harvest from sunset logbooks by multiplying the number of fish reported in the logbook by a constant mean fish weight of 6.9 kg being applied to all years of catch data at present. The team proposed departing from this constant mean weight on the basis of newly available length frequency and ageing data which can now provide mean weight estimates for eleven years in the catch history (1974-75, 1978-79, 1983-84, 1998 to 2005 and 2019-20).

The RAG noted that there does not appear to be a great deal of range in the eleven different years where fish weights are now available, generally varying about one kilogram. The RAG noted an analysis showing that this new data rule would not have a significant change in the historical understanding of total harvest levels.

The RAG noted advice from Dr O'Neill on the representativeness of some of the newly available length and weight data. The RAG noted advice that the 1983-84 sampling data may have originated from a tagging study, meaning that it may, or may not, have had a different sampling methodology (e.g. might have been aiming to capture and release younger fish). The RAG noted that further investigation would occur to attempt to find the methods from this study. The RAG recommended that as a principle all available data should be incorporated into the model for now unless there was evidence to discard it as not representative.

To support the 2020 stock assessment the RAG recommended:

- **changing the constant assumed average fish weight data rule to apply a weighted-mean value to the years for which a mean fish weight was not available from catch sampling; and**
- **that the project team use total harvest values available from Catch Disposal Records (CDRs) from the 2018-19 season onwards noting these were verified weights in port.**

Review estimates of harvest tonnages 1940-1988

The RAG noted that prior to the introduction of the AFMA SM02 daily fishing logbook in 1989 that available catch and effort data for the fishery is patchy and for some sectors absent. The RAG noted the importance of developing an agreed catch history for the fishery based on the best available data, expert advice (including industry advice) and agreed assumptions. The RAG also noted that further improvements are likely over time as more information is gathered.

Attachment B summarises advice provided by RAG industry members at the meeting on historic vessels known to be operating in certain years. To assist the RAG in cataloguing these data to support future assessments AFMA proposes that this summary becomes a live document across meetings and can be updated as further investigations are carried out.

The historical harvest estimates catch series (1940-1988) recommended by the RAG at the meeting is outlined in **Table 3** below. RAG advice on data for each fishing sector is described in the following sub-sections below.

Sunset sector historic harvests

The RAG noted a table of older sunset harvest estimates from the project team based on available data from *McPherson et al.* (1986) (**Table 3** below). The project team questioned the completeness of these older data and sought advice from the RAG. It was noted that the 1957 to 1962 data was reportedly from a single boat only and that the 1975-1979 data was reportedly from the Queensland Fish Board (along with some processor data) and may not be complete. The number of boats represented in these data and operating in the fishery during these two periods is not clear.

Action item 1: QDAF to investigate whether older licensing data might be available to understand vessels and years active during the pre-1989 phase of the TSFF.

Action item 2: AFMA to request access to the logbooks of Mr Snowy Whitaker, *AFV Trader Horn* from the Townsville Maritime Museum where they are reportedly catalogued.

Action item 3: The RAG noted that the project team would consult with the author of the study that summarised these data, Geoff McPherson, out of session, that might lead to an adjustment of the figures based on advice received. Stock assessment team are to report the findings of this discussion back to the RAG.

The RAG did not recommend any changes to the historic sunset sector catches for the 2020 stock assessment noting that the project team would be seeking further advice from retired scientist Geoff McPherson out of session.

'TIB' sector historic harvests

RAG Traditional Inhabitant industry members recommended that the catch history should be amended to reflect a zero catch for the 'TIB' islander commercial catches prior to 1975, noting that island infrastructure did not exist prior to this time to support islander commercial fishing. Industry also advised that any active Traditional Inhabitant fishers prior to 1975 were likely working on non-indigenous boats.

Industry members were satisfied with the TIB harvest data and suggested for the project team to conduct further checking of older island freezer data to make sure it was reflected in the more recent harvests time series after 1989.

On the basis of the advice from the Traditional Inhabitant industry members, the RAG recommended the table of catches be amended to reflect zero tonnes of harvest from the TIB sector prior to 1975 as an input to the 2020 stock assessment model. The RAG supported the assumption of 3 t harvest to be input into the model per year for TIB sector from 1975 to 1988.

Traditional fishing

The RAG noted advice from Traditional Inhabitant industry members that the assumed figures for subsistence catch of Spanish mackerel appeared to be too high at 10 t per year. It was considered that, prior to the growth of the TIB commercial fishing sector, catches of Spanish mackerel for subsistence purposes were likely to be rarer or incidental while taking other species. Industry members advised that once more TIB fishers were out targeting mackerel for commercial purposes from the 1970s, catches of the species for subsistence would have also increased.

The RAG accepted this advice as the best available information and agreed to recommend that the traditional harvest of mackerel be revised from 10 t down to 2 t prior to 1975 as an input to the 2020 stock assessment model.

Recreational harvests

The RAG noted the 2 t estimate for recreational catches is based on modern QDAF led survey techniques and is applied consistently across all years as an input into the model. The RAG had no basis to deviate from this approach.

The RAG therefore recommended maintaining a 2 t recreational take of Spanish mackerel for all years in the 2020 stock assessment model.

Options for connecting the older historical catch data with the modern logbook time series.

The project team presented the RAG with four options (logistic, polynomial, log-linear and weighted mean) available to fit the assumed total harvests in the model to the pre-1989 data points of harvest estimates available from older sources (1957-1962 data from a single boat and 1975-1979 data from the Queensland Fish Board and some processors).

RAG scientific members advised that the log-linear and weighted-mean models should be disregarded as these approaches placed too much emphasis on the older uncertain points (1957-1962 and 1975-1979) in the time series.

Based on this advice the RAG recommended that both the logistic and polynomial approaches should be used as inputs to the 2020 stock assessment as they appeared to fit the available data historic data points well.

Table 3. Summary of RAG advice on harvest estimates 1940 to 1988 to support the 2020 stock assessment. Yellow highlighted cells represent changes made from the 2019 assessment based on RAG advice.

Year	Label	'TIB'	Traditional	Sunset	Recreational	Charter	PNG	Total
1940	1940-41	0	2	0	0	0	0	2
1957	1957-59	0	2	34	2	0	0	38
1959	1959-60	0	2	52	2	0	0	56
1960	1960-62	0	2	40	2	0	0	44
1962	1962-75	0	2	70	2	0	0	74
1975	1975-76	3	2	68	2	0	0	75
1976	1976-77	3	2	81	2	0	0	88
1977	1977-79	3	2	69	2	0	0	76
1979	1979-89	3	2	57	2	0	0	64

Taiwanese Illegal, Unregulated, Unreported (IUU) harvests

The RAG noted that part of the historical catch series is the assumed harvest from Taiwanese drift-gillnet vessels reportedly operating across northern Australian from the late 70's, 80's and into the early 90's, with incidents, pursuits and apprehensions occurring through this time period. The RAG recalled a decision made in the 2019 assessment to inflate the time series of total harvests by 100 t for the years 1979 to 1989 to include this estimate of mortality on the stock in the model.

The RAG noted a presentation from Rik Buckworth (**Attachment D**) summarising known reports and information to support the inclusion of these data. The team sought RAG views on, continuing to account for possible IUU catches and if so, on the likely duration and magnitude of these harvests.

The RAG agreed:

- there was a sufficient weight of evidence to show that IUU fishing of Spanish mackerel did occur. This was chiefly based on the *1992 Joint Advisory Council* advice of an apprehension of a drift net boat with a large quantify of catch in its hold and reported take of mackerel in March 1992 and reports from *McPherson 1986*.
- that the IUU catches should be accounted for in the stock assessment. If IUU catches are not accounted for, the stock assessment may overestimate the current biomass estimate through time which could then lead to over-harvesting.
- for the time series of harvests from Taiwanese IUU to be extended from 1986 to 1992-93 and to taper the catch down to zero by this point (i.e. extending harvest into 1990, 1991, 1992 reducing to zero tonnes to blend into the existing time series by 1993). Tapering was agreed based on the assumption that IUU fishing decreased as the presence of Australian fishing boats on the fishing grounds increased.

Section 2 – Standardised catch rates

Review of the number of dories reported in logbooks

The RAG noted that the stock assessment is run a number of times with different parameters (model runs) to examine how the model responds and to gauge for possible uncertainty in data which is put into the model. One issue being examined in the stock assessment update in 2020 is the available data on the number of dories used by a primary boat.

In the 2019 assessment some model runs included the dory number data while others excluded it. The RAG was asked to review the data on dory numbers and provide advice on how it should be treated in the next assessment noting uncertainties associated with some of these data.

The RAG noted that from 1989 to 2003 the reported number of dories were low, with data suggesting that a lot of boats reported 'zero' dories. The RAG queried whether the earlier year reports were 'null' values with no reporting conducted or whether they were actually reported by the operations as 'zeros' meaning the boats actually did not have any dories. The RAG noted industry reports that dories were common through the recent history of the fishery (e.g. Tony Vass was fishing from 1990 to 2007).

The RAG considered that, in general, this data-set was unreliable and might be due to older logbooks (e.g. Queensland State 'LN' Daily Fishing Logbook and AFMA SM01 and SM02 which were used prior to the introduction of the present TSF01 logbook in 2003) used to collect catch and effort data may not have had a designated space for recording the number of dories fished.

RAG technical members advised that while the number of dories fished was likely to be an influential factor, the standardisation does take account of vessel effects, which would go some way to accounting for this variation within operations and between seasons.

Based on this advice, the RAG recommended not including the factor of number of dories in the 2020 stock assessment until further fact finding and investigation on the older data could be conducted.

Fishing power

The RAG reviewed the inclusion of the 'Fishing Power' effect (FP) on the time series of catch rates. The RAG noted that FP was the steady increase of the ability of an operation to catch fish based on improvements in gear and technology, such as echo sounders and Global Positioning Systems (GPS). The RAG noted that the previous 2019 assessment model runs both included and excluded FP as a factor. The project team was seeking RAG advice about whether to include FP, exclude FP, or present model runs with both options.

The RAG noted that the FP in the Torres Strait model was a calculation carried over from the Queensland East Coast stock assessment and, if applied yearly, would mean about a 23 per cent increase in FP from 1989 to present (0.955 to 1.187). The RAG noted advice from industry that prior to 1989 no one had GPS units, but by the mid 90's this technology was common across the fleet; meaning that FP has indeed been changing across the time series.

Based on this advice the RAG recommended that, for the 2020 stock assessment, fishing power should be included as a factor in the model in all model runs i.e. no model runs will be performed excluding FP.

Traditional Inhabitant Boat sector catch rates

For information only, the RAG noted that the upcoming assessment would present the first two points on the CPUE series. The RAG members commended the TIB industry for collecting this voluntary catch and effort data and welcomed the intention to further build this series over time.

The RAG noted that the TIB data points appeared to be in contradiction to the sunset catch rate series with the 2019-20 season catch rate lower than 2018-19. However, it was noted that 2018-19 may have been an outlier with very good catch rates and weather and that 2019-20 season had generally poor weather coupled with community freezers not being in operation.

Section 3 – Biology

Select fish age-frequency data

The RAG noted that the 2019 assessment only had fish ageing and length frequency data from QDAF led biological sampling from the years 2000 to 2005. The project team advised that RAG that a range of older fish ageing data (11 years in total) was now available from older research projects for possible inclusion as inputs to the 2020 stock assessment, based on RAG views on the usefulness of these new data.

The team advised that a potential issue with these data is that, for each year of sampling, data may have come from a different research project and may have different sampling methods, and may, or may not be fully representative of the fishing effort. For example, the 1983-84 data were reportedly from a project that was attempting to target fish for tagging projects and might have been aiming to capture younger, smaller, stronger fish that would live for years and possibly be recaptured in future.

The RAG recommended that, on principle, all available ageing data should be incorporated into the model for now, unless there was evidence to discard it as being not representative. The RAG noted that future work may revisit these samples and that further information on the methods for these research projects that collected the data, may become apparent. But the RAG was comfortable using the data for now, noting that it does not appear to change drastically from year to year.

Finfish RAG recommended that all eleven years of available fish age and length data (Figure 1 below) should be included as inputs into the 2020 stock assessment.

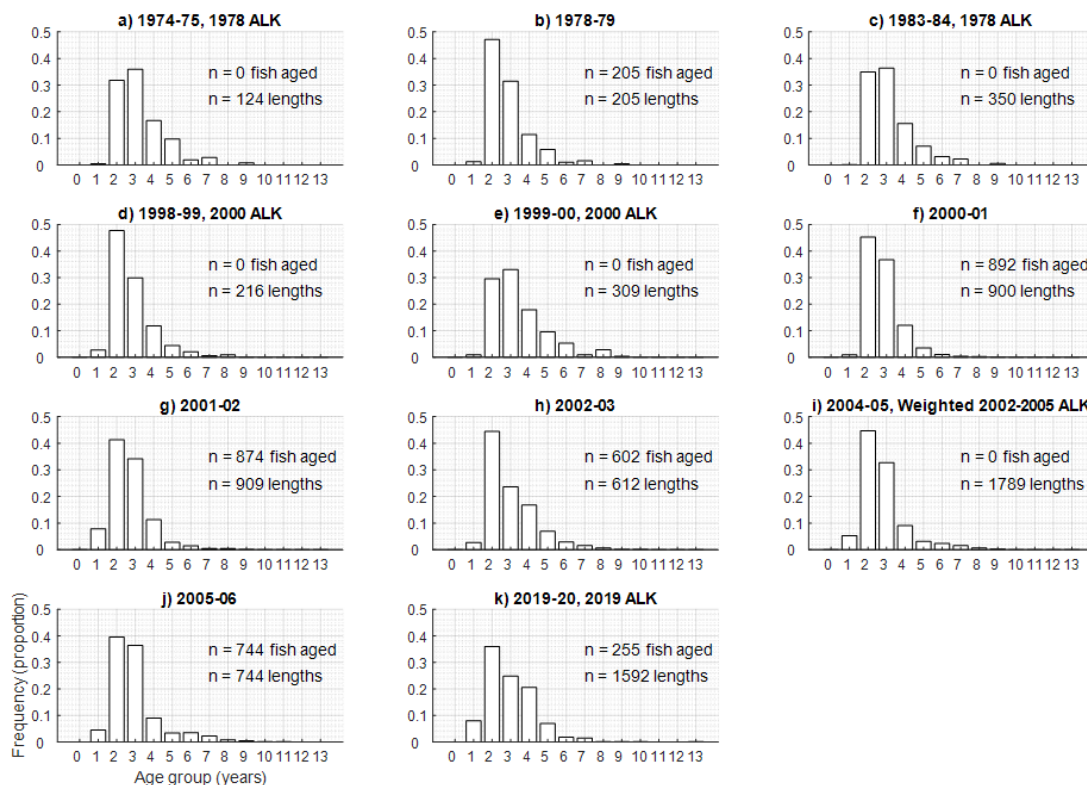


Figure 1. Age and length data for Torres Strait Spanish mackerel recommended by Finfish RAG for inclusion in the 2020 stock assessment.

Natural mortality rate

Prior to the 2019-20 round of biological sampling the oldest fish from Torres Strait ageing data (from 2000 to 2005 sampling rounds) was known to be 12 years old. The RAG noted that, with updated sampling information from 2019, it was now known that the oldest fish measured from Torres Strait was 13.5 years and that this data could be used to inform estimates of natural mortality rate of the stock (M). The RAG noted that an analysis could be performed (the *Then et al.* methodology¹) to give an indication of what a value for natural mortality might feasibly be based on information from hundreds of different fish species. Applying this methodology to the Torres Strait Spanish mackerel stock resulted in an estimation of $M=0.45$.

Some consideration was given by the RAG to the range of M values of 0.25, 0.35 and 0.45 as an alternative. But these were not recommended by the RAG as it was considered that 0.25 was likely too low of an estimate for M (based on not having any older fish in the age-sampling data, oldest fish of 13.5 years, not 20 years like the Queensland East Coast sampling data) and would likely result in an overly conservative population estimate.

Based on this advice the RAG recommended that the 2020 assessment model conduct model runs reusing the Natural Mortality (M) value of 0.3 from the 2019 stock assessment (which was considered as a good logical lower value estimate), 0.45 as a higher range estimate (based on the *Then et al.* methodology) and also recommended using an M of .375

¹ Then, A. Y., Hoenig, J. M., Hall, N. G., and Hewitt, D. A. 2015. Evaluating the predictive performance of empirical estimators of natural mortality rate using information on over 200 fish species. *Ices Journal of Marine Science*, 72: 82-92.

as a mid-point model run. RAG recommended M values of 0.3, 0.375, 0.45 be used in the 2020 assessment.

Section 4 – The stock assessment model

Based on the RAG's advice on each data issue above, the RAG noted and agreed that eight separate model runs would be undertaken in coming stock assessment. The factors for each of the eight model runs is described in **Table 4** below.

The RAG noted that the project team would be meeting with retired Torres Strait Spanish mackerel scientist Geoff McPherson out of session during the week of 12-16 October 2020. This meeting would investigate and advise the team on whether to add an additional set of model runs with any adjusted figures (*McPherson actual catch history data* or *McPherson adjusted catch history data*) based on Mr McPhersons' advice.

Should these model runs be conducted, the RAG noted that **Table 4** would be expanded to 15 model runs to encompass this extra factor for consideration (an additional six runs might be performed as per runs 1-6 below but with adjusted historic catch data rather than actual).

Table 4. Analyses / model runs agreed by the RAG for the 2020 assessment.

Label	Fish weights	Catch rate series	Natural mortality rate (M)	Harvest pre-1989	Ageing data	Start year for data
1	Weighted average	No tenders and fishing power included	0.3	Historic catches actual + polynomial model + IUU tapered	All years	1940
2	Weighted average	No tenders and fishing power included	0.375	Historic catches actual + polynomial model + IUU tapered	All years	1940
3	Weighted average	No tenders and fishing power included	0.45	Historic catches actual + polynomial model + IUU tapered	All years	1940
4	Weighted average	No tenders and fishing power included	0.3	Historic catches actual + logistic model + IUU tapered	All years	1940
5	Weighted average	No tenders and fishing power included	0.375	Historic catches actual + logistic model + IUU tapered	All years	1940
6	Weighted average	No tenders and fishing power included	0.45	Historic catches actual + logistic model + IUU tapered	All years	1940
7	Weighted average	No tenders and fishing power included	0.3	n/a	All years	1989
8	Weighted average	No tenders and fishing power included	0.375	n/a	All years	1989
9	Weighted average	No tenders and fishing power included	0.45	n/a	All years	1989

Method for calculating RBCs

The RAG noted that a time lag existed between the point for which catch data was available, the running of the stock assessment and the setting of a sustainable catch limit for the next season in advance of this time (**Figure 2** below). RAG advice was sought on maintaining the current approach or adopting a different method that forecast the RBC in the fishing season. The RAG noted that there is no single policy approach and that a number of important assumptions need to be agreed for the later approach. They include assumptions on the level of recruitment and catch expected in the future years.

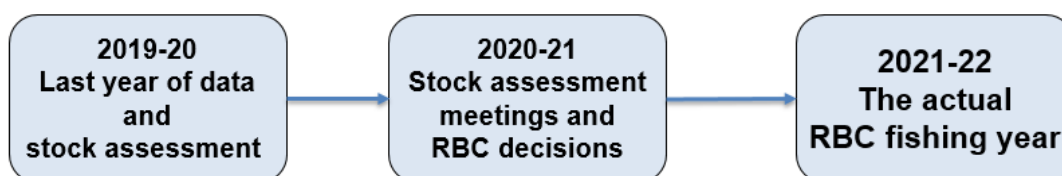


Figure 2. Illustration of the 12 month lag between available information and setting of a sustainable catch level.

Members noted that in the Southern Eastern Scalefish and Shark Fishery (SESSF) that the method for calculating RBCs varied. But for key species, where appropriate, a forecast was made of what the likely mortality would be in the intervening year and this was used to adjust the RBC accordingly. It was also noted that many SESSF species were managed under multi-year TACs and did not have assessments run every year.

The RAG recommended that forecasting should be developed and adopted as a best practice method for the TSFF. The RAG noted that, as an option, it could be assumed for Spanish mackerel that the entire sunset sector available TAC would likely be caught in the intervening year and a running average value of harvests could be used for the likely TIB sector catches (noting a higher value is put aside to support expansion of fishing effort).

Action item 4: AFMA to arrange an out-of-session meeting with the SESSF RAG chair and the Spanish mackerel stock assessment project team to discuss and report back to the RAG on options for setting an RBC using a forecasting method.

RBC decision tables

The RAG noted the approach used in the 2019 assessment, where a range of target reference point fishing mortalities were considered in recommending an RBC (F MSY, F 40, F 48, F 60), with the median value of all agreed model runs being used to select the RBC. It was also noted that the risk in setting an RBC was considered in terms of the number of model runs that would drop the stock below the default limit reference point of B20 (20 per cent of unfished biomass) over 12 years and 20 years. In 2019 the RAG also considered runs with a mean level of recruitment or a depressed level of recruitment.

The RAG recommended continuing this same approach for the 2020 assessment to maintain consistency. The RAG noted that the 2020 assessment would have a more refined range of model runs presented for consideration. It was noted that the risk exercise would be using 13 years rather than 12 years due to an updated maximum age of Torres Strait fish from the 2019 sampling program.

Agenda Item 3 – Research priorities

The RAG noted the agenda paper and an overview from AFMA on previous RAG discussions on TSFF research priorities. AFMA advised that projects funded during 2020-21 for the TSFF were: the Spanish mackerel stock assessment, biological sampling program (mackerel round two and trout round one) and scoping options for collecting non-commercial catch data, but that no research funding was committed for the TSFF past the present financial year.

The RAG noted and reviewed the previously identified research priorities outlined in the agenda paper (**Table 5** below).

The RAG noted that this advice would support TSSAC discussion at their 4 November 2020 meeting. AFMA advised the RAG that they would draft scopes to match the four RAG identified priority research needs to go to TSSAC. TSSAC will be tasked with reviewing the RAG advice and endorsing the draft scopes to be released in the December 2020 public call for research for funding for 2021-22 financial year.

Table 5. Summary of FFRAG 7 research priorities discussion.

Need	RAG comment	Essential / Desirable and Ranking
Biological sampling (Spanish mackerel and coral trout)	<ul style="list-style-type: none"> RAG support for ongoing biological sampling for Spanish mackerel as an essential research need. Need for a time series to be established to understand changes in the Spanish mackerel population, particularly recruitment deviation. Important for the program to also collect Spanish mackerel genetic samples to support future research. Sampling for coral trout remains desirable noting likely high present biomass. However, the RAG did note that it would be cost effective with economies of scale existing with the concurrent mackerel program and to build the supply of information to support a generally data poor fishery. 	<p>ESSENTIAL for Spanish mackerel</p> <p>DESIRABLE for coral trout</p> <p>Ranked as the number 1 priority for research funding.</p>
Spanish mackerel stock assessment	<p>Remains a strong research need to fund a Spanish mackerel stock assessment in the near future due to:</p> <ul style="list-style-type: none"> Declining CPUE evident since 2010 suggesting the stock abundance is in decline. Recent assessments indicate the stock is near the limit reference point. Uncertainty associated with stock status. Need to set appropriate sustainable catch limits to keep the stock building away from the limit reference point – the assessment is the only empirical method to gauge the status of the stock and set an RBC. Previous RAG advice to continue annual assessments until stock at or near 40 per cent of unfished biomass. Conservative multi-year TAC could be set in absence of yearly assessments but would mean potential lost economic opportunities. Testing has not been undertaken to support multi-year TACs. 	<p>ESSENTIAL</p> <p>Ranked as the number 2 priority for research funding.</p>
Harvest strategy development	<ul style="list-style-type: none"> Remains an essential research need in the fishery with a project required to continue development of a Strategy for the TSFF. 	<p>ESSENTIAL</p>

	<ul style="list-style-type: none"> Commonwealth best practice is to manage a fishery under a strategy to gain long term efficiencies and focus science, monitoring and management. Project could focus on mackerel first, rather than both mackerel and trout, if funding was limited. 	Ranked as the number 3 priority for research funding.
Alternative index of abundance for Spanish mackerel – scoping study	<ul style="list-style-type: none"> Novel Close Kin Mark Recapture (CKMR) genetic technique could be developed through a scoping study for Torres Strait Spanish mackerel. CKMR Index developed over time can calculate absolute stock abundance independent of the daily fishing logbook CPUE. It was noted that a scoping study for CKMR could report on whether the method would work biologically, the number of samples that would be required over time (based on the population model) and how the technique might provide other insights such as connectivity with adjacent stocks. RAG supports a project being formed to scope and develop advice on an alternative index of abundance noting the present level of the stock and amount of available data to support science and management and the issues with CPUE data presently being addressed by the RAG and stock assessment team. 	ESSENTIAL Ranked as the number 4 priority for research funding.
Environmental drivers that may be affecting the Spanish mackerel assessment	<ul style="list-style-type: none"> Seen as a key scientific issue for Torres Spanish mackerel assessment, but also across northern Australia (not just limited to Torres Strait). Strong need to know why Spanish mackerel CPUE varies up or down over time and what factors underlie trends in the data. May require ongoing analyses post the 2020-21 funded examination. Has interaction with the climate change project. RAG to monitor outcomes of this project and provide future advice on what a project may look like to address this need. 	ESSENTIAL but not recommended as a near future priority.
Coral trout stock assessment development	<ul style="list-style-type: none"> Previous RAG advice noted priority data work to be carried out to further develop the 2019 preliminary coral trout assessment and address the range of uncertainties identified. The additional data priorities are: <ol style="list-style-type: none"> 1) analysing the identified 1994-95 CSIRO survey data, 2) examining improved TIB catch and effort data, 3) incorporating underwater visual survey data if conducted. 	DESIRABLE – not recommended for funding at this time.
Spanish mackerel stock structure and ecology	The RAG noted that this item was of lower priority at this stage and was not discussed in detail.	Lower priority
Shark depredation	The RAG noted that this item was of lower priority at this stage and was not discussed in detail.	Lower priority
Otolith morphology	The RAG noted that this item was of lower priority at this stage and was not discussed in detail.	Lower priority
Ratio of B MSY to B MEY	The RAG noted that this item was of lower priority at this stage and was not discussed in detail.	Lower priority

Points discussed:***Biological sampling***

The RAG recommended that TSSAC support funding to continue the program to sample Spanish mackerel and coral trout. The RAG considered that this is a high priority monitoring need for Spanish mackerel as the stock rebuilds to a higher biomass over time towards its target reference point. The RAG confirmed the need for a time series to be able to track the strength of recruitment into the fishery, changes in the population and to inform and improve the accuracy of the stock assessment. The RAG noted that the program would provide benefits for other assessment parameters such as reproduction and will also collect valuable genetic samples to support future research. It was noted that each year of sampling confirms and consolidates the existing knowledge. The RAG noted that it would be important to maintain and continue to build on the buy-in and good will within industry to capitalise on the good results from the first round in 2020 and into future rounds.

The RAG noted that with the present indication of high coral trout biomass from the 2019 preliminary stock assessment, sampling remained desirable. However, the RAG did note that it would be cost effective to continue sampling for coral trout with sunk costs committed into the program and likely economies of scale alongside the concurrent mackerel sampling program. The RAG also noted that trout fishery is similar to the Spanish mackerel fishery with few boats catching and supplying CPUE data, meaning that it is relatively data-poor.

As such the RAG recommended to TSSAC that funding for the biological sampling program be maintained as an *essential* research need for Spanish mackerel and a desirable research need for coral trout. The RAG advised that, in terms of ranking, they would place biological sampling above the stock assessment for Spanish mackerel should funding for both not be available.

Mackerel stock assessment

The RAG noted that there is a strong research need to perform annual assessments to check the response of the stock, noting the uncertain stock status, declines since the 2010 season and the outputs of the most recent assessment suggesting that the stock is near the default limit reference point of 20 per cent of unfished biomass (B20). At their RAG 6 meeting (November 2019) the RAG recommended that stock assessments should be performed annually until the stock had recovered to a point at or near 40 per cent of unfished biomass (B40).

The RAG noted that the stock assessment was the only available empirical method to set a sustainable catch limit to build the stock and keep it away from the limit reference point (B20) and as such is an *essential* research need for the fishery.

AFMA advised that in funding the 2019 and 2020 stock assessments and noting the uncertainties in the available CPUE data, TSSAC wrote to the project team to ask for a commitment to investigate underlying reasons for the declining CPUE, including examining whether environmental variables might be affecting the catch rates or recruitment. The project team advised that due to unforeseen challenges this work has not been progressed as far as expected. The project team advised that an update will be provided at the FFRAG 8 meeting.

The RAG noted that although it is an *essential* research need, if the stock assessment could not be funded for some reason, a low and conservative TAC could feasibly be set over multiple seasons. However, this would forgo economic opportunities for the TIB sector to grow with primary vessels as more infrastructure comes online in the near future and to be able to lease out all available catch within the sustainable limit not used by TIB fishers.

Harvest strategy development

The RAG noted the previously funded project “*Developing Harvest Strategies for the Torres Strait Finfish Fishery*” had concluded in 2019. It was noted that FFRAG 5 had reviewed the status of

components developed from this work and had identified gaps to be further progressed, including finalising development of indicators of stock status, testing decision rules, operationalising the 'banking' of fish advice from stakeholders and integrating monitoring/data needs into the assessment with regards to setting TACs.

The RAG supported the formation of a second project as an *essential* research need for the fishery to complete this development. It was noted that an option for the project might be for the project to first focus on Spanish mackerel rather than coral trout. The RAG were supportive of a project being formed as an *essential* need for the fishery noting it was lower priority than biological sampling or stock assessment work for Spanish mackerel.

Alternative index of abundance for Mackerel – close kin mark recapture

The RAG noted that the novel Close Kin Mark Recapture genetic technique could be developed through a scoping study for Torres Strait Spanish mackerel and an index developed over time to provide calculations of absolute stock abundance independent of the daily fishing logbook CPUE data that drives our assessment of stock biomass.

It was noted that a scoping study could report on whether the method would work biologically and could use the existing model to scope the number of samples that would be required over time (based on initial analysis of the population model, this might be in the range of 2500 to 5000 samples collected over a series of years). The scoping study might also suggest how the technique might provide other insights such as connectivity with adjacent stocks.

The RAG recommended a scoping study project should be formed as an *essential* need to develop an alternative index of Spanish mackerel stock abundance noting:

- the present level of the stock;
- amount of available data to support science and management; and
- issues with CPUE data presently being addressed by the RAG and the stock assessment team.

Environmental drivers

The RAG noted that a key scientific need for the fishery has been to understand the factors underlying the declining CPUE trend for Spanish mackerel and that the working hypothesis of the RAG has been that environmental drivers influence population trends (based on advice from industry about changes in water salinity and turbidity at Bramble Cay potentially linked to Fly River outflow or drought in PNG). The RAG noted that this is an issue for the Torres Strait Spanish mackerel assessment, but also is reportedly impacting mackerel catch rates across the northern of Australia.

The RAG noted that the November 2020 Spanish mackerel stock assessment was scheduled to provide investigation into this issue and that the outcomes of this reporting and stock assessment would inform the future consideration by the RAG.

The RAG noted that this was an *essential* research need for the fishery but that further consideration would need to be given to what the objectives and scope of a future project might be. The RAG also considered that the outcomes of the CSIRO led *Torres Strait Climate Change* project may also provide insight. The RAG recommended that a watching brief be placed on the outputs of this project and be presented to the RAG where possible. Based on these considerations the RAG did not recommend this as a priority for funding by TSSAC at this time.

Coral trout stock assessment

The RAG noted that a preliminary coral trout stock assessment had been presented to the PZJA advisory committees (FFRAG and FFWG) in March 2019. The RAG noted that the next full assessment was suggested by the RAG to occur in a few years' time to allow extra catch and effort

data to be collected and for work to occur on three issues identified with the preliminary assessment (analyse the 1994-95 CSIRO fish survey data, analyse additional TIB catch and effort data, analyse new underwater visual survey data if conducted in the meantime).

Noting the likely stock status of coral trout, the RAG agreed that progressing the coral trout stock remained a *desirable* research need.

Agenda Item 4 – Other business

4.1 Other business

No other items of business were nominated for discussion.

4.2 Next meeting and meeting close

The RAG noted that FFRAG 8 is scheduled for 4-5 November 2020 as a face-to-face meeting in Cairns, pending any changes to COVID 19 related travel restrictions. The RAG supported having this meeting face-to-face as a preference and requested that AFMA invite project lead Jo Langstreth to attend to provide an update on the Torres Strait Biological Sampling Program.

The RAG noted that the TSSAC meeting would likely be held via teleconference late on the afternoon of the 4 November 2020. Noting that some FFRAG members also serve on TSSAC committee (Rocky Stephen, Selina Stoute, TSRA member), AFMA proposed for the FFRAG meeting to close at 3pm on that day.

In closing the meeting, the FFRAG Chair thanked all of the participants for their input with a lot of good productive discussion and contributions to a strong, evidence-based process for forming RBC advice.

Meeting closed at 17:30 hrs.

Attachments

Attachment A: Meeting agenda as adopted

Attachment B: List of actions and recommendations arising FFRAG 7

Attachment C: Overview of industry reports on boats known to be operating in the TSSMF prior to 1989 and historic events that may influence the catch-rate series.

Attachment D: Presentation on information on historic IUU impacts on Torres Strait Spanish mackerel.

Attachment D: FFRAG 7 Presentation on historic IUU impacts on Torres Strait Spanish mackerel by Rik Buckworth, Spanish mackerel stock assessment team.

Illegal Unreported and Unregulated (IUU) fishing in Torres Strait

- Taiwanese driftnetters from late 1970s into the 1990s
 - Australian Fishing Zone: 1976-86; Gulf of Papua: 1976-1993
- Evidence is not quantitative –we don't know the exact numbers!
 - Anecdotal
 - Circumstantial
 - Confidential enforcement information

McPherson (1986)

Circumstantial evidence of Taiwanese fishing impact

- 20-30% of the Bramble Cay catch with gillnet damage – not known how many were actually caught by the Taiwanese or died from net damage
- few large/ older fish
- P-NG-licensed Taiwanese fishery in the Gulf of Papua adjacent to the Protected Zone
- Suggested that the gillnet fishery “may be having a noticeable impact on the Protected Zone troll fishery and the Gulf of Papua gillnet fishery should also be addressed”

There is circumstantial evidence to suggest an outside influence on the *S. commerson* fishery within the Torres Strait Protected Zone. A substantial decline in numbers of *S. commerson* landed per man per day (Figure 2) was evident following the 1980 season. In July 1981 a Taiwanese gillnet fishing vessel was reported to Australian surveillance authorities as having fished within three miles of Bramble Cay. Since that time Australian fishing vessels have reported (to the author) Taiwanese gillnet vessels operating in the general proximity of Bramble Cay.

Decline in catch rate for one TS vessel (McPherson 1986)

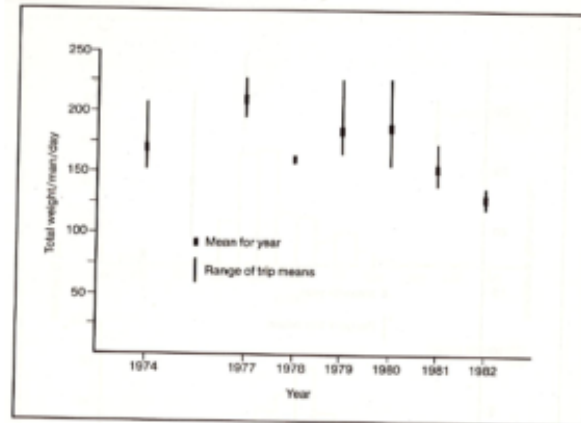


Figure 1. Total live weight of *S. commerson* per man per day on an annual basis (August-December) for one vessel.

Anecdotal evidence

- Further suggestions of IUU fishing in the Protected Zone with many apparent sightings. McPherson (Pers. Comm.) that many sightings were not pursued.

Apprehension information from AFMA

Advice to Spanish mackerel project team on IUU catch of Spanish mackerel AFMA October 2020

Source: *Brief for Australian Delegation to the Fourth Meeting of the Joint Advisory Council (JAC) on the Implementation of the Torres Strait Treaty Port Moresby 26-27 November 1992*

- 1992 incident

- 6th or 7th May 1992: an Indonesian licensed Taiwanese gill netter ran aground at Turu Cay.
- 120 t of catch of all species was reported to be in the hold of this grounded vessel.
- Crew transferred themselves to a second Taiwanese gill netter licenced to PNG.
- Total catch of mackerel by both these vessels in a period of two months was reported to be around twice the total annual mackerel catch for the TSPZ Spanish mackerel fishery.
- Coastwatch detected drift nets in PNG waters after the grounding which were attributed to this vessel/vessels. Combined total length of these drift nets estimated to be 10 miles.
- Three drift nets (around 5 miles long) were ghost-fishing for some time and were recovered and destroyed later.



Apprehension information from AFMA - cont

Other IUU incidents

- The issue of an IUU vessel sighted fishing near Bramble Cay in 1989 was reportedly raised in Australian Parliament afterwards.
- Previous instances of Taiwanese gillnetters operating close to the TSPZ have attracted strong protest from fishery stakeholders (traditional inhabitants, commercial fishers, Greenpeace).
- Issue reportedly raised through Treaty consultative forums prior to 1992 incident.

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
RAG UPDATES Industry and scientific member updates	Agenda Item No. 2.1 FOR DISCUSSION

RECOMMENDATIONS

That the RAG:

- a. **NOTE** any updates provided by industry members;
- b. **DISCUSS** strategic issues, including economic trends, affecting the management and development of Torres Strait fisheries.

BACKGROUND

1. Verbal reports will be provided by industry members under this item. The FFRAG Chairperson may also welcome a short report from any invited participants from industry at this agenda item.
2. It is important that the Finfish RAG (and also the Finfish Working Group (FFWG)) develop a common understanding of any relevant matters within adjacent jurisdictions and what issues if any, are having the greatest impact on industry and the management of fisheries. Such understanding will ensure proceedings of the FFRAG and FFWG are focused and may more effectively address each issue.
3. FFRAG members are asked to provide any updates on trends and opportunities in global markets, processing and value adding. Industry is also asked to contribute advice on economic and market trends where possible. Scientific members are asked to contribute advice on any broader strategic research projects or issues that may be of interest to the Torres Strait industry in future.
4. At the previous meetings of the FFRAG and associated FFWG, members discussed a range of strategic issues affecting the management and development of Torres Strait fisheries which are summarised below.

Finfish RAG 5

5. The RAG noted during this discussion that, in considering the future of the Fishery, the impacts of climate change will be a priority and there is a need for:
 - a. Improved understanding of RAG members in interpreting climate change trends and impacts
 - b. Data collection on impacts of climate change
 - c. Need for the Torres Strait communities and PZJA advisory groups to be kept abreast of:
 - i. key developments and research across the broader Great Barrier Reef
 - ii. how stakeholders can receive information on research and
 - iii. data trends and how these developments may impact the Torres Strait.
6. The RAG noted that there is dashboard temperature tracking available for the Torres Strait through The Australian Institute of Marine Science, which would likely be a useful tool for fishers to track changes in water temperature (e.g. being used by Tropical Rock Lobster fishery in relation to avoiding cray deaths in cages in hot water during transit).
7. RAG also noted that remote sensing information was available on the National Oceanic and Atmospheric Administration (NOAA) website regarding water temperature anomalies which

stakeholders could freely access. Suggestion was made that the FFRAG should be monitoring trends and anomalies rather than absolute water temperature values.

8. FFRAG noted a number of updates from industry members:

- Fishers on Ugar have had little participation in the Finfish Fishery for the last six months due to unfavourable weather. Recent mackerel fishing has resulted in a range of different sized fish present in the catches.
- Erub Community Freezer is back online and presently purchasing finfish species from community fishers (TIB).
- A round of community visits have been undertaken by AFMA along with PZJA industry members. Focus of this round was to provide feedback to communities about the fish receiver system and data collection.

Finfish RAG strategic issues for industry from 2019

9. At the 27-28 June 2019 industry harvest strategy meeting the following advice was provided by an invited participant, Mr Egon Stewart, an active fisher holding a sunset licence:

Mr Stewart reported that this season (the 2018-19 season), for both Coral Trout and Spanish mackerel, was better than the previous season, despite bad weather and fishing time lost due to engine issues. The Group noted the differences in fishing behaviour between boats that targeted live or fillet coral trout. Generally, live trout boats will heavily fish one area quickly to minimise transit time of the live trout. Fishers that target trout for fillet tend to fish slowly, moving between different areas. Mr Stewart reported that depredation by sharks appears to have increased, particularly at Bramble Cay when targeting Spanish mackerel. Whilst Mr Stewart was unable to estimate the amount of catch that was being taken, he noted that after one fish was taken that the fish went off the bite. The Group considered that shark depredation, and the potential effects of shark depredation on catch per unit effort (CPUE) may be important to the stock assessment. Mr Stewart noted that it would be difficult to quantify the number of fish taken and the impact of a depredation on potential catch rates. The Group considered that given the impact that depredation may have on CPUE and the reliance on CPUE for the stock assessment, that gaining an understanding of the impacts of shark depredation was of important.

10. At their 13-14 March 2019 meeting (FFRAG 4) no formal updates (industry, government or research) were tabled noting the focus of the meeting agenda was placed on progressing stock assessments for mackerel and coral trout.

11. At their 19-20 November 2018 meeting (FFRAG 3), the following industry updates were noted:

- Traditional Inhabitant Industry members are expecting an increase in finfish take as infrastructure improves and more community freezers come back into service.
- Good catches of Spanish mackerel have recently been taken from Ugar with good catch rates.
- Industry encouraged AFMA and TSRA to work on getting licences issued to fishers from the 1 July season start date for the 2019 season. AFMA advised that the transfer of some licences was delayed to ensure all obligations under the *Native Title Act 1993* were met.
- Industry responded to a query from AFMA about reports it had received of increasing shark depredation on mackerel grounds – industry advice is that shark predation has always been an issue in Torres Strait but the intensity may vary yearly. QDAF and NT fisheries both echo reports from fishers on increasing shark numbers and interactions with commercial fisheries.

12. At their 9-10 November 2017 meeting (FFRAG 1) the RAG raised the following points:

The RAG noted updates provided by members on strategic issues that may be affecting the adjacent Queensland east coast and the Torres Strait finfish stocks.

Queensland east coast finfish strategic issues

Vessel monitoring systems

- It was noted that the Queensland Vessel Monitoring System project was now in a trial stage with units fitted to both primary vessels in a number of fisheries (as per the Torres Strait) but also to dories – unlike in the Torres Strait. QDAF advised that they are waiting for trial data to come in for review in 2018.

East coast coral trout and reef-line species

- It was advised that the east coast coral trout TAC was nearly entirely now caught (96 per cent of 917 t) and that no over-catch was allowed under management regulations.
- 2017 catch rates appear to have been good despite a 2016 cyclone.
- A theory was reported whereby a cyclone may trigger a drop in water temperature which impacts the coral trout metabolic rates which in turn affects their availability as they will not take baits as readily. It was noted that fish are seen to be present after a cyclone but their availability seems to be affected.
- QDAF advised that east coast coral trout assessment is planned to be updated every five years and was due to be updated in 2018 (stock status and reference points are to be examined).
- It was noted that east coast stock assessment team was reviewing the options for monitoring for coral trout to support the assessment and TAC setting. The project team are comparing the costs and benefits of fishery independent line fishing surveys (to support the age structured assessment model) and are comparing this to port sampling or crew based fishery dependent data. It was noted that Australian Institute of Marine Science survey data (underwater diver abundance surveys) had been powerful and useful data for the east coast coral trout assessment.

East coast red throat emperor

- It was advised that catches of red throat emperor and other reef line species remain low with most fishers focusing on live coral trout with some red throat emperor taken as by-product.
- 2018 will see an updated east coast Red Throat Emperor assessment which will be the first update to the assessment in about a decade.

East coast Spanish mackerel

- It was reported that around 50 per cent of the east coast Spanish mackerel TAC was taken during the last season with this seasons catches appearing to be good (up 31 per cent for the season to date; around 20 per cent of the TAC had normally been filled by this time in previous seasons).
- Finfish RAG will be updated on the outcomes of the east coast Spanish mackerel assessment which is being updated in 2018. It was advised that the new east coast VMS data will likely have a huge benefit in boosting the usefulness of the assessments spatial data (particularly the time spent searching for fish) can be used by assessment scientists for analysis.
- It was noted that the east coast Finfish Harvest Strategy includes decision-rules based on a CPUE model for the commercial sector only and does not apply to recreational sector. Under the Sustainable Fisheries Strategy Queensland will move to have explicit account for catches taken from all sectors under the harvest strategy.

Torres Strait strategic issues for industry

- Kos and Abob Fisheries on Ugar Island are preparing a business plan to guide development of their business over the next few years, especially for when the Ugar freezer is upgraded. The intent of this plan is to ensure that the freezer can run as a viable, commercial business.

- An industry member advised that there is a strong need for TACs to be set at levels that provide enough product to support business.
- Erub Island has seen a spike in finfish catches over the past few weeks before the meeting due to improved weather.
- With good prices and demand for product there is reportedly some interest among the Traditional Inhabitant Boat (TIB) sector in entering the finfish fishery but this would be dependent on infrastructure to support this.
- Both Erub and Mer communities would likely have some recorded data of recent finfish commercial catches.
- More fishers on Mer Island were taking coral trout with good prices being offered from buyers.
- Mer Island women were also engaging in finfish fishing with their partners to boost their household incomes.
- Malu Lamar advised that fishers in the TIB sector need to have a firm understanding of what the TAC is for their sector. The representative advised that the next few seasons would likely result in an increased take from the TIB sector as fishers move across from the beche-de-mer fishery to target finfish. Suggested that young TIB fishers such as Mr Allan Passi from the Mer Community be invited to the Finfish RAG to help increase understanding of fisheries science among the sector and facilitate community understanding.
- TIB sector fishers have an increased understanding of the value of logbooks and good data for management of their fishery.

13. Meeting observer, TSRA board member Mr Yen Loban, noted that it was of high importance that the TIB sector supplies catch data to AFMA to support decision making and to ensure that the balance is understood between non-traditional inhabitant and TIB sector catches

Finfish Working Group strategic issues

14. At their 15 March 2019 meeting the FWG noted the following general updates from industry members and observers:

Traditional inhabitant advice that infrastructure to support fishing business remains the key strategic challenge for Traditional Inhabitant Boat sector of the fishery given remote communities. FWG noted that TSRA infrastructure improvements will likely see community freezers reopening within 12 months which may not have much impact on the fishery over the next 2019-20 season (starting 1 July 2019). This likelihood of renewed infrastructure is reported to be increasing interest in finfish within the central cluster who historically had harvested a lot of finfish. Ugar community reports strong catches of Spanish mackerel with 3-4 tonnes of mackerel reported caught over two-three month period working to privately owned chest freezers.

There is some general interest from Torres Strait based seafood businesses and within western communities in investing in finfish with several business buying or seeking to buy commercial fishing boats with reports that 2 to 4 boats are in the process of entering the fleet on Badu Island. This interest has reportedly been in response to the 2017-18 season low Total Allowable Catch (TAC) for Tropical Rock Lobster, as well as small TACs for beche-de-mer, and potential removal of the reef-line western area closure. Some operators may be looking to fish finfish as a contingency,. It was considered that these western communities would likely be seeking to establish markets for finfish in the near future.

The industry observer from the sunset sector advised:

- The fishing operation was mainly targeting mackerel to supply the local domestic market with the Sydney Fish Market buying some whole mackerel for export to the Asian market.

- Torres Strait fishery appears to be in good health generally. The operation has been taking their allocated catch in recent seasons with less skilled dory drivers available but have been taking more time to take the same harvest.
- Beach price for mackerel fillets remains steady at around \$16.50 / \$17.50 kg but may peak to support market demand around Chinese new year (\$26/kg for whole, un-bled fish under 10 kg).
- Species substitution was reported as an issue in some markets where other mackerel species such as grey mackerel was being onsold as Spanish mackerel when availability is low. Industry are supportive of a national standard for seafood labelling to address this concern.
- There is concern from some buyers in taking large sized mackerel from Torres Strait due to more northerly, warmer waters which may have increased associated risks of ciguatera poisoning. The group noted ciguatera had not previously been a problem for Torres Strait sourced mackerel.
- The key strategic issue for the industry was the increasing costs on a number of parts of fishing operations including:
 - Concern over rising fuel and bait prices.
 - Cold storage fees (\$20 per time to access stored catches)
 - Packaging (cartons and liners) prices increasing \$4000 over five years (\$6000 per season, now \$10,000).
 - Rising freight prices both southwards – product leaving Torres Strait via barge – but also now for northbound freight to resupply the fishing operation which until recently was free to fishing businesses shipping substantial amounts of catch southwards.
- Crews were still generally reporting round figures for effort (hours fished per session) in logbooks. AFMA urged fishers to help improved the standardisation of the catch rates by supplying the most accurate data in daily fishing logbooks.

The FWG advised that it would be interested in examining more economic detail on similar fishing operations as a full package including costs, beach prices for catch and lease prices for access (noting the *2016 Finfish Action Plan* is a resource providing info on economic drivers in the fishery) with a view to increasing FWG understanding of the economic viability of the fishery.

15. At their 20 March 2018 meeting the FWG welcomed updates from industry and other stakeholders on activities and strategic issues occurring in the Torres Strait Finfish Fishery and also on issues from other relevant fisheries:

- It was considered that the outcomes of the TSRA infrastructure initiative would likely increase participation within the Ugar Community in the Torres Strait Finfish Fishery.
- Ugar community has been engaging with TSRA initiatives such as direct export of seafood product from Torres Strait.
- Available Sydney Fish Market price data shows strong market prices for Spanish mackerel with a clear spike in prices corresponding with Chinese New Year.
- Erub Community Freezer is intending to make its recent finfish catch data available to AFMA and the PZJA groups for consideration.
- The TSRA Finfish Quota Management Committee has seen increased interest from the sunset sector in leasing access to the Torres Strait to catch coral trout.
- The FWG noted that recent seasons on the Queensland East Coast fishery have seen the Total Allowable Catch almost totally filled with lease prices reaching \$6/kg corresponding with peak demand to fill orders for Chinese New Year at the end of the season. It was noted that, based on harvest control rules in place, a likely

200 t increase to the East Coast trout quota in 2018 there may be a decrease in interest from fishers wanting to access the Torres Strait Finfish Fishery reef-line sector. The QDAF member offered to circulate the recent Queensland Finfish Working Group communique for the interest of the FWG. <https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable-fisheries-strategy/fishery-working-groups/-coral-reef-fin-fish-fishery-working-group/communiques/communique-6-7-march>

- QDAF member advised that consultation is underway on proposed amendments to the *Queensland Fisheries Act* to implement changes including stronger compliance powers and penalties. <https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable-fisheries-strategy/changes-to-queenslands-fisheries-legislation>
- QDAF advised that workshops are being held in Queensland on social and economic indicators for East coast fisheries. These workshops are focused on what data can inform social or economic analyses and how can these data be collected and reported. The FWG noted that the findings from these workshops can help inform the development of Torres Strait harvest strategies.

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2019
RAG UPDATES FFRAG member updates	Agenda Item No. 2.1 FOR NOTING

RECOMMENDATIONS

1. That the RAG **NOTE**:
 - a. any updates provided by FFRAG members; and
 - b. AFMA will provide an presentation of data from the Torres Strait Fish Receiver System at the meeting.

BACKGROUND

1. FFRAG members will be invited to provide any verbal reports or updates on issues under this agenda item (industry members, science members, PZJA agencies members). The FFRAG Chairperson may also welcome a short report from any invited participants and observers from industry at this agenda item.
2. It is important that the Finfish RAG (and also the Finfish Working Group (FFWG)) develop a common understanding of any relevant matters within adjacent jurisdictions and what issues if any, are having the greatest impact on industry and the management of fisheries. Such understanding will ensure proceedings of the FFRAG and FFWG are focused and may more effectively address each issue.
3. FFRAG members are asked to provide any updates on trends and opportunities in global markets, processing and value adding. Industry members are also asked to contribute advice on economic and market trends where possible. Scientific members are asked to contribute advice on any broader strategic research projects or issues that may be of interest to the Torres Strait industry in future.
4. Malu Lamar (Torres Strait Islanders Corporation RNTBC) (Malu Lamar) has a standing invite to attend all PZJA advisory committee meetings. Malu Lamar was invited to attend the current meeting however did not nominate an attendee.

AFMA update

5. As previously advised, AFMA has submitted a report to the Department of Agriculture, Water and the Environment to support a further export approval for the fishery under the EPBC Act. This report is now available for public comments. Public comment period closes on 18 November 2020. <https://www.environment.gov.au/marine/fisheries/commonwealth/torres-strait-finish/application-2020>
6. The ABARES Fishery Status Reports 2020 have now being released by ABARES: <https://www.agriculture.gov.au/abares/research-topics/fisheries/fishery-status>. The assessment remains unchanged for Spanish mackerel and coral trout. Both are assessed as being not subject to overfishing or overfished.
7. AFMA will be travelling to all Eastern communities and most Central communities over the coming months to discuss a range of matters. Of relevance to the Finfish Fishery, Jo Langstreth, QDAF will be joining AFMA for meetings at Ugar, Erub and Mer to discuss the biological sampling project (see Agenda item 5.2 for more information on the project).

8. AFMA was invited by TSRA and Community Owned Enterprises to meet with the trainees of the Whaphill Project on Erub. AFMA is taking the opportunity to meet with the Trainees during AFMA's visit to Erub on 27-28 October 2020. In addition to providing general fisheries information, AFMA will promote the use of daily fishing logbooks which is an outcome also sought by TSRA as part of the training program. AFMA will provide a verbal update on the meetings to FFRAG 8.

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
STOCK ASSESSMENTS Updated Spanish mackerel stock assessment 2020	Agenda Item No. 3.1 FOR DISCUSSION and ADVICE

RECOMMENDATIONS

That the Finfish Resource Assessment Group:

1. **NOTE** the updated stock assessment for Torres Strait Spanish mackerel based on data up to 30 June 2020 to be presented by FFRAG Science Members Dr Michael O'Neill and Dr Rik Buckworth under the funded project "*Torres Strait Spanish mackerel stock assessment with appraisal of environmental drivers*";
2. **NOTE** the advice provided by FFRAG to support and inform the 2020 stock assessment recorded at the FFRAG 7 data meeting on 8 October 2020.
3. **DISCUSS** and **PROVIDE ADVICE** to the Spanish mackerel stock assessment team on the methodology and outcomes of this assessment;
4. **DISCUSS** and **PROVIDE ADVICE** on whether the outcomes from the 2020 stock assessment are likely reflective of the stock status and whether the outcomes can support a recommendation for a RBC for the 2021-22 season starting 1 July 2021.

KEY ISSUES

5. The AFMA funded project "*Torres Strait Spanish mackerel stock assessment with appraisal of environmental drivers*" has been funded to complete two updates to Spanish mackerel stock assessments to support decision making in the 2020-21 and 2021-22 season.
6. The objectives and performance indicators of the project as follows:
 - a. Characterise the Torres Strait Spanish Mackerel fishery, reviewing and updating the assessment with 2018-19 and 2019-20 seasons' data, presented at 2019 and 2020 Finfish Fishery Resource Assessment Group (FFRAG) meetings.
 - b. Review environmental associations with Torres Strait Spanish mackerel, e.g. by comparing environmental data such as temperature, rainfall, productivity etc, with catch patterns, recruitment anomalies, and trends in catchability, presented at the 2019 RAG meetings.
 - c. Conduct an assessment of the fishery including new 2018-19 season catch and effort information acquired to 30 June 2019, presented at the 2019 RAG meetings.
 - d. Conduct an assessment of the fishery including new 2019-20 season catch and effort information acquired to 30 June 2020, presented at the 2020 RAG meetings for technical review, ahead of a final presentation and report to the Finfish Working Group.
 - e. Provide recommendations on research and monitoring needs to support future assessments.
7. Additional Spanish mackerel catch and effort data from Daily Fishing Logbooks (TSF01 completed by sunset fishers) and Catch Disposal Records (TDB02 completed by Traditional Inhabitant Boat Fishers and sunset fishers) from data up to 30 June 2020 were provided by AFMA to the Spanish mackerel assessment team and QDAF under a deed of confidentiality to inform and update the stock assessment model.

FFRAG 7 Data Meeting advice

8. At its 8 October 2020 data meeting (FFRAG 7) the RAG provided valuable advice to the Spanish mackerel stock assessment project team by reviewing the data inputs to the 2020 stock assessment (see draft FFRAG 7 meeting record at Agenda Item 1.4).
9. FFRAG 7 meeting advice was able to help refine the inputs and number of analyses/model runs being run down from 45 analyses considered in the 2019 assessment to 9 analyses to be considered in the 2020 assessment as listed below:

Table 1. Analyses/ model runs agreed by the RAG for the 2020 assessment. Values highlighted in yellow reflect out of session changes to the natural mortality rate values based on findings by the project team (further information below).

Label	Fish weights	Catch rate series	Natural mortality rate (M)	Harvest pre-1989	Ageing data	Starting year for catch data
1	Weighted average	No tenders and fishing power included	0.3	Historic catches actual + polynomial model + IUU tapered	All years	1940
2	Weighted average	No tenders and fishing power included	0.35 (was 0.375)	Historic catches actual + polynomial model + IUU tapered	All years	1940
3	Weighted average	No tenders and fishing power included	0.4 (was 0.45)	Historic catches actual + polynomial model + IUU tapered	All years	1940
4	Weighted average	No tenders and fishing power included	0.3	Historic catches actual + logistic model + IUU tapered	All years	1940
5	Weighted average	No tenders and fishing power included	0.35 (was 0.375)	Historic catches actual + logistic model + IUU tapered	All years	1940
6	Weighted average	No tenders and fishing power included	0.4 (was 0.45)	Historic catches actual + logistic model + IUU tapered	All years	1940
7	Weighted average	No tenders and fishing power included	0.3	n/a	All years	1989
8	Weighted average	No tenders and fishing power included	0.35 (was 0.375)	n/a	All years	1989
9	Weighted average	No tenders and fishing power included	0.4 (was 0.45)	n/a	All years	1989

RAG advice to the FFWG and PZJA

10. RAG advice is sought on whether the outcomes from the updated assessment are likely reflective of the stock status and whether the outcomes can support a recommendation for a RBC for the 2021-22 season starting 1 July 2021.
11. Advice from the FFRAG will be tabled with the Finfish Fishery Working Group (FFWG) for consideration on 29 November 2019. FFRAG and FFWG advice will support PZJA

consideration and decision on a TAC for the 2020-21 fishing season. AFMA is seeking to confirm a PZJA meeting to consider this decision in January 2020.

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
STOCK ASSESSMENTS Spanish mackerel Recommended Biological Catch for 2021-22 season	Agenda Item 3.2 FOR DISCUSSION and ADVICE

RECOMMENDATIONS

That the Finfish Resource Assessment Group:

1. **DISCUSS** and **PROVIDE ADVICE**, having regard for the stock assessment outcomes (Agenda Item 3.1), on a Recommended Biological Catch (RBC) for Spanish mackerel for the 2021-22 season;
2. **DISCUSS** and **PROVIDE ADVICE** on an agreed method for agreeing an RBC noting the issue the following key considerations and any others members may raise:
 - a) application of a constant harvest rate to build the stock to an agreed biomass level RBC;
 - b) recruitment estimates to be used in biomass projections used to assess risk to the stock from different future catches;
 - c) assessing risk to the stock using model scenarios of different future catch levels.
 - d) that a one year lag exists between the closing of a fishing season, data being generated, a stock assessment being performed and the time when an RBC can be put into place.
3. **REVIEW** previous RAG advice on best available estimates of Spanish mackerel catches taken outside of the Fishery and taking into account any other available information, **DISCUSS** and **PROVIDE ADVICE** on best available estimates to apply for the 2021-22 season.

KEY ISSUES

4. The AFMA funded project "*Torres Strait Spanish mackerel stock assessment with appraisal of environmental drivers*" has been funded to complete two Spanish mackerel stock assessments to support decision making in the 2020-21 and 2021-22 seasons
5. The second updated stock assessment will be presented by the project team at Agenda Item 3.1. The outputs of this stock assessment will enable RAG members to consider forming advice to the FFWG and PZJA on a suitable Recommended Biological Catch (RBC) for the 2021-22 season beginning 1 July 2021.
6. Over recent seasons, as the stock assessment has been updated and through progress made towards developing a harvest strategy for Spanish mackerel, the FRAG has refined its methodology for calculating the RBC. In forming its advice on the RBC for 2020-21 fishing season, the RAG is asked further consider the methodology for calculating the RBC on an ongoing basis relative to key issues outlined below.

Constant harvest rate

7. For the 2020-21 present season 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 the estimated level of exploitable biomass in 2019.
8. Previous FFRAG advice for the 2019-20 season prior 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.

Recruitment estimates

9. In providing advice to support the 2020-21 season RBC, FFRAG 6 (November 2019) 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** below) to explain lower biomass estimates despite no overfishing occurring.
10. 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**).

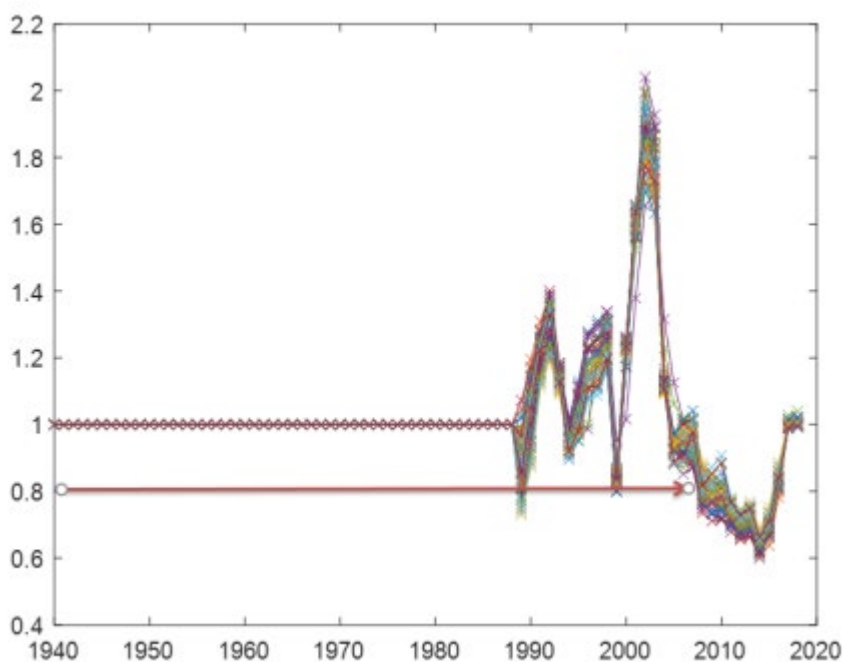


Figure 1. Model estimated deviations in stock recruitment from the long-term average (1) over time. Red arrow indicates a 20 per cent level of depressed recruitment which was adopted as a value by the RAG for consideration of risks to the stock from continued depressed recruitment occurring.

11. In 2019 the FFRAG noted that the stock assessment model has estimated that below average recruitment is likely to have been occurring in recent seasons. 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 overestimating 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.

12. In making an RBC recommendation for the present 2020-21 season, FFRAG 6 (November 2019) considered reduced estimates of recruitment (20 per cent lower than the model predicted average recruitment values).

Considering RBC options and risk to the stock

13. In arriving at a method to assess risk to the stock, FFRAG 6 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.

Table 2. FFRAG 6 advice on average and reduced recruitment statistics from 35 analyses with 12 year projections to support the 2020-21 RBC advice (present season).

	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

Forecasting RBCs

14. At the 8 October 2020 FFRAG 7 Data Meeting the Finfish RAG noted that there is a one year lag apparent in the TSFF from when data is collected (data is closed off on 30 June each year once fishing ceases), provided to the stock assessment team/s for analysis, considered by the RAG (late in the calendar year) and then used to set a sustainable catch limit by the PZJA in January ahead of the upcoming season which starts annually on 1 July.
15. As an action, FFRAG 7 requested some guidance be sought from other AFMA managed fisheries such as the Southern and Eastern Scalefish and Shark Fishery (SESSF) about procedures adopted in the intervening year between when data is available and when an RBC can be put into place.
16. After conferring with the AFMA manager of the South East Trawl Fishery and the SESSF RAG chair, AFMA is able to confirm that the general method in the SESSF for forecasting is to assume the full total allowable catch will be taken in the intervening year and that average recruitment is assumed (5-10 year average from the model, noting SESSF species are generally longer lived than Spanish mackerel and take longer to become

sexually mature). The SESSF RAG does depart from this methodology though when information might exist to do so, for example a suspected change in recruitment might be occurring.

Estimating non-commercial catches

17. Consistent with Australian Government policy (detailed in the *Commonwealth Fisheries Harvest Strategy Policy and Guidelines 2007*), all sources of mortality (catch) must be taken into account when setting a TAC. This means the TAC generally equates to the Recommended Biological Catch (RBC) (previously referred to as 'total kill' by the FFWG) for the species minus expected catches to be taken outside of the fishery.
18. Estimates of other sources of mortality were used to revise the Spanish mackerel notional TAC for 2017-18, 2018-19, 2019-20 and 2020-21 seasons.
19. FFRAG 6 reviewed the 2019-20 advice on best estimates for catches taken outside of the commercial fishery and supported the use of the values shown in **Table 1** below.

Table 1. FFRAG 4 Summary advice 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 FRAG 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 TS.
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 2018-19 fishing season.

20. At the Finfish RAG 1 meeting on 9-10 November 2017 the following advice was provided on catches taken outside of the commercial fishery:

- Recreational sector catches are likely to be minimal based on available evidence from the QDAF surveys.

- Charter sector catches are likely to be minimal based on available evidence provided from QDAF catch data. The RAG noted that there is no evidence to suggest the number of charter boat operations/licences is increasing.
- RAG recommended the estimate of subsistence take of Spanish mackerel used for TAC setting be **increased from 5.155 tonnes to 10 tonnes** based on the following points:
 - Data underlying the estimate was ageing and was available from only three islands
 - The number of TIB (commercial) sector fishing endorsements has increased since the Busilacchi study.
 - Effort creep may have been occurring from the 1990s CSIRO studies to the Busilacchi study and may still be occurring.
 - Torres Strait population has likely decreased since the Busilacchi study.
- RAG considered that there was no requirement to provide a recommended subsistence take deduction from the coral trout TAC given the amount of available information and that an assessment would likely be conducted on the species in 2018.
- RAG did not recommend any work on improving the estimates of mortality at this time though some options were considered.

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2019
STOCK ASSESSMENTS Coral trout stock Recommended Biological Catch for 2021-22 season	Agenda Item No. 3.3 FOR ADVICE

RECOMMENDATIONS

That the Finfish Fishery Resource Assessment Group:

1. **DISCUSS** and **PROVIDE ADVICE** on a Recommended Biological Catch (RBC) for coral trout for the 2021-22 season noting that the current notional TAC of 135 t has been in place since 2008 and is based on average catches between 2001 and 2005;
2. **NOTE** that FFRAG 6 (27-28 November 2019) recommended maintaining the same TAC for coral trout. However, instead of setting the TAC at the current 134.9 tonnes, for simplicity, the RAG recommended the TAC be set at 135 tonnes.

KEY ISSUES

3. At its meeting on 27-28 November 2019 (meeting 6) the FFRAG recommended maintaining the maintaining TAC for coral trout for the 2019-20 season without change noting:
 - 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.
 - the FFRAG did not consider it a priority at this time, noting the low reported catches, 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.
4. The Finfish Fishery Working Group (FFWG) considered and accepted the FFRAG advice at its meeting on 29 November. At its meeting on 20 January 2020, having considered advice from both FFRAG and FFWG, the Protected Zone Joint Authority agreed for the coral trout TAC to be 135 tonnes for the 2020/21 fishing season.
5. Catch levels in the 2020-21 season remained low with levels of total catch and sunset sector fishing effort relative to previous seasons with 34.3 t of coral trout harvested by both sectors combined (sunset 30.1 t, TIB sector 2.2 t). This represents an increase over the 17.3 t harvested in the previous 2019-20 season. These low 2019-20 season catches can be attributed to the major catching boat dropping out of the fishery part way through that season.

6. Aside from the recent catch data described above, AFMA has no further new information to present to the RAG to support consideration.
7. At its 31 October-1 November 2019 meeting (FFRAG 5) the RAG recommended that a stock assessment should be conducted during the 2021-22 fishing season, once further data is available. The FFRAG considered that postponing the stock assessment for three years would allow enough time for additional data to be included, The additional data priorities identified are listed below together with a report on status:
 - a) the 1994-95 CSIRO fish survey data which may form a valuable baseline datum;
 - These data have been located along with the accompanying summary report (*Influence of Coastal Processes on Large Scale Pattern in Reef Fish Communities of Torres Strait, Australia*, Milton & Long, CSIRO 1997 **Attachment A**). The data are securely housed in the AFMA database ready for the next stock assessment.
 - b) Improved catch and effort data from TIB fishers; and
 - Two full seasons of TIB fishing catch data are now available for study (2018-19 and 2019-20). A subset of these data have associated voluntary effort data available submitted through the voluntary section of the catch disposal record form.
 - c) Fishery independent data such as an underwater survey or biological sampling;
 - Biological sampling for coral trout has been commenced in the 2020-21 fishing season for the first time. A fishery dependent survey (e.g. underwater visual survey) has not been funded or recommended funded as a priority research need for the fishery.
8. At its most recent meeting (8 October 2020, meeting 7), the FFRAG did not recommend undertaking a stock assessment for coral trout as a research priority for potential funding in 2020-21 nor did the FFRAG support a Fishery Independent Survey at this time.
9. Due to the heavily underutilised nature of the trout fishery at present (catches far below the available Total Allowable Catch) AFMA has not progressed the action arising from FFRAG 6 to develop a work plan with the FFRAG to advise on best estimates of coral trout catches outside the commercial Torres Strait Finfish Fishery (traditional take (including subsistence), recreational, charter sector). This work is scheduled to be added to the agenda for the FFRAG to progress through 2021 meetings.

BACKGROUND

Stock assessment model

10. Under the previously funded project "*Harvest Strategies for the Torres Strait Finfish Fishery*" a preliminary formal stock assessment for the Torres Strait coral trout stock was performed by QDAF and UQ stock assessment scientists and presented to FFRAG 4 (13-14 March 2019).
11. The RAG accepted the assessment as preliminary noting the stage of development of the assessment and the range of uncertainties within the assessment. Further peer review and development was recommended. The RAG strongly recommended that ongoing work be undertaken to ensure the assessment can be developed and made available for future

management decisions.

12. The RAG accepted the methodology of the assessment of using biomass estimates from known Great Barrier Reef (GBR) habitats and inferring and scaling these values to Torres Strait habitats based on satellite mapping data to model the population and create an estimate of abundance.
13. The RAG noted that GBR values were an input to the model together with a catch per unit effort data series from the sunset licence sector daily fishing logbooks.
14. The RAG noted that although the values used as inputs to the assessment were estimates from an adjacent fishery and had some uncertainty associated with them. The outputs of the model were still useful in scaling the present level of effort, risk and catches in the Torres Strait Fishery.
15. Through the preliminary assessment, the RAG noted that the outputs suggest that the Torres Strait coral trout stock is presently healthy with around 80 per cent of virgin biomass available and that this outcome was validated by advice from industry members that the stock appears healthy. The RAG noted that all of the model estimates of current spawning biomass were above 65 per cent estimated virgin biomass.

Previous considerations of stock status and catch limits

16. Prior to the delivery of the 2019 preliminary stock assessment, the status of the coral trout stock has been evaluated against the results of Management Strategy Evaluation (MSE) work (Williams *et al.* 2007, 2011). In this MSE work four constant catch scenarios of 80, 110, 140 and 170 tonnes were tested which all achieved a biomass for the fishery of at least 60 per cent of virgin total biomass by 2025.
17. The biomass in 2004 was estimated to be more than 60 per cent of unfished levels (Williams *et al.* 2011, 2007).
18. Commercial catch in recent years has been below historical catch levels and well below the lowest catch level simulated in the MSE (80 t per year).
19. The results of the 80 t catch simulation indicated that the stock would increase to more than 80 per cent of the unfished biomass within 20 years at that catch level.
20. Until the 2019 preliminary stock assessment, this MSE work was used to support decision making on stock status and has supported the 135 t notional TAC for coral trout which has been maintained. The MSE work suggested that catches up to 170 t would support a healthy biomass with building occurring.
21. At its first meeting on 9-10 November 2017 the RAG:
 - a) advised that based on the available evidence from QDAF recreational survey data and charter sector logbook data, both recreational and charter catches are likely to be minimal; and
 - b) considered that there was no requirement at present to deduct coral trout subsistence catches given the amount of available information and that an assessment would likely be conducted on the species in 2018.



**INFLUENCE OF COASTAL PROCESSES ON
LARGE SCALE PATTERNS IN REEF FISH COMMUNITIES
OF TORRES STRAIT, AUSTRALIA**



David A. Milton

Brian G. Long

June 1997

REPORT MR-GIS 97/6

EXECUTIVE SUMMARY

The fish fauna of the edge of coral reefs in Torres Strait was investigated by underwater visual transects at 276 sites on 41 reefs between August 1995 and January 1996. The fish community contained most common families of tropical Indo-Pacific coral reefs. Acanthurids, Chaetodontids, Pomacentrids and Labrids were the most widespread and speciose families observed. The relative abundance of each species at each site was used to classify sites with multi-dimensional scaling (MDS). The species composition varied strongly across the region with sites classifying into four distinct groups. These represented groups of fish species most abundant on (1) the eastern outer ribbon reefs; (2) the mid-shelf reefs; (3) central Warrior reef complex and (4) the western reefs north of Moa Island. These patterns in fish community structure were related to changes in the relative proportions of the major benthic habitats in each area. Many species tended to be abundant either in areas of high coral cover (eastern outer ribbon reefs) or high algal cover (central and western reefs). Other factors that were correlated with fish species composition included the distance from sources of terrestrial runoff in Papua New Guinea and Cape York, northern Australia. This effect is likely to be indirect, through the influence of runoff of benthic habitats. These results show that fish communities in Torres Strait are strongly structured and influenced by the benthic habitats. The distribution of benthic habitats are in turn heavily influenced by the regional physical processes that occur because of the location of Torres Strait between Australia and Papua New Guinea.

INTRODUCTION

Habitat is one of the most important factors controlling the distribution and abundance of organisms (Bell et al., 1990). In coral reef fishes, the relationship between the fish species composition and the physical characteristics of the reef have been examined at a range of scales (Symes, 1995). The nature of the relationship between habitat structure and species distribution depends on the scale at which they are examined (Addicott et al., 1987; Wiens, 1989). Large scale patterns in fish species distribution at scales of 100s of kilometres have been found to be related to processes operating at a similar scale. Factors such as current patterns may limit the availability of fish larvae to an area (Choat et al., 1988) or the geology may control the fish species composition by its influence on the habitat structure (Ebeling et al., 1980).

In regional conservation planning it is important to take into account the factors that most affect the distribution and abundance of fauna. In planning for conservation of tropical coral reefs, it is important to understand the relationship between fish species distribution and their habitat. This knowledge will help predict the relative importance of areas for conserving key populations and habitats. It is often difficult and expensive to collect these types of data over large areas so indirect methods such as using remote sensing that can measure habitat feature may be useful if the fish-habitat associations are reasonably understood.

In northern Australia, the indigenous people of Torres Strait islands are moving towards trying to develop a regional planning framework that incorporates the conservation of their traditional marine resources such as reef fish (Poiner and Harris, 1993), turtles and dugong. Before such regional planning can be effective it is necessary to understand the importance of regional scale differences in habitat for the fish communities of the area and possible factors that may be controlling the distribution of these habitat types and their fish faunas.

Long et al. (1997) have recently shown that the distribution of seagrasses and live coral in the Torres Strait are strongly correlated with the distance to sources of terrestrial runoff and sediments. The aims of this study were to (1) characterise the reef fish community of Torres Strait; (2) assess if the fish species community structure is related to regional-scale differences in the distribution of major habitat types and (3) determine if there is a correlation between the fish community structure and the distance to sources of terrestrial runoff that influence the distribution of some habitats.

MATERIALS AND METHODS

Description of the study area

The Torres Strait is an area of shallow sea (maximum depth 20–60 m) that is bounded by the Papua New Guinea and Australian mainlands to the north and south (Fig. 1). It covers an area of 63,000 km² and is 350 km wide. In this shallow sea there are 482 reefs that range in size from less than one hectare to 16,500 ha. These reefs cover a total area of 193.6 km².

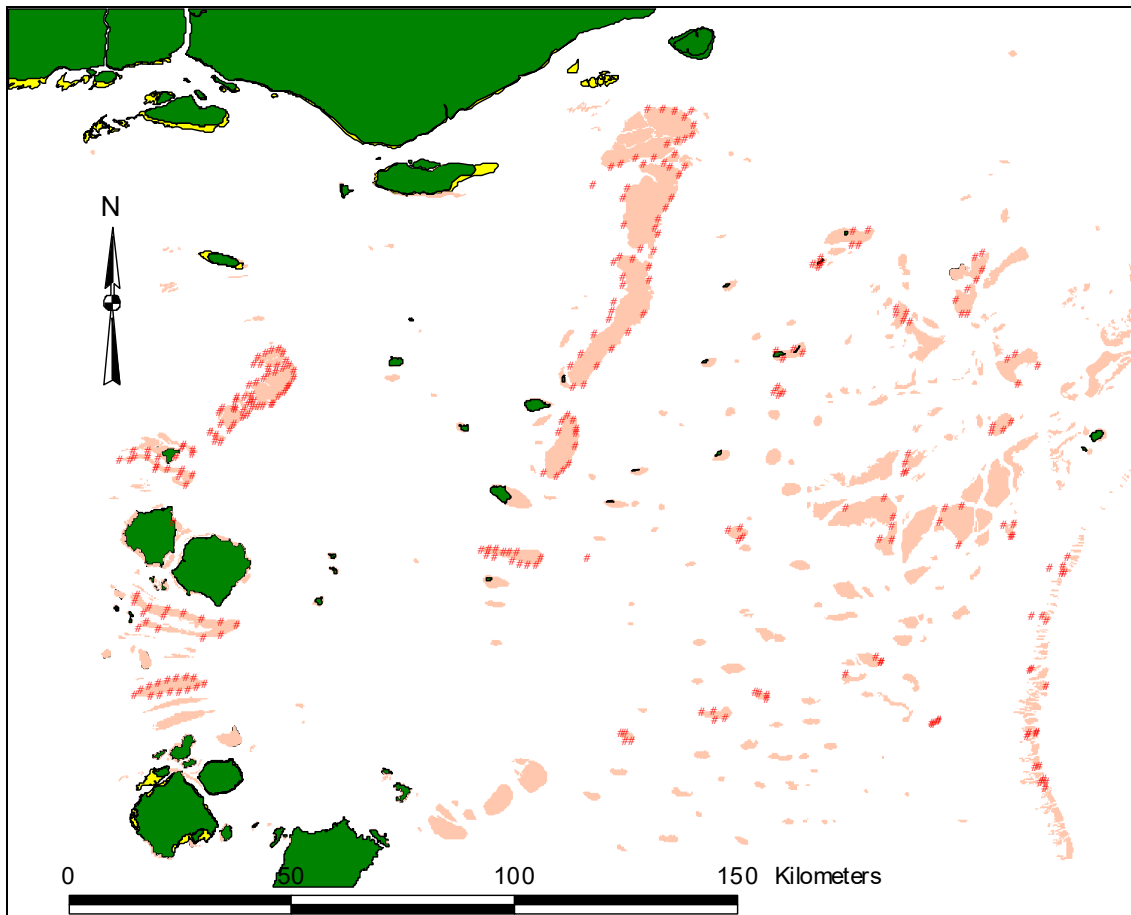


Figure 1. Torres Strait reefs showing sites sampled (red) for fish along the reef edge.

The largest reef is the Warrior reef complex which extends 70 km north-south and averages 7 km wide and extends more than a third of the way across the Torres Strait. To the east, the ribbon reef of the Great Barrier Reef marks the edge of continental shelf. Whereas the western extent is marked by a broad ridge of reefs and islands that form a northern extension of the Australian mainland.

The structure and shape of the reefs in Torres Strait have been influenced by a number of physical processes. Its location between the Arafura Sea and the Pacific Ocean means that water is funnelled between the two larger water bodies through the Torres Strait. Tides range up to 3 m and tidal currents can reach up to 5 kts in the central and western parts of the Torres Strait. To the north east of Torres Strait, the Fly River exports an estimated 100 million t of suspended sediment (Wolanski and Eagle 1991). Most of this sediment is deposited in the Fly River delta but about 2% is carried south west into the northern Torres Strait (Harris et al 1993). Reefs in these areas have muddy carbonate sediments with >20% mud (Harris 1995). Sediments to the south and west of this area are higher energy carbonate sands with > 80% carbonates and < 20% mud.

Sample design

The sampling design was constrained by different factors in the eastern Torres Strait from those faced in the rest of the study area and so a different sampling design was used. The route that the ship took through the eastern Torres Strait was chosen to cover all the main areas of reef (Fig. 1). Distances between reefs were such that only two reefs could be sampled each day. The route was divided into lengths that corresponded with a days steam. Two reef clusters were identified for sampling each day. In the central and western Torres

Strait individual reefs were larger and either sampled in segments (Warrior and Ormond reefs) or completed in one day.

A pattern of 5,000 potential sampling sites that followed the low tide perimeter of all reefs over 2 ha was created with a Geographic Information System (GIS). Each site was approximately 300 m apart. We found that sampling a maximum of 20 sites was achievable each day. Twenty regularly spaced sites were chosen each day prior to sampling so as to cover the entire perimeter of the reef. Sites were a maximum of 3.0 km apart (average 1.8 km) on any of the 41 reefs surveyed.

Field sampling

Fish

Sites were located with a GPS and the boat moored inside the reef crest adjacent to the site. A single scuba diver undertook ten-minute timed-swims perpendicular to the reef crest about mid-depth between the crest and inter-reef bottom. This was usually between 3 and 7 m deep. Swims were made at a constant speed into the current and covered approximately 1000 m² (100 x 10 m) depending on visibility. Counts were made of all individuals seen of a fixed suite of 197 species that had been chosen during regular surveys on the northern Great Barrier Reef for over 15 years (Williams, 1982) (Table 1). Each observation of each species was recorded. The perceived short-comings using this method are discussed in Cappo and Brown (1996). They noted that other methods such as line transect (Thresher and Gunn 1986) or stationary point counts (Samoilys, 1992) were less biased and more precise. However, we felt these methods were too time consuming to gain a reliable estimate of relative abundance of a representative range of species at a site because of the effect of low visibility on species detection at most sites in the central and western Torres Strait. Visibility was generally less than 5 m in these areas. We have assumed that changes in the relative abundance of species and patterns of habitat association would be more apparent at a regional rather than local scale.

Substratum

At each site, after the diver counting fish had entered the water, a second diver followed the reef profile perpendicular to the reef crest laying out a transect line with a surveyor's chainman. The diver then recorded depth with a digital depth gauge, percentage cover of each substrate type (live coral, seagrass, algae, sand, rubble, boulders, consolidated rubble or pavement) within 2 m each side of the line. Dominant biota were recorded at 5 m intervals along the transect and the bottom was videoed every 10 m. This process was followed down the reef profile to the bottom of the reef slope (usually a depth of 12 m). Data from both divers were recorded in situ on waterproof data sheets.

Table 1. The mean abundance at each site of fishes in each genera recorded on the 41 reefs surveyed and the site (4) and species groups (5) to which they were classified (N = number of reefs observed).

Family	Genera	Number of species	Abundance \pm s.e.	Site groups	Fish groups	N	
Acanthuridae	<i>Acanthurus</i>	12	3.6 \pm 0.6	all	all	41	
	<i>Ctenochaetus</i>	2	2.4 \pm 0.2	1, 2	1	14	
	<i>Naso</i>	6	1.8 \pm 0.2	1, 2	1 - 4	21	
	<i>Paracanthurus</i>	1	2.7 \pm 0.3	2 - 4	3	5	
	<i>Zandrus</i>	1	1.8 \pm 0.3	1, 2	4	8	
	<i>Zebrasoma</i>	2	2.1 \pm 0.2	1, 2	1, 4	17	
Caesionidae	<i>Caesio</i>	3	5.2 \pm 3.8	2, 3	2, 3	27	
	<i>Pterocaesio</i>	3	4.4 \pm 0.3	1 - 3	2, 4, 5	27	
Chaetodontidae	<i>Chaetodon</i>	26	4.1 \pm 0.4	all	all	32	
	<i>Chelmon</i>	3	4.3 \pm 0.4	all	2	21	
	<i>Coradion</i>	2	1.4 \pm 0.1	1 - 3	2, 3	17	
	<i>Forcipiger</i>	2	2.2 \pm 0.6	1	4, 5	3	
	<i>Hemitaenichthys</i>	1	1.0 \pm -	1	5	1	
Lethrinidae	<i>Lethrinus</i>	11	3.8 \pm 1.2	all	all	19	
Lutjanidae	<i>Lutjanus</i>	12	7.3 \pm 3.8	all	all	37	
	<i>Symphorus</i>	1	1.3 \pm 0.1	2, 3	3	11	
Serranidae	<i>Cromileptes</i>	1	1.6 \pm 0.2	1 - 3	2	13	
	<i>Plectropomus</i>	4	2.2 \pm 0.5	all	1, 2	29	
	<i>Variola</i>	1	2.6 \pm 0.6	1	4	5	
Labridae	<i>Cheilinus</i>	1	1.4 \pm 0.1	1, 2	1	13	
	<i>Choerodon</i>	1	1.8 \pm 0.1	all	1	26	
	<i>Coris</i>	2	1.7 \pm 0.3	1, 3	4	7	
	<i>Epibulus</i>	1	1.8 \pm 0.1	1 - 3	1	25	
	<i>Gomphosus</i>	1	1.9 \pm 0.1	1, 2	4	8	
	<i>Halichoeres</i>	2	2.1 \pm 0.1	1, 2	4, 5	8	
	<i>Hemigymnus</i>	2	2.7 \pm 0.2	all	1, 2	41	
	<i>Thalassoma</i>	4	2.7 \pm 0.3	all	2, 5	32	
	Pomacentridae	<i>Acanthochromis</i>	1	15.9 \pm 3.4	all	2	40
<i>Abudefduf</i>		5	4.1 \pm 0.6	all	1 - 3	32	
<i>Amblyglyphidodon</i>		3	3.0 \pm 0.2	1 - 3	1 - 3	29	
<i>Chromis</i>		15	3.0 \pm 0.3	1 - 3	3 - 5	21	
<i>Chrysiptera</i>		5	2.8 \pm 0.4	all	1 - 3, 5	23	
<i>Dascyllus</i>		4	2.7 \pm 0.2	1, 2	1, 2, 4	16	
<i>Neopomacentrus</i>		3	8.4 \pm 1.8	2, 3	1 - 3	26	
<i>Plectroglyphidodon</i>		3	2.4 \pm 0.3	1, 3	5	10	
<i>Pomacentrus</i>		15	4.5 \pm 0.5	all	all	40	
<i>Stegastes</i>		3	2.7 \pm 0.4	1, 3	4	12	
Siganidae		<i>Siganus</i>	9	2.6 \pm 0.3	all	all	29
Scaridae		<i>Cetoscarus</i>	1	1.4 \pm 0.1	1, 2	1	22
	<i>Scarus</i>	19	2.5 \pm 0.3	all	all	34	
	<i>Hipposcarus</i>	1	1.8 \pm 0.1	1, 2	1	12	
Total		188	2.1 \pm 0.1			41	

Data analysis

The geometric mean of the total abundance of each fish species at each site was averaged across all sites around the 43 reefs visited. Two reefs that had less than four sites were dropped from the analysis. Data from the other 41 reefs were used in a cluster analysis of species and sites to identify groups that co-occurred. A separate multi-dimensional scaling analysis (MDS) was also performed on the species means at each reef. This gave scores in three dimensions for each reef. These MDS scores were correlated with the mean of each of the environmental variables measured at each reef.

Other studies of seagrass and coral cover (Long et al., 1997) have shown that the distribution of these benthic faunal groups were strongly correlated with the distance from sources of terrestrial runoff. We examine the relationship between the mean MDS scores of fish groups with the distance from land of each reef. Five sites were identified that covered the major sources of terrestrial runoff in Torres Strait. These were: the Fly and Mai Kussa Rivers in southern Papua New Guinea, Prince of Wales Island, off the tip of Cape York, Moa Is in western Torres Strait and Darnley Island in eastern Torres Strait (Fig. 1). Inverse distance was used to reflect the diminishing effect of distance.

RESULTS

Patterns in fish communities

There was a strong east-west pattern in the fish species composition of the reefs sampled which could be separated into four groups (Fig. 2). The species composition of reefs in the outer barrier reefs of eastern Torres Strait along the continental shelf formed a distinct group as did the reefs of the eastern mid-shelf region. The large reefs in the central and western Torres Strait formed another group that was related to the fourth grouping of the narrow reefs in the western Torres Strait (Fig. 3).

The cluster analysis of fish species across sites produced five groups that differed in the number of member species (Table 2). These groups were not taxonomically related, nor did they fit specific feeding guilds. The two-way table comparison of the site and fish species groups shows that the relative frequency of occurrence of each species group was related to the geography (Table 2). Group 1 comprised species that were found more commonly in the eastern reefs but occurred on the mid-shelf as well. Other groups such as species group 2 were most abundant on the mid-shelf but also occurred commonly on the central Torres Strait reefs and outer barrier reefs (Table 2).

Table 2. Two way table of the relative abundance of fish species in the site and species group combinations (Site group 1 = Outer ribbon reefs; Site group 2 = Mid-shelf reefs; Site group 3 = Warrior reefs; Site group 4 = Western reefs; white = absent, light grey < half the species occurred at relatively low abundances, medium grey = more than 2/3 of species were relatively abundant, dark grey = almost all species occurred at their highest abundance).

Groups	Sites			
	1	2	3	4
	Dark grey	Medium grey	Light grey	White
Fish 2 (32 spp)	Light grey	Dark grey	Medium grey	White
Fish 3 (25 spp)	White	Light grey	Dark grey	Medium grey
Fish 4 (42 spp)	Dark grey	Light grey	White	White
Fish 5 (33 spp)	Medium grey	White	White	White

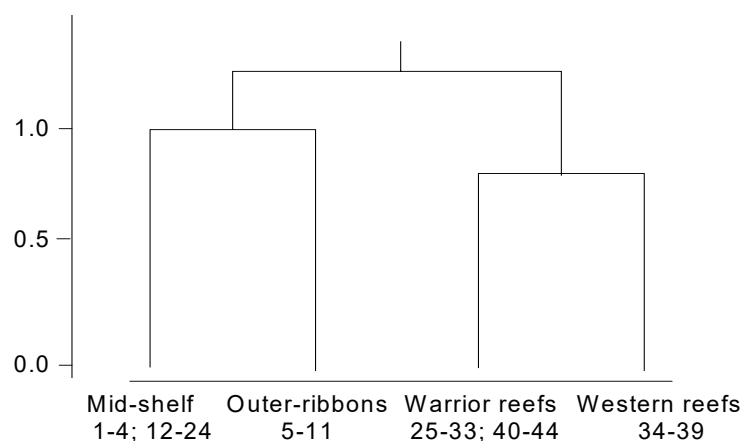


Figure 2. Dendrogram of sites sampled on the edge of reefs in Torres Strait. Bray-Curtis dissimilarity measure used with UPGMA sorting with $\beta = -0.1$. Vertical axis: dissimilarity level.

Relationships with habitat

There were significant correlations between the MDS values of the 41 reefs and three of the habitat variable measured. Water depth was positively correlated with MDS 1 and negatively correlated with MDS 3 (Table 3). MDS 3 was also correlated with live coral and algal cover. Live coral cover was negatively correlated with MDS 2.

There were significant correlations between the mean habitat measures at the 41 reefs. Live coral and rock pavement cover were greater at greater depths and there was greater cover of seagrass and algae on sand and in shallower water.

The mean habitat measures of each of the four site groups of reefs showed that there were trends in many of the measures (Table 4). Mean depth and live coral cover declined from east to west and soft sediment, consolidated rubble, algae and seagrass cover increased from east to west (Table 4).

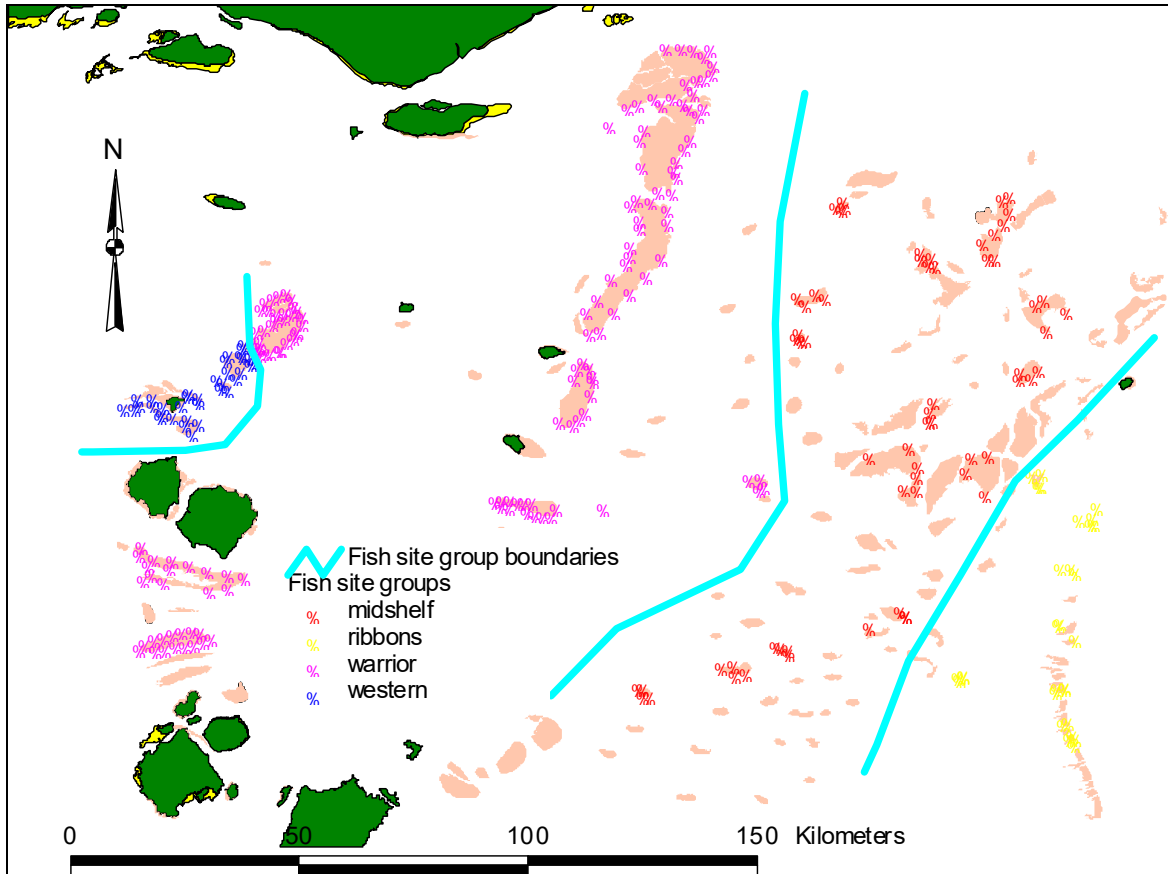


Figure 3. Torres Strait reef fish: Site groups from the cluster analysis of fish counted at sites sampled along the edge of the reef.

Table 3. Partial correlations between MDS 1 to MDS 3 and depth (in m) and the log-transformed mean percentage cover of various habitat measures on the 41 reefs surveyed (* = $P < 0.05$; ** = $P < 0.01$; *** = $P < 0.001$).

Habitat measure	MDS 1	MDS 2	MDS 3
Depth (m) ^a	0.34*	-0.27	-0.44**
Sand ^b	0.11	0.05	-0.03
Rubble ^c	-0.15	-0.03	-0.09
Boulders ^d	-0.27	-0.15	-0.02
Consolidated rubble ^e	-0.17	0.31	0.19
Pavement ^f	0.02	-0.21	0.09
Live coral ^g	0.12	-0.62***	-0.64***
Seagrass ^h	0.20	0.20	0.11
Algae ⁱ	-0.52***	0.04	0.50**

^a % Sand, % pavement, % live coral partialled out

^b Depth, % pavement, % live coral partialled out

^c % Boulders, % consolidated rubble, % pavement partialled out

^d % rubble, % consolidated rubble partialled out

^e % Rubble, % boulders, % live coral partialled out

^f Depth, % sand, % rubble partialled out

^g Depth, % sand, % consolidated rubble partialled out

^h Depth, % sand, % live coral, % algae partialled out

ⁱ Depth, % sand, % live coral, % seagrass partialled out

Relationships with sources of terrestrial runoff

There were strong relationships between the MDS values of the reefs and their distance from sources of terrestrial runoff (Table 5). The residuals of both MDS 2 and MDS 3 were highly significantly correlated with distance from land ($P < 0.0001$). The relationship explained 63% of the variation in MDS 2 and 49% of the variation in MDS 3. In both cases, the strongest relationship was with the Mai Kussa River in coastal Papua New Guinea. There was a significant negative relationship with Prince of Wales Is on both MDS 2 and MDS 3 (Table 5).

Table 4. Mean habitat measures \pm s.e. of the four reef groups separated in the cluster analysis.

Habitat measure	Reef group	Mean \pm s.e.	Range	N
Depth (m)	Outer ribbons	8.1 \pm 1.0	6 - 12	7
	Mid-shelf	6.9 \pm 0.7	4 - 15	16
	Warriors	5.3 \pm 0.4	4 - 9	12
	Western	4.2 \pm 0.2	4 - 5	6
Soft sediment (%)	Outer ribbons	18.1 \pm 2.9	2 - 25	7
	Mid-shelf	25.2 \pm 2.6	5 - 42	16
	Warriors	33.7 \pm 4.5	4 - 62	12
	Western	51.8 \pm 5.0	41 - 74	6
Rubble (%)	Outer ribbons	23.3 \pm 2.4	17 - 32	7
	Mid-shelf	30.7 \pm 2.6	21 - 54	16
	Warriors	23.4 \pm 2.9	11 - 43	12
	Western	23.6 \pm 3.5	15 - 37	6
Consolidated rubble (%)	Outer ribbons	5.5 \pm 1.4	0 - 12	7
	Mid-shelf	11.6 \pm 3.6	0 - 54	16
	Warriors	15.8 \pm 2.1	7 - 32	12
	Western	17.7 \pm 4.5	6 - 32	6
Boulders (%)	Outer ribbons	0.9 \pm 0.9	0 - 6	7
	Mid-shelf	4.6 \pm 1.6	0 - 20	16
	Warriors	6.4 \pm 1.3	1 - 13	12
	Western	1.2 \pm 0.5	0 - 3	6
Pavement (%)	Outer ribbons	26.0 \pm 5.7	5 - 53	7
	Mid-shelf	3.4 \pm 1.5	0 - 18	16
	Warriors	8.2 \pm 2.1	0 - 27	12
	Western	0.2 \pm 0.1	0 - 0.4	6
Live coral (%)	Outer ribbons	20.7 \pm 2.9	9 - 29	7
	Mid-shelf	16.7 \pm 1.6	7 - 28	16
	Warriors	8.9 \pm 2.0	0 - 22	12
	Western	1.4 \pm 1.0	0 - 6	6
Algae (%)	Outer ribbons	0.7 \pm 0.7	0 - 5	7
	Mid-shelf	1.0 \pm 0.7	0 - 8	16
	Warriors	15.8 \pm 3.2	0 - 34	12
	Western	29.5 \pm 5.6	11 - 51	6
Seagrass (%)	Outer ribbons	0.0 \pm 0.0	0 - 0	7
	Mid-shelf	0.0 \pm 0.0	0 - 0	16
	Warriors	5.4 \pm 2.0	0 - 23	12
	Western	14.4 \pm 4.8	4 - 34	6

Table 5. Regression of the inverse distance to five sources of terrestrial runoff into Torres Straits and MDS 1 to MDS 3 of the fish species composition at the 41 reefs surveyed.

Source	MDS	Slope ($\beta \pm$ s.e.)	Probability
Moa Is	1	-0.02 \pm 0.67	0.976
	2	2.51 \pm 0.63	0.001
	3	1.49 \pm 0.71	0.043
Prince of Wales Is	1	0.48 \pm 1.08	0.656
	2	-2.88 \pm 1.01	0.007
	3	-2.93 \pm 1.13	0.014
Darnley Is	1	0.46 \pm 0.35	0.202
	2	-0.46 \pm 0.33	0.164
	3	-0.99 \pm 0.37	0.011
Mai Kussa River	1	-2.83 \pm 2.21	0.207
	2	2.28 \pm 2.06	0.275
	3	3.72 \pm 2.31	0.116
Fly River	1	1.37 \pm 1.99	0.496

DISCUSSION

There was a well defined pattern in the species composition of the fish communities in Torres Strait at the scale examined in this study. The outer barrier reefs in the eastern Torres Strait had the highest diversity and a number of taxonomic groups were only found in this area. Within the more diverse families counted, there were a number of specialist species that only occurred in one or two site groups. Most of these occurred in the two eastern site groups - the outer barrier reefs and the mid-shelf reefs. There were few generalist species found more widely.

For example, among herbivorous fishes such as the scarids and acanthurids, only *Scarus ghobban* and *Acanthurus blochi* occurred throughout the study area. Most other species in these families were recorded only on the outer barrier and some mid-shelf reefs. The labrids *Thalassoma lunare* and *Hemigymnus melapterus* and the three pomacentrid species *Acanthochromis polyacanthus*, *Pomacentrus moluccensis* and *P. amboinensis* were the only other generalist species. These species had similar abundances in all four site groups.

In most families there was a shift in the species composition from east to west across Torres Strait. The dominant fish species changed between the reef site groups as the relative importance of each habitat type changed in relation to the influence of terrestrial runoff.

Among the only widely distributed carnivores recorded on the Warrior and western reefs (Site groups 3 and 4) were *Lutjanus carponotatus* and *Lethrinus harak*. The coral trout *Plectropomus maculatus* was the only serranid that occurred on the Warrior and western reefs although it did occur on mid-shelf reefs where the other *Plectropomus* species occurred.

Williams (1991) summarised studies of fish community structure in the tropical south Pacific, especially on the Great Barrier reef. He found that major changes in the distribution and abundance of some species could occur at all scales from 100's of metres to thousands of kilometres. However, patterns were strongest along environmental gradients such as across continental shelves from nearshore to oceanic waters.

There is a gradual decline in oceanic influence as you move from east to west across the Torres Strait. The reefs sampled in eastern Torres Strait were close to the edge of the continental shelf whereas in the western Torres Strait waters shelve gradually down into the Arafura Sea which is a semi-enclosed system with a maximum depth of about 70 m. On the Great Barrier reef, the highest number of species is found on the mid-shelf reefs due to high planktivore biomass (Williams 1991). However, there is little data on the influence of habitat changes on these patterns. The larger number of species in the eastern Torres Strait appears to be related to the higher live coral cover and more structured reef that may provide a greater habitat diversity and range of suitable food.

ACKNOWLEDGEMENTS

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PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
MANAGEMENT Review of TSFF data needs including daily fishing logbooks	Agenda Item No. 4.1 FOR DISCUSSION AND ADVICE

RECOMMENDATIONS

That the RAG:

- a. **NOTE** the details of the past (SM02) and present (TSF01) Daily Fishing Logbook in use in the Torres Strait Finfish Fishery
- b. **DISCUSS and PROVIDE ADVICE** on information that the TSF01 Logbook provides and suggest any changes to AFMA that any changes that can better meet the data needs of the fishery and increase adoption and data collection across all sectors of the fishery.

BACKGROUND

1. AFMA commenced a compulsory Spanish mackerel logbook program (SM01) in 1988 for commercial non-traditional inhabitant fishers operating in the Torres Strait. At the same time fishers were also required to fill out a Queensland Fisheries (then QDPI&F, formerly QFMA) Queensland East Coast fishery logbook (LN series – **Attachment A**).
2. In 1990 a revised Spanish mackerel logbook (SM02) was introduced by AFMA (**Attachment B**) enabling fishers working in both Torres Strait and Queensland east coast to use a single logbook.
3. In 2003 a general line fishing logbook was introduced (TSF01) for both Spanish mackerel and reef line fisheries in Torres Strait which has led to greater certainty in these more recent catch report (**Attachment C**)
4. Data reported in the TSF01 are reported daily and include:
 - a. Vessel name and activity code (non-fishing codes, fishing trip codes)
 - b. Location fished
 - c. Targeting (mackerel or reef-fish)
 - d. Catch by species
 - e. Number of fish landed
 - i. Total number of fish (mackerel)
 - ii. Number of trays/cartons (mackerel)
 - iii. Average weight (kg) per carton (mackerel)
 - iv. Processing code (i.e. fillets, whole) (mackerel)
 - v. Total number of cartons (trout) Number, average kg, number fish per carton for plate, medium and large size class fish.
 - f. Gear used (handline, trolling, droplining)
 - g. Number of lines
 - h. Species split for coral trout (per cent breakdown of common, islander, leopard, bluespot)

- i. Prompts fishers to report any interactions with Threatened, Endangered and Protected Species.
 - j. Prompts fishers for any other comments.
5. Prior to the adoption of TSF01, other logbooks used in the fishery (LN series, SM01, SM02) gave fishers the option of reporting location fished through a 'hill-grid' system whereby they would refer to a gridded pre-agreed map of the fishery and after fishing, enter a general area (grid) and within that grid specify a site where most of the fishing occurred. For example in Figure 1 (below) fishing at Bramble Cay would be recorded as Grid D1, Site 9. Fishing at Murray Island home reef would be Grid E2, Site 21.

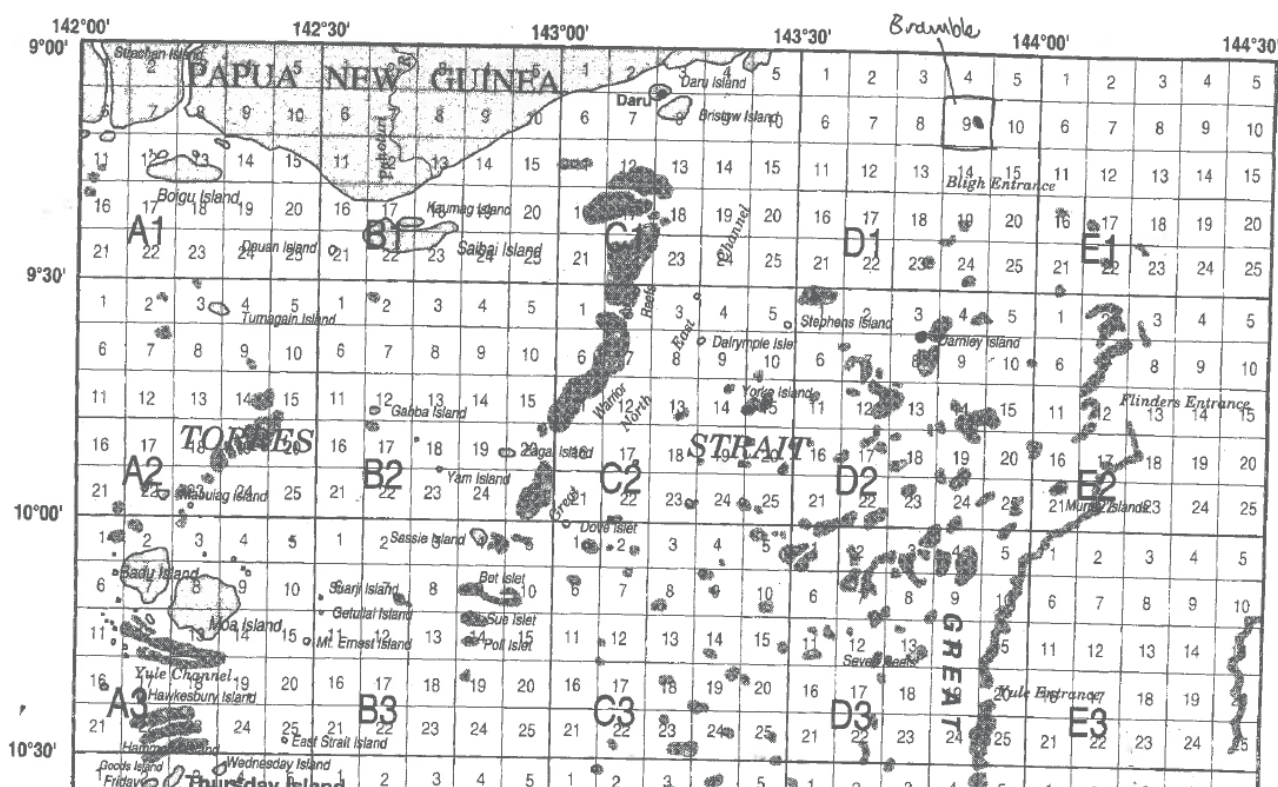


Figure 1 Example Hillgrid system (from Queensland East Coast Line Fin Fish Fisheries Logbook LF06).

6. In discussing adoption of daily fishing logbooks across all sectors of the fishery, TIB fishers have raised an issue with AFMA that some fishers may not be able to accurately record latitude and longitude as they may not have access to GPS plotters. It has been suggested to amend daily fishing logbooks to allow fishers the option of recording either hillgrid or latitude, longitude. This may increase uptake of daily fishing logbooks with some operations.
7. FFRAG have previously raised issues with reporting in logbooks and have suggested that the tender details fields should be amended to clearly capture the first and second name of tender driver, noting that historic dory driver data is poorly filled out and often incomplete through the time series of available logbook information.
8. Another issue raised by FFRAG is the location data for reef-line catches with advice noted that while TSF01 captures the location of the primary vessel for the fishing day, the associated fishing dories may stray a long distance from the primary and visit a range of bombies targeting trout.

4.1 Attachment A – Queensland Fisheries LF03 daily fishing logbook instructions and example page

Instructions for Use	Filling in the Log Form - Essential Details	Reporting Catch
<p>This logbook is designed to collect information for management and research about any REEF LINE FISHING you undertake.</p>	<p>The log sheet must be completed daily. A separate line must be completed for each day.</p>	<p>The catch reporting section of the log is split into dead and live product. You must complete the appropriate section. An estimate of your daily catch weight by species is to be recorded in the appropriate column in both live and dead product sections. If recording dead product the product form of that species must be recorded as well.</p>
<p>When you use a net to catch fish then you are required to use the Net and Crab Fishery Logbook. Please phone 07 3227 6299 if you require a copy.</p>	<p>The Activity Codes provided should be used to indicate the activity in which you were involved on each day.</p>	<p>The preferred way to record product form is for you to report your catch weight as whole/live weight.</p>
<p>The logbook does not require carbon paper. The fold-out writing template must be placed under the blue page when you are filling in the logsheet to prevent accidental marks on the next set of forms.</p>	<p>There are 16 days of activity to be completed for each page of the logbook.</p>	<p>If the species is not shown on the logsheet then please use one of the columns to record the name of the fish, the estimated daily catch weight and the product form.</p>
<p>THE LOG MUST BE COMPLETED DAILY AND POSTED TO THE LOGBOOK SECTION AT THE END OF EACH MONTH</p>	<p>If you were not fishing for an extended period, such as a week, you must provide the information either in the box on the top right hand side of the form or on the logsheet.</p>	<p>Reporting Tag Recoveries</p> <p>A section is provided on the bottom of each logsheet to record tagged fish that you catch. In addition there are forms in the back of the logbook which you are requested to complete and send in with your logbook sheets.</p>
<p>The top page is designed to remain in the logbook as your permanent record. There is space available on the back of this sheet for your private information.</p>	<p>The foldout template provides an example of how to complete the logbook sheet. Phone (07) 3227 6299 if you have any questions about filling in the logsheet.</p>	<p>Requirements Under The Act</p> <p>It should be noted that it is an offence under Section 118 of the Fisheries Act 1995 for a person not to keep the returns required by the Department and to give them to the Department as required. Failure to keep or give the required returns is also a basis upon which the Department may refuse to issue or renew an authority under Section 59 of the Act, or suspend or cancel an authority under Section 67 of the Act.</p>
<p>The blue duplicate pages are perforated across the top so that they can be torn out, placed in the prepaid envelopes and mailed at the end of each month.</p> <p>Logsheets are to be sent to: Queensland Fisheries Service Department of Primary Industries Reply Paid 227 Brisbane Roma St 4003</p>	<p>Position Reporting</p> <p>The fishing location is to be recorded as the position of greatest catch. The location can be recorded as:</p> <ul style="list-style-type: none"> - grid (printed in black in the grid) <u>and</u> site (printed in green within the grid from the maps provided) - latitude and longitude <p>If you searched or tracked a school without catch on the day, please record grid (or grid and site) searched.</p>	<p>The Master Fisherman in charge of the vessel for and on behalf of the licence holder and/or the holder of the Commercial Fishing Vessel Licence shall enter information into the appropriate logbook for the fishery for each day or submit a "nil" return if no fishing activities occurred for any particular month. The original log pages and supporting landing docket must be kept as evidence of completion in case of loss of duplicate copies.</p>
<p>Logbooks should be forwarded to the above address no later than 15 days after the end of the month to which the activity relates.</p> <p>Should you have any queries about the Logbook Programme or about using the logbook please phone (07) 3227 6299.</p>	<p>Reporting Effort</p> <p>Effort is to be recorded as the number of dories, the number of crew fishing and the fishing method. If you do not use dories but fish from your primary vessel then PUT A ZERO in the column where the number of dories are recorded.</p>	

Queensland Fisheries Service

REEF LINE FISHERY LOGBOOK LF03

Boat Name Fisher	Boat Mark FAAA	Skipper's Name D Jones	Skipper's Signature <i>D Jones</i>	Log Book No	Page No
---------------------	-------------------	---------------------------	---------------------------------------	-------------	---------

Boat Activity Code If you have not fished for an extended period please specify: 8/3/97 to 31/3/97 Boat Activity Code: 1

0 ... Fishing/Searching 4 ... Not Fishing - Steaming
 1 ... Not Fishing - Weather 5 ... Not Fishing - Other
 2 ... Not Fishing - In Port 10 ... Not Fishing - Reft
 3 ... Not Fishing - Broken Down

**When recording dead product please record the daily estimated weights for each species shown.
 Weights should be recorded in kilograms and the Product Form indicated by:
 F = Fillet, T = Trunk, W = Whole, G = Gutted**

When recording Live Product please record the daily estimated weights for each species shown. Weights are to be recorded in kilograms.

DATE	AREA		EFFORT					DEAD PRODUCT										LIVE PRODUCT										
			Fishing Method					Coral Trout	Red Throat Emperor	Red Emperor	Snapper (Squire)	Spanish Mackerel	Barramundi Cod	Maori Wrasse	Other	Other	Other	Coral Trout	Barramundi Cod	Maori Wrasse	Other	Other						
	Latitude	Longitude	1 = Handing/Pod 2 = Trolling			(kg)	FORM	(kg)	FORM	(kg)	FORM	(kg)	FORM	(kg)	FORM	(kg)	FORM	(kg)	FORM	(kg)	FORM	(kg)	FORM					
	or	No of Dories	No of Crew	No of Lines																								
1 2 97 0	U27	14	2	3	3	1	4	F	20	W						7	F						60	2				
2 3 97 0	U27	14	2	3	3	1	7	F	15	W													40					
4 3 97 0	U27	14	2	3	3	1	2	F	12	W													50	3				
5 3 97 4	U27	15	2	3	3	1	8	F	6	W				2	F								70					
5 3 97 1																												
7 3 97 1																												

EXAMPLE

COMMENTS: Tag Recoveries: (see forms at back of book also; please complete details on these)

Remember to fill in Logs every day and post them every month.

	Tag No.	Date

Confidential Daily Fishing Log Torres Strait Spanish Mackerel Logbook

Commonwealth of Australia Fisheries Regulations 16(1)
Queensland Fisheries Regulations
Torres Strait Fisheries Regulations (10)

SM02

Boat Name

Log Number

Torres Strait Spanish Mackerel Fishery

Requirements under Fisheries Regulations

This logbook is designed for research and management purposes, as well as providing a personal catch record for fishermen. The information is **confidential** and any person who reveals your information to another person;

- except after combination with other logbook data as statistics (*in a form that does not identify you*); or
- in performance of duty under the *Fisheries Act*; or
- by the order of a court is subject to prosecution under the Fisheries Regulations.

Under the Fisheries Regulations, the Protected Zone Joint Authority has determined that this logbook shall be used by all boats over six metres in length which are licensed to take spanish mackerel in the Torres Strait Protected Zone.

This logbook may be used aboard Torres Strait licensed Mackerel vessels to record the catches of other fish in the Torres Strait and all line fish catches in Queensland waters. The master of the boat **must** complete one line from this book for each day fished. Original pages should be kept as evidence of completion in case of loss of pink (duplicate) copies. The maximum penalty for failure to supply or complete logbook returns correctly is \$5,000. The provision of statistical returns is a requirement for operations in the Torres Strait Protected Zone and in Queensland waters.

Instructions for Use

No carbon paper is necessary. The foldout writing template should be placed under the pink (duplicate) page during entry to prevent entries onto the next set of forms.

Gear Details: Receipt (Background Information)

To be completed and handed or posted to the Thursday Island Logbook Co-ordinator when the logbook is issued.

Position Reporting

Grid maps are provided for you to record your grid position. You are also requested to provide a location name for each days fishing. Location names are provided for the Torres Strait on the four detailed Torres Strait maps provided.

Species Codes

Codes for fishing species (other than spanish mackerel) are recorded on the foldout template for reference when completing entries. The species code should be recorded alongside the kilograms of fillet weight for that species on each fishing day.

Personal Use Only Section

These are clearly marked on the logsheet and are provided for your own use. There is no requirement for these sections to be completed.

Section 4 – Days not Fished

Provision is made in the logsheet to record periods when the boat is not fishing so that every day is accounted for.

Section 5 – Unloading Information

This should be completed each time you unload. The number of trays unloaded is for spanish mackerel only.

Returning Completed Logsheets

Forward the pink (duplicate) copies from the logbook by the 15th day of each month in the pre-addressed envelopes provided;

Logbook Co-ordinator
AFMA
PO Box 376
Thursday Island, QLD 4875

or hand to the Queensland Fisheries and Boating Patrol vessel at sea.

Australian Fisheries Management Authority
January 2002

Logbook Co-ordinator
 AFMA
 PO Box 376
 Thursday Island, QLD 4875

Gear Details / Receipt

Log Number		Vessel Symbols	
-------------------	--	-----------------------	--

Vessel Name	
--------------------	--

Complete and return this sheet to:

**The Logbook Co-ordinator
 AFMA
 PO Box 376
 Thursday Island, QLD 4875**

Name of Owner	
----------------------	--

Address and Phone Number	
---------------------------------	--

Operation Details

Which port do you usually operate from?

How many people usually work in your fishing operation?

How many tender vessels do you usually use with this vessel?

Please indicate the species you usually target and the area you usually fish each quarter

	Area	Species
January — March	<input style="width: 80px;" type="text"/>	<input style="width: 80px;" type="text"/>
April — June	<input style="width: 80px;" type="text"/>	<input style="width: 80px;" type="text"/>
July — October	<input style="width: 80px;" type="text"/>	<input style="width: 80px;" type="text"/>
October — December	<input style="width: 80px;" type="text"/>	<input style="width: 80px;" type="text"/>

How many days do you usually fish each year?

What is the usual length of a fishing trip?

How many hours do you usually fish each day?

Refrigeration Details

What type of refrigeration is used on board?

Ice RSW

Dry Other

(specify)

How much product will your refrigerated/ice storage on your vessel hold?

Trays of Spanish Mackerel	<input style="width: 80px;" type="text"/>
Fillet weight in a tray	<input style="width: 80px;" type="text"/>
Packs of other fish	<input style="width: 80px;" type="text"/>
Fillet weight in a tray	<input style="width: 80px;" type="text"/>
Other Measure	<input style="width: 80px;" type="text"/>
Wet product	<input style="width: 80px;" type="text"/>

Comments

Please provide any comments that you think would be useful describing your fishing operation

Recipient's Signature	/ /
Issuing Officer's Signature	/ /

Logbook Co-ordinator
AFMA
PO Box 376
Thursday Island, QLD 4875

Mackerel/Linefish Logbook Torres Strait Protected Zone and Queensland

LOG No.	PAGE No.

Section 1	Boat Name	BOUNTY		Personal Use Only	Comments	Skipper	Printed Name	
	MF Number	M30761					J. DODD	
	Boat Symbols	KA3-T					Signature	
							J. Dodd	

This section to be completed on every fishing day				Location		Number of Spanish Mackerel								Number of Spanish Mackerel		Number Mackerel Trays		Other Fish Species					
Date	Trip* Length	No. Crew Fishing	Number Dories	Grid Fished	Site Fished Reef, Cay, Island etc.	AM PM	Hours Fished	Dory One		Dory Two		Dory Three		Dory Four		Daily Total	Progressive Total	Daily Total	Progressive Total	Species Codes and Fillet Weight**			
								AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals					Code	kg	Code	kg
20/12/01	S	2	2	DI	LAXTON REEF	AM	2	12	12	6	6					18		9		RE	27		
						PM	-	-	-	-													TV
21/12/01	C	↓	↓	DI	LAXTON REEF	AM	3	18	42	11	24					31	49	26	35				
						PM	2	12		7													TV
22/12/01		↓	↓	DI	UNDERDOWN IS.	AM	2	10	60	8	39					33	82	19	54				
						PM	2	8		7													
23/12/01		↓	↓	DI	UNDERDOWN IS.	AM	-	-	74	-	49					24	106	14	68	TV	30	PK	7
						PM	2	14		10													BK
24/12/01		↓	↓	DI	UNDERDOWN IS.	AM	-																
						PM	-																
						AM																	
						PM																	
						AM																	
						PM																	
						AM																	
						PM																	
						AM																	
						PM																	
						Totals		74		49					106		68		Total kg				

Section 4	This section must be completed if the boat is not fishing for an extended period (eg. during bad weather)		Section 5	Unloading Information										
	From	Until		This section is to be completed whenever you offload product.										
		Unload Date	24 / 12 / 01		Port of Site of Unload		Mothership, Transport Company or Depot		Number of Trays		Approximate Fillet		Other Species	
			YORKE ISLAND		EMU BAY				68		1020 kg		128 kg	

Logbook Co-ordinator
 AFMA
 PO Box 376
 Thursday Island, QLD 4875

Mackerel/Linefish Logbook

Torres Strait Protected Zone and Queensland

LOG No.	PAGE No.

Section 1	Boat Name		Personal Use Only	Comments	Skipper	Printed Name	
	MF Number					Signature	
	Boat Symbols						

This section to be completed on every fishing day					Location		Number of Spanish Mackerel								Number of Spanish Mackerel		Number Mackerel Trays		Other Fish Species						
Date	Trip* Length	No. Crew	Fishing	Number Dories	Grid Fished	Site Fished Reef, Cay, Island etc.	AM PM	Hours Fished	Dory One		Dory Two		Dory Three		Dory Four		Daily Total	Progressive Total	Daily Total	Progressive Total	Species Codes and Fillet Weight**				
									AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals					Code	kg	Code	kg	
							AM																		
							PM																		
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							AM																		
							PM																		
							AM																		
							PM																		
							AM																		
							PM																		
							Totals																		

*D = Day Trip, S = Start of Trip more than one day
 C = Continuing Trip, E = End of Trip

**Species codes are shown on Foldout templates

Section 4	<i>This section must be completed if the boat is not fishing for an extended period (eg. during bad weather)</i>		Section 5	Unloading Information										
	<i>This section is to be completed whenever you offload product.</i>													
	From	/ /	Until	/ /	Unload Date	/ /	Port of Site of Unload	Mothership, Transport Company or Depot	Number of Trays	Approximate Fillet	kg	Other Species	Approximate Fillet	kg

Explanatory Notes for Logbook Completion

Section 1	Boat Name	← These details should be completed on every page
	MF Number	
	Boat Symbols	

Master Fisherman's Number

Section 2 and 3 must be completed on every fishing day

Section 2	This section to be completed on every fishing day				Location		Number of Spanish Mackerel								Number of Spanish Mackerel		Number Mackerel Trays		Other Fish Species									
	Date	Trip* Length	No. Crew Fishing	Number Dories	Grid Fished	Site Fished Reef, Cay, Island etc.	AM	PM	Hours Fished	Dory One		Dory Two		Dory Three		Dory Four		Daily Total	Progressive Total	Daily Total	Progressive Total	Species Codes and Fillet Weight**						
										AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals	AM/PM Totals	Daily Prog. Totals					Code	kg	Code	kg			
The date should be recorded here on every fishing day. Trip length code is shown below. Fishing grid and site are to be shown here using the place names and grids on the maps provided. Indicate if using main vessel.							AM		The hours fished during each am and pm period are to be shown here. Note: Sections marked 'personal' are included for skippers convenience and are not essential for logbook completion. If not fishing record why on a line of the logbook eg. bad weather, end of trip, breakdown etc. for extended periods complete Section 2 below.																			
							PM																					
							AM																					
							PM																					
							AM																					
							PM																					
							AM																					
							PM																					
							AM																					
							PM																					
							AM																					
							PM																					
							Totals															Total kg						

Section 3

Section 4 must be completed when not fishing

Section 5 must be completed every time the boat unloads product

Section 4	This section must be completed if the boat is not fishing for an extended period (eg. during bad weather)		Section 5	Unloading Information This section is to be completed whenever you offload product.			
	From <input type="text"/> / <input type="text"/> / <input type="text"/> Until <input type="text"/> / <input type="text"/> / <input type="text"/>	Unload Date <input type="text"/> / <input type="text"/> / <input type="text"/>		Port of Site of Unload <input type="text"/>	Mothership, Transport Company or Depot <input type="text"/>	Number of Trays <input type="text"/>	Approximate Fillet <input type="text"/> kg

Record start and finish dates when the boat is not fishing for extended periods.

Codes for Other Fish Species

Fish	Code	Page Number
Red throat emperor or Sweetlip (<i>Lethrinus chrysostomus</i>)	RT	393
Red emperor (<i>Lutjanus sebae</i>)	RE	337
Spangled emperor (<i>Lethrinus nebulosus</i>)	SE	396
Coral trout (<i>Plectropomus leopardus</i>)	CT	203
Large mouth nannygai (<i>Lutjanus malabaricus</i>)	LM	339
Pike (<i>Sphyaenella obtusata</i>)	PK	524
Trevally (<i>Gnathanodon</i> sps., <i>Caranx</i> sps. or <i>Carangoides</i> sps)	TV	296 - 309
Black king (<i>Rachycentron canadus</i>)	BK	278
Maori Wrasse (<i>cheilinus</i> sps.)	MW	546
Doggy or school mackerel (<i>Scomberomorus munroi</i>)	SM	622
Grey mackerel (<i>Scomberomorus semifasciatus</i>)	GM	630
Spotted mackerel (<i>Scomberomorus munroi</i>)	SM	622
Shark or salmon mackerel (<i>Grammatorcynus bicarinatus</i>)	AM	632
Mixed fillets Other species (<i>specify</i>)	XF	

Page numbers come from E.M. Grant's guide to fishes, 1982 (fifth edition).

Torres Strait Finfish Daily Fishing Log – TSF01

GENERAL INFORMATION AND INSTRUCTIONS FOR HOLDERS OF FISHING LICENCES

Purpose

This logbook is to be used when line fishing in the area of the Torres Strait Spanish Mackerel and Reef Line Fisheries. It is designed to provide a continuous record of fishing operations undertaken by Commonwealth licence holders.

Accurate data collected in this logbook is essential to provide information for research into and management of Torres Strait fisheries.

Important Information and Instructions

Completing the logbook

- This logbook must be completed for every day that the fishing licences is in force, regardless of whether or not fishing takes place on that day (see the “How to complete” section).
- All logbook information must be recorded on a daily basis and details for the last day of the trip must be recorded before the boat docks at the end of each trip.
- The pages in this logbook are self-carbonating. Please use a ballpoint pen when completing forms. Place the fold-out flap under the original and duplicate pages to prevent writing transferring to the next set of forms.

Location of the logbook

- This logbook must be on board the boat during line fishing operations.

Who should use this logbook ?

- The holder of the fishing licence is responsible for ensuring that this logbook is completed and that it is certified as complete and correct.
- The holder can do these things personally. Alternatively, the holder can ensure these things are done on their behalf by a person authorised in writing to do so by the fishing licence holder in the approved form. Contact AFMA for details of how to authorise another person to complete the logbook.

Submitting logsheets

This logbook contains numbered pages in duplicate which are referred to as logsheets. Original copies must be returned to AFMA in date order in either the reply paid envelope provided or posted to:

The Logbook Co-ordinator
Australian Fisheries Management Authority
BOX 376
Thursday Island QLD 4875

by the 14th day of the following month, eg logsheets for March are due by the 14th of April. Duplicate copies should be retained.

Vessel, Gear and Skipper Details form

- The fishing licence holder must ensure that the Vessel, Gear and Skipper Details Form attached to this logbook is accurately completed and returned to AFMA within 14 days of receipt of the logbook.
- A second Vessel, Gear and Skipper Details form is located in the middle of the logbook. The fishing licence holder must ensure this second form is completed and returned to AFMA if any boat and/or gear details, or contact details of any person authorised to complete this logbook, change. Additional forms are available from AFMA if required.

Penalties

Fishing licence holders and persons completing this logbook on their behalf are advised that:

- (i) a failure by a licence holder to ensure the completion of the logbook in accordance with these instructions,
- (ii) the giving of false or misleading information in the logbook by the fishing licence holder or a person completing the logbook on their behalf, or
- (iii) the recording or communicating by the fishing licence holder or anyone else of information in a logbook concerning the affairs of another person, or the producing of such information, except in the performance of a duty under the Torres Strait Fisheries Management Act 1984 or the regulations made under that Act or in pursuance of a court order

may constitute serious offences under Commonwealth laws.

Licence holders are also advised that failure to ensure the completion of the logbook in accordance with the instructions may lead to suspension or cancellation of their licence.

Help Available

There is an example of a completed logsheet and further information and instructions about how to complete the logbook at the front of this logbook. If you have any questions or problems, please contact an AFMA Logbook Officer on (02) 6272 5029.

Australian Fisheries Management Authority TSF01
June 2003

Torres Strait Finfish Daily Fishing Log – TSF01 How to Complete

Page Header

Enter the Boat Name and Distinguishing Symbol here.

Extended Non-Fishing Period

If you are not fishing for an extended period within the month(s), please specify the non-fishing dates and the appropriate non-fishing code. This will reduce the number of logsheets needed to account for every day your fishing concession is valid.

Fishing Details

Non-Fishing Code

If you are not fishing please specify the non-fishing code for that day.

Trip Code & Port of Departure

The trip code should to be completed on a daily basis. It is important that you indicate the start of the trip, the end of the trip, or if the trip is a day trip. You must record the port of departure at the start of each trip.

Location

You must record the location of the primary boat. Please provide the location as a latitude and longitude (degrees and minutes).

Total Hours Fishing

Record the total number of hours fishing. Sum the hours fishing of all the tenders operating.

Targeting

Indicate which species is targeted for that day by ticking 'Mack' for mackerel species and 'Reef' for reef and other finfish species. If you target both groups of species in one day, please complete two columns.

Method Used

Please indicate the main method used for the day (LHL - Handline, LTL - Trolling and LDR - Dropline).

Total No of Lines

Record the total number of lines used for the day. This includes lines for all tenders and the primary boat (if fishing).

Catch Details

Mackerel

Record the total number of each species of mackerel caught for the entire day by each vessel.

Daily Total (Complete when targeting mackerel species)

Also record:

- the total number of all mackerel species caught,
- the number of trays or cartons,
- the average weight of the trays or cartons, and
- the level of processing (use processing codes supplied).

Other Finfish Species

Record the estimated total fresh weight (ie. whole weight before gutting, filleting etc) in kilograms for each finfish species other than mackerel species caught each day. Also record the total number of each finfish species caught (this is optional).

Coral Trout (Complete when targeting reef fish) Please record:

- the number of cartons of plate, medium and large size coral trout - taken for that days fishing;
- the average weight of the cartons; and
- the average number of fish per carton.

Also estimate the percentage (%) species split by number for coral trout. For example: 60% common, 25% islander, 15% leopard and 0% bluespot.

Wildlife and Protected Species

Did your gear come into contact with or catch a protected species. Please tick YES or NO on a daily basis. If YES please complete the Protected Species Details Form at the back of the logbook and submit it with the relevant log page.

Time box

All Commonwealth Departments are required to have time boxes included on their forms. This initiative forms a part of the Government's regulatory reform strategy to reduce the paperwork and compliance burden on business.

Comments

This section is provided for any further information that you think may be important such as: gear failure, weather, damaged fish, size of fish, loss of catch to shark/birds etc.

Signature and Date Box

Each logsheet requires the date and signature of the Concession Holder or their authorised representative. The signature verifies that the information recorded in the logbook is a complete and accurate record of fishing activities.

Torres Strait Finfish Log – TSF01

Original Copy – Send to AFMA

Vessel Name: **Blue Lagoon** Dist. Symbol: **FWQT-9** Log No: _____ Page No: _____

Extended Non-Fishing I did not work between **15/ 6 /02** **30/ 6 /02** Non-Fishing Code **2** NON-FISHING CODES 1 Bad Weather 2 In Port 3 Broken down 4 Steaming 5 Other fishery

TRIP CODE:	Date	1 / 7 / 02	2 / 7 / 02	2 / 7 / 02	3 / 7 / 02	4 / 7 / 02	5 / 7 / 02	6 / 7 / 02
S – Start of trip more than 1 day	Non-Fishing Code							4
C – Continuing Trip	Trip Code	S	C	C	C	C	E	
E – End of Trip	Port of Departure	Thursday Is						
D – Day Trip								
Location: (position of Primary vessel)	Latitude (dd,mm)	0 9 5 3	0 9 5 1	0 9 5 5	1 0 0 5	1 0 1 2	0 9 5 5	
	Longitude (ddd,mm)	1 4 3 3 5	1 4 3 3 6	1 4 3 4 0	1 4 3 4 5	1 4 3 3 5	1 4 3 2 0	
Total No. of Hours Fishing: (Combined hours of each Vessel operating)		24	12	16	27	18	28	
Targeting: (Circle) (Mackerel or Reef fish)		Mack Reef	Mack Reef	Mack Reef	Mack Reef	Mack Reef	Mack Reef	Mack Reef
Method Used: LHL-Handline LTL-Trolling LDR-Droplining		LTL	LTL	LHL	LHL	LHL	LTL	
Total No. of Lines		8	8	4	4	3	8	
Catch Information (Mackerel)	Number							
Tender 1 Spanish School	Number	24	2				9	
Fred Mack Spotted Grey / Broad-barred Salmon							1	
Tender 2 Spanish School	Number	18	3				14	
M. Barra Spotted Grey / Broad-barred Salmon			1					
Tender 3 Spanish School	Number	17	6			1	8	
Brian Maori Spotted Grey / Broad-barred Salmon		1				1	2	
Tender 4 Spanish School	Number	13	4				11	
S. Cod Spotted Grey / Broad-barred Salmon			1					
DAILY TOTAL	Total No. of Fish	73	17			2	45	
	No. of Tray/Cartons	22	5			0.5	16.5	
	Ave weight (kg)/Carton	12	12			10	10	
	Processing Code	F	F			F	F	

Catch Information (Other Finfish Species)	No. Fish (optional)	Fresh Weight (kg)	No. Fish (optional)	Fresh Weight (kg)	No. Fish (optional)	Fresh Weight (kg)	No. Fish (optional)	Fresh Weight (kg)	No. Fish (optional)	Fresh Weight (kg)	No. Fish (optional)	Fresh Weight (kg)	No. Fish (optional)	Fresh Weight (kg)
Coral Trout (all species)			3	6		90		370		250	1	2		
Cod								5						
Barramundi Cod						10		15		15				
Red Emperor						10		2		5				
Spangled Emperor								10						
Other Emperors														
Maori Wrasse														
Stripey Bass														
other (specify) Mixed Reef						10		5						
other (specify)														

CORAL TROUT INFORMATION	No.	Ave kg	fish/carton	No.	Ave kg	fish/carton	No.	Ave kg	fish/carton	No.	Ave kg	fish/carton	No.	Ave kg	fish/carton	No.	Ave kg	fish/carton
Carton Totals:																		
Plate							25	12	12	15	14	12	3	12	15			
Medium							4	10	10	13	10	10	18	10	11			
Large							1	9	5				1	9.5	6			
Estimate % species split: (number)																		
Common							85			95			75					
Islander							5			5			25					
Leopard							10						5					
Bluespot																		

Did your gear come into contact with or catch any **Wildlife or Protected Species?** (Yes / No' tick box) Y N Y N Y N Y N Y N Y N Y N

Please provide details of the interaction on the Wildlife and Protected Species Details Form at the back of the logbook

Comments _____

I certify that the information I have provided on this form is a true and accurate record. Please provide an estimate of the time taken to complete this form: _____ minutes

Authorised Person/ Master's Printed Name **Fred Mack** Signature **Fred Mack** Date **6 / 7 / 02**

Australian Fisheries Management Authority.
PO Box 7051
Canberra BC ACT 2610

WILDLIFE AND PROTECTED SPECIES FORM – TSF01

Please use one form per shot

Logbook No.

Boat Name	Method <small>(use method code on catch sheet)</small>	Date of Interaction	/	/	Logbook No.
Distinguishing Symbol		Corresponding logbook page no.			
Observer on board (tick Yes/No)					

Great White Shark / Grey Nurse Shark / Whale Shark / Seahorse / Pipefish / Sea Dragon / Seabird / Turtle / Sea Snake / Seal / Dolphin / Whale / Dugong

Species Name <small>Be specific, one line for each individual (refer to list)</small>	Time at which Interaction occurred <small>(24hr)</small>	Latitude/Longitude of interaction		Caught During Fishing Operation <small>(tick one box only)</small>			Hooked or Entangled <small>(tick one box only)</small>		Band or Tag Number	Life Status <small>(tick one box only)</small>				
		dd	mm	ddd	mm	Haul	Set	Other		Hooked	Entangled	Alive	Dead	Injured
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

- Is there anything else that you believe to be important information? (i.e. female, male, adult, juvenile)
- Where was the animal tangled/hooked? (flipper, mouth, wing, entire body, swallowed hook, etc.)
- Where in the gear was the animal tangled/hooked?
- How was the animal released?

I certify the information which I have provided on this form to be a complete and accurate record.

Concession Holder/Authorised Person **Signature and Date**

Concession Holder/Authorised Person **Printed Name**

	/ /

Original Copy – Send to AFMA

Please provide an estimate of the time taken to complete this form min.

Australian Fisheries Management Authority.
PO Box 7051
Canberra BC ACT 2610

WILDLIFE AND PROTECTED SPECIES FORM – TSF01

Please use one form per shot

Logbook No.

Boat Name	Method <small>(use method code on catch sheet)</small>	Date of Interaction	/	/	Logbook No.
Distinguishing Symbol		Corresponding logbook page no.			
Observer on board (tick Yes/No)					

Great White Shark / Grey Nurse Shark / Whale Shark / Seahorse / Pipefish / Sea Dragon / Seabird / Turtle / Sea Snake / Seal / Dolphin / Whale / Dugong

Species Name <small>Be specific, one line for each individual (refer to list)</small>	Time at which Interaction occurred <small>(24hr)</small>	Latitude/Longitude of interaction		Caught During Fishing Operation <small>(tick one box only)</small>			Hooked or Entangled <small>(tick one box only)</small>		Band or Tag Number	Life Status <small>(tick one box only)</small>				
		dd	mm	ddd	mm	Haul	Set	Other		Hooked	Entangled	Alive	Dead	Injured
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

- Is there anything else that you believe to be important information? (i.e. female, male, adult, juvenile)
- Where was the animal tangled/hooked? (flipper, mouth, wing, entire body, swallowed hook, etc.)
- Where in the gear was the animal tangled/hooked?
- How was the animal released?

I certify the information which I have provided on this form to be a complete and accurate record.

Concession Holder/Authorised Person **Signature and Date**

Concession Holder/Authorised Person **Printed Name**

	/ /

Original Copy – Send to AFMA

Please provide an estimate of the time taken to complete this form min.

Wildlife and Protected Species List

Please be as specific as you can with regard to the species identification.

This table is to assist you to record the species name
in the Wildlife and Protected Species Forms at the back of the logbook

Fish Species	
Great White Shark	<i>Carcharodon carcharias</i>
Grey Nurse Shark	<i>Carcharias taurus</i>
Whale Shark	<i>Rhincodon typus</i>
Pipefish, Sea Horses & Sea Dragons	Syngnathids

Non-Fish			
All Seabirds	All Seals	All Whales/Dolphin/Dugong	Marine Reptiles
Albatross	Australian Sea Lion	Dolphin (<i>if species unknown</i>)	Flatback Turtle
Booby	Australian Fur Seal	Killer Whale	Green Turtle
Cormorant	New Zealand Fur Seal	False Killer Whale	Hawksbill Turtle
Frigatebird	Fur Seal (<i>if species unknown</i>)	Humpback Whale	Leatherback Turtle
Gannet	Leopard Seal	Pilot Whale	Loggerhead Turtle
Giant Petrel	Southern Elephant Seal	Sperm Whale	Olive Ridley Turtle
Gull		Southern Right Whale	Turtle (<i>if species unknown</i>)
Mollyhawk		Baleen Whale (<i>if species unknown</i>)	Sea Snake
Mutton Bird		Toothed Whale (<i>if species unknown</i>)	
Noddy		Large Whale (<i>if species unknown</i>)	
Pelican		Small Whale (<i>if species unknown</i>)	
Penguin		Dugong	
Petrel			
Prion			
Shag			
Skua			
Shearwater (Mutton bird)			
Tern			
Tropicbird			
Large Seabird			
Small Seabird			

Common Names for Albatross, Petrels and Other Seabird Species

Great Albatross	Mollyhawks and Sootys	Petrels	Others
Wandering Albatross	Black-browed Albatross	Northern Giant Petrel	Abbot's Booby
Northern Royal Albatross	Campbell Albatross	Southern Giant Petrel	Lesser Noddy
Southern Royal Albatross	Buller's Albatross	White-chinned Petrel	Christmas Island Frigate
Gibson Albatross	Shy Albatross		
Antipodean Albatross	White-capped Albatross		
Tristan Albatross	Salvin's Albatross		
Amsterdam Albatross	Chatham Albatross		
Laysan Albatross	Grey-headed Albatross		
Yellow-nosed	Albatross (Indian)		
Light-mantled Albatross			
Sooty Albatross			

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
MANAGEMENT AND SCIENCE Removing the northern part of the Western Line Closure for Reef-Line Fishery	Agenda Item 4.2 FOR ADVICE

RECOMMENDATIONS

1. That the Finfish RAG **NOTE** previous advice from the FFRAG, Finfish Fishery Working Group (FFWG) and Tropical Rock Lobster Resource Assessment Group (TRLRAG) regarding the outcomes of public consultation on the proposal to remove the Western Line Closure; and
2. That the Finfish RAG **DISCUSS** and **PROVIDE FURTHER ADVICE** on removing the closure in the northern 'top hat' area of the Torres Strait Protected Zone only, for example north of Turnagin Island or Numar Reef including:
 - a) Likely risks to stocks noting fishing would likely target different finfish species, such as barramundi, salmon and jewfish and at this time, AFMA does not have a good understanding on the likely extent of fishing expected;
 - b) possible options for assessing and monitoring those risks; and
 - c) possible options for mitigating those risks in the short to medium term until more information is available to quantify key risks.

KEY ISSUES

1. At its meeting in April 2019 the PZJA agreed to undertake public consultation on the removal of a closure to commercial fishing for finfish (not Spanish mackerel) west of Longitude 142°32'E.
2. Consultation outcomes have been considered by the FFRAG (27-28 November 2019), FFWG (29 November 2019) and TRLRAG (10-11 December 2019). Advice from each advisory committee is provided in the Background section below.
3. Having regard for community views raised during public consultation, Traditional Inhabitant members of the FFWG supported removal of the part of the Western line closure north of Turnagin Island.
4. A key issue raised during public consultation and then considered by the various PZJA advisory committees was the potential impact on tropical rock lobster from increased fishing pressure on coral trout. The waters north of Turnagin Island are not part of the main TRL fishing grounds.
5. Other issues considered by the FFWG and FFRAG relevant to removing the northern part of the closure include:
 - a. How increased fishing pressure on finfish stocks might negatively impact the availability of fish for local kai-kai subsistence fishing through localised depletion and/or reduce catch rates (FFWG and FFRAG). The FFRAG suggested that management measures such as spatial closures could be introduced to minimise the impacts of commercial fishing on traditional fishing (beyond maintaining a high biomass); and
 - b. A lack of understanding on the extent of fishing likely to occur if the closure was removed (FFRAG). The FFRAG advised that there is a clear need to consider what the increase in reef-line fishing effort in the western Torres Strait might look like in

the long term; i.e. how will fishing mortality on the stock change, how many TIB dinghies might fish, how many TIB primary-tender operations might access the fishery and considering what such scenarios may mean in terms of risk to the stock.

6. The FFRAG considered a number of scientific options could potentially be considered to aid understanding the impacts of lifting the closure including (note detailed advice in Background section):
 - a. Ecological research while the closure remains in place with the outcomes from research to inform a decision on opening/maintaining closure. However this would be very challenging and take a long time to yield meaningful results.
 - b. Ecological research with the closure lifted (research occurring alongside commercial fishing operations could inform maintaining the open area of the fishery). Similarly challenging to above.
 - c. Closure could be lifted with no research occurring, fishery-dependent data only could be collected for analysis.
 - i. RAG noted that understanding the risk to the stock would be very challenging as fishery dependent data alone (i.e. logbooks and fish receiver system data) may not be powerful enough.
 - ii. While effort (number of boats entering the fishery) and catch can be monitored, the risks to TRL from trout harvests and the impacts on catch rates for the subsistence users of the stock (from increased commercial take of trout) would not likely be able to be understood from these available data. This is in part due to the difficulties in identifying and measuring the interaction between species, especially noting the variation in TRL abundance year to year.
 - iii. RAG noted mitigation of risk could be achieved by establishing relevant data needs and monitoring requirements to meet these needs. But a relevant management response would need to be developed should monitoring show risk to the stocks was changing; i.e. a policy would be required to describe what levels of catch, changes in effort/participation would cause management to respond.
 - d. An adaptive management approach, where a representative area of the fishery is opened with the response of the area (effort and catch rates) monitored over time. The RAG noted that the benefits of this approach are that potential ecological impacts from this fishing will only apply to a limited area but noted general advice that discerning ecological impacts (e.g. TRL and coral trout interactions) from catch and effort data would be challenging.
7. Noting the advice from Traditional Inhabitant members of the FFWG to open the closure north of Turnagain Island, further FFRAG advice is being sought on the scientific options outlined above or others that members may recommended. Where possible advice is sought on:
 - a. Data needs and monitoring requirements (including fishery dependent and independent, if relevant) to meet those needs;
 - b. Recommended management responses if monitoring showed changing risks to the stock. This would essentially form the basis for a harvest strategy to guide the development of the fishery noting AFMA anticipates difference species will be targeted.
8. Having regard for the objectives of the *Torres Strait Act 1984* (covering sustainability, optimum utilisation and providing economic opportunities), the RAG is specifically asked to consider the risks associated with having interim arrangements to start with whilst a longer-

term strategy is developed. The interim strategy could include data and research requirements to support further increases in catch. An interim strategy, if appropriate, would allow industry the opportunity to commence a level of fishing and may provide an opportunity to understand likely target species and fishing areas.

9. Given the lack of understanding of stocks (species and abundance) however AFMA notes that one possible risk for industry is the over-captalisation. That is, industry may overinvest in their fishing businesses without understanding how many fishing businesses (total catches) the stocks could economically sustain. Secondly, if additional research is required to support development of the Fishery, it is highly likely that external funding beyond AFMA's research funding will be required.

Next steps

10. AFMA is commencing a round of community visits over the coming months and will seek to further understand the nature of fishing planned (species, areas) by industry in the Gudamalagal (top-western) area and whether communities have plans and/or cultural laws to manage interactions between the commercial fishery and traditional fishing. AFMA will also report FFRAG 8 and FFWG (25-26 November 2020 meeting) advice back to communities.
11. Any further RAG recommendations arising from this meeting will be tabled with the FFWG at its meeting scheduled for 25-26 November 2020.
12. The PZJA will consider outcomes of public consultation, together with advice from the RAG and FFWG at meeting early next year.

BACKGROUND

13. A summary of community views and concerns raised during public community visits is at **Attachment A** and the single written submission received (from Cape York Land Council) is at **Attachment B**. Previous FFRAG and FFWG advice on removing the closure is provided in the agenda paper tabled at FFRAG on 27 -28 November 2019 (FFRAG 6) which is available on the PZJA website at: https://www.pzja.gov.au/sites/default/files/ffrag_6_record_27-28_nov_2019.pdf or from AFMA upon request.

FFRAG Advice

FFRAG Meeting 6, 27-28 November 2019, Agenda item 4.1 Western line closure review. Meeting record extract.

FFRAG noted the general outcomes of public consultation on the proposal to remove the 'Western Line Closure' and then considered specific concerns raised by communities. FFRAG advice against each of these concerns is detailed in **Table 4** below.

The RAG noted advice from Traditional Inhabitant Industry Members that:

- many communities were not aware of the closure and for others it has been a long-standing issue to have the closure removed; and
- while some communities raised concerns with the removal of the Western Line Closure, others are very eager to have it removed as a means to provide an important and much needed economic opportunity.

As general advice, the FFRAG noted that the key to understanding the true impacts (or risks to the stock) from removing the closure would be to understand the extent of fishing likely to occur if the closure was removed. The RAG advised that there is a clear need to consider what the increase in reef-line fishing effort in the western Torres Strait might look like in the long term; i.e. how will fishing mortality on the stock change, how many TIB dinghies might fish, how many TIB primary-tender operations might access the fishery and considering what such scenarios may mean in terms of risk to the stock.

Table 4. FFRAG advice regarding concerns raised during public comment on the Western Line Closure review.

<p>The potential for increased fishing pressure on coral trout to negatively affect the abundance (availability) of Tropical Rock Lobster (TRL, kaiar) stocks. Some stakeholders have observed and believe there is a positive relationship between coral trout and TRL abundance (more coral trout = more TRL). It was noted that a different view was held by some who believed coral trout compete with or eat TRL. As a result if coral trout numbers in an area are reduced, TRL numbers will increase.</p>	
FFRAG advice	<p>Given the complexity of trophic interactions (many and varied, for example, direct and indirect impacts on (i) competition for food, (ii) habitat and (iii) predatory-prey interactions), it is extremely difficult to predict and assess potential impacts that fishing one species may have on another. There are studies (to be circulated to FFRAG members) from the Great Barrier Reef and other areas also suggest there are ecological relationships between coral trout and other fish groups including herbivorous fish. Herbivorous fish in turn impact habitats (algae levels) which in turn can impact the abundance on animals that rely on certain habitats (e.g. high algae levels can impact the settlement of shellfish/molluscs which can then be a food source for other animals).</p> <p>To quantify these interactions and then assess possible fishing impacts there are at least two options:</p> <ul style="list-style-type: none"> • Long-term depletion experiments (remove coral trout and monitor TRL numbers). Around 5-10 years of experimentation and observation would be required but may still yield uncertain results; • Ecosystem modelling. An ecosystem model could be used to provide general guidance on possible impacts i.e. hypothesis testing. This information would be generalised. <p>The RAG also noted the suggestion that if inner western communities had opposition to removing the closure due to risks to the TRL stocks the closure might be lifted for Gudumalulgal communities only, noting that Top-Western Communities are very supportive of lifting the closure to pursue economic opportunities.</p>
<p>If the Closure is removed, what impact would it have on the TAC (up or down?)</p>	
FFRAG advice	<p>Coral trout within the Torres Strait is currently assumed to form a single stock. Accordingly, the TAC represents a Total Allowable Catch for the stock irrespective of whether or not the Western Line Closure is in place or not. Removal of the Western Line Closure would not warrant a change to the TAC for the purposes of managing risks to the level of the stock.</p>
<p>Fishing effort may be redistributed across the Fishery. Aside from possible increases in effort in new areas, effort may increase in the eastern part of the Fishery as more fishers take an interest in the Fishery.</p>	
FFRAG advice	<p>As detailed above, the RAG advised that the risk from fishing at the stock level, irrespective of where those catches are taken, is not expected to change if the TAC remains the same or continues to be set on the assumption of a single stock. The RAG did consider that there is risk of localised depletion for reef-associated species such as coral trout. Coral trout have been found to have high site fidelity (meaning they don't</p>

	move far as adults) and monitoring would be required to understand fine scale fishing effort in areas of the fishery over time if understanding localised depletion was a management priority. Science members noted that Vessel Monitoring Systems (VMS) might be a powerful fisheries management tool to help understand this issue.
Increased commercial fishing pressure on finfish stocks in the area of Western Line Closure will negatively impact the availability of fish for local kai-kai.	
FFRAG advice	The RAG noted advice from scientific members that different users of fish stocks (e.g. TIB commercial, sunset, traditional kai-kai fishing) generally have different fishing power. Operators with higher fishing power are generally known to take fish from an area first. It is plausible therefore that if the closure is lifted commercial operators (assuming they are more efficient) may affect kai-kai fishing catch rates overtime. It was suggested that management measures could be introduced to minimise the impacts of commercial fishing on traditional fishing (beyond mainlining a high biomass) if that was a management priority (eg spatial closures).

The FFRAG considered that, aside from the status quo with the closure in place, a number of scientific options could potentially be considered to aid understanding the impacts of lifting the closure including:

1. Ecological research while the closure remains in place with the outcomes from research to inform a decision on opening/maintaining closure.
 - RAG noted the above advice that ecological research is challenging, and that research into understanding the impacts occurring takes a long time and will be challenging to yield a meaningful result and to understand risks to the stock.
2. Ecological research with the closure lifted (research occurring alongside commercial fishing operations could inform maintaining the open area of the fishery)
 - RAG noted similar advice as per point 1 above.
3. Closure could be lifted with no research occurring, fishery-dependent data only could be collected for analysis.
 - RAG noted that understanding the risk to the stock would be very challenging as fishery dependent data alone (i.e. logbooks and fish receiver system data) may not be powerful enough.
 - While effort (number of boats entering the fishery) and catch can be monitored, the risks to TRL from trout harvests and the impacts on catch rates for the subsistence users of the stock (from increased commercial take of trout) would not likely be able to be understood from these available data. This is in part due to the difficulties in identifying and measuring the interaction between species, especially noting the variation in TRL abundance year to year.
 - RAG noted mitigation of risk could be achieved by establishing relevant data needs and monitoring requirements to meet these needs. But a relevant management response would need to be developed should monitoring show risk to the stocks was changing; i.e. a policy would be required to describe what levels of catch, changes in effort/participation would cause management to respond.
4. An adaptive management approach, where a representative area of the fishery is opened with the response of the area (effort and catch rates) monitored over time.
 - The RAG noted that the benefits of this approach are that potential ecological impacts from this fishing will only apply to a limited area but noted general

advice that discerning ecological impacts (e.g. TRL and coral trout interactions) from catch and effort data would be challenging.

FFWG Advice

Meeting 29 November 2019. Agenda item 5 Western line closure. Meeting record extract

The FFWG noted the outcomes of public consultation on the potential removal of the Western Line Closure (the Closure) as detailed in agenda paper. The FFWG noted that there is varied support for the removal across communities within the area of the Western Line closure and that Eastern communities largely reserved commenting on the proposal (noting it was a matter for communities affected/within the closure).

Generally communities in the Gudamalagal (top-western) area support the removal of the closure while communities in the Kaiwalagalgal (inner-western) area of the closure do not support its removal due to concerns on the potential ecological and technical interactions with the Tropical Rock Lobster (TRL) Fishery and traditional fishing. Other concerns raised more broadly were in relation to how potential changes in fishing effort (total levels and distribution) might impact risk of localised depletion, kai-kai (traditional/subsistence fishing) fishing catch rates and the TAC for the stock.

The FFWG noted advice from the FFRAG that:

- research on ecological interactions between coral trout and TRL (e.g. to understand the risk to the TRL stock from increased trout harvest) would be difficult and costly to perform successfully and that analysing fishery dependent catch data would also yield little understanding about the effect of increased trout harvests on TRL or kai-kai finfish catch rates over time;
- an adaptive management experiment could be performed by opening a selected area of the fishery and monitoring the response of TRL and trout over time however the likelihood of detecting an impact would be low;
- coral trout within the Torres Strait is currently assumed to form a single stock. Accordingly, the TAC represents a Total Allowable Catch for the stock irrespective of whether or not the Western Line Closure is in place or not. Removal of the Western Line Closure would not warrant a change to the TAC for the purposes of managing risks to the level of the stock;
- there is risk of localised depletion for reef-associated species such as coral trout. Coral trout have been found to have high site fidelity (meaning they don't move far as adults) and monitoring would be required to understand fine scale fishing effort in areas of the fishery over time if understanding localised depletion was a management priority;

The FFWG noted advice from the Traditional Inhabitant members and observers that Gudumalualgal communities respected the views held by inner-western communities and are only seeking access to finfish in waters north of Turnagin Island. Unlike inner-western communities who participate the TRL Fishery, Gudumalualgal communities have little employment opportunities, including fisheries (there is limited TRL fishing around Gudumalualgal communities). Within their waters, Gudumalualgal communities wish to fish for other-reef line species such as barramundi, salmon and jewfish, not coral trout.

Having regard for community views Traditional Inhabitant members and observers supported the removal of the part of the Western Line closure north of Turnagin Island.

The AFMA member also supported this approach noting both advice from communities and advice from the FFRA. The AFMA member noted however that further advice on concerns raised during public consultation would be sought from the TRL Resource Assessment Group in December. This advice would be shared with the FFWG.

The TSRA suggested that the Western Line Closure Review could be progressed at the Torres Strait Fisheries Summit planned for April 2020, which would enable a discussion to be had by all stakeholders and attempt to reach some consensus from industry about maintaining or removing the closure.

TRL RAG Advice

Meeting 27th, 10-11 December 2019. Agenda item 8. TRL interactions with coral trout. Meeting record extract.

1. The RAG noted that when discussing the proposed removal of the Torres Strait Finfish Fishery's Western Line Closure (WLC) during community visits in April/May 2019, communities expressed varied views in relation to the possible impacts of the removal of the WLC, particularly in relation to impacts on the TRL stock.
2. Concerns expressed included that increases in coral trout harvests may have adverse impacts on the sustainability of the TRL stock. This concern is based on anecdotal reports of shared habitat and industry observations of interactions between the two species.
3. Other comments from an eastern communities indicated that potential increases in harvests of coral trout would be beneficial to the TRL Fishery as it would alleviate coral trout predation on TRL and increase available habitat for TRL. A traditional inhabitant member added that more recently, Maluiligal communities have expressed a desire to retain the WLC. This is due to diver safety concerns in shallow water where the risk of shark interactions is increased after line fishing has occurred in the same area. The RAG noted that Maluiligal communities are supportive of the desire for Gudumalulgal communities to have the closure removed north of Turnagain Island where the risk of diver safety is reduced as TRL diving is less prevalent.
4. The RAG noted that both the Finfish RAG and Finfish Working Group considered this issue at their recent meetings (27-29 November 2019) and advised that given the complexity of trophic interactions (many and varied, for example, direct and indirect impacts on (i) competition for food, (ii) habitat and (iii) predatory-prey interactions), it is extremely difficult to predict and assess potential impacts that fishing one species may have on another.
5. A scientific member agreed that trophic interactions are difficult to quantify however technical interactions are measurable (e.g. between divers and sharks, between vessels or between fishing gear types).
6. **Given the anecdotal reports above, the RAG advised that specifically, the potential risks of increased diver/shark interactions resulting from berley and baiting for commercial reef line fishing should be considered when assessing the removal of the WLC.**
7. The RAG also noted that technical interactions of line fishing on diving is likely to be less important for Gudumalulgal communities where diving is less prevalent due to turbid, shallow water and where line fishing is more favourable.

ATTACHMENTS

4.2a Letter to stakeholders on harvest strategies and western line closure proposal.

4.2b Written submission received from Cape York Land Council.

4.2c Summary of community views and concerns raised during community visits to discuss the proposal to remove the Western Line Closure.

4.2d Report on all community visits.



8 April 2019

Dear Torres Strait licence holder

I am pleased to advise that the Protected Zone Joint Authority (PZJA) agreed at its meeting on 1 April 2019 to release draft harvest strategies for the Torres Strait Protected Zone Tropical Rock Lobster (TRL) and Beche-de-mer (BDM) Fisheries for public comment. The PZJA also agreed to seek stakeholder views on removing the 'western line closure' in the Torres Strait Finfish Fishery.

The PZJA agreed to commence a review of how Developmental Permits are used for training purposes in all Torres Strait Fisheries. The TSRA will lead the review and it is expected this will be concluded by around September 2019. The PZJA agreed it will not consider any further applications for training under Developmental Permits until new arrangements are established, following the review. It is expected the review will lead to the creation of detailed criteria, against which any future applications for Developmental Permits will be assessed. The PZJA continues to acknowledge and support the aspirations of Traditional Inhabitants for 100 per cent ownership of access to commercial fisheries, and wants to be confident that the Developmental Permit arrangements are contributing to this goal. More details on the PZJA decision is enclosed.

Copies of the draft harvest strategies together with frequently asked questions (FAQs) about harvest strategies in general and brief overviews of each are enclosed. Also enclosed is information concerning the removal of the western line closure in the Torres Strait Finfish Fishery. Further copies of these documents may also be obtained from the PZJA website at www.pzja.gov.au or by contacting the AFMA Torres Strait Office on 07 4069 1990 or by email to FisheriesTI@afma.gov.au.

The PZJA looks forward to hearing from stakeholders on these proposed management initiatives. There are a number of ways you can provide your views to the PZJA. These are described below.

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

Public meetings

Subject to approval from Prescribed Body Corporate (PBC) Chairpersons, AFMA is planning to attend each Torres Strait and Northern Peninsula community to explain the draft harvest strategies and the proposal to remove the western line closure. A further meeting will be held in Cairns, subject to stakeholder interest, at a date and venue to be determined. All meetings will be concluded by 31 May 2019.

AFMA has written to all PBC Chairpersons to arrange these community meetings. Final meeting dates and locations will be advertised on the PZJA website and within each community as soon as details are finalised. If you are interested in meeting with AFMA in Cairns please register your interest with Georgia Langdon by phone on 07 4069 1990 or email at georgia.langdon@afma.gov.au.

Make a written submission

All written submissions need to be submitted to AFMA by close of business on 31 May 2019. Submissions can be sent to:

AFMA
Torres Strait Office
PO Box 376
Thursday Island, QLD, 4875
Australia

Or by fax to 07 4069 1277

Or by email to FisheriesTI@afma.gov.au

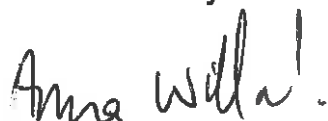
Please note that **all written submissions will be made public** unless confidentiality is requested.

Phone AFMA

If you wish to provide your views on the phone, please call the AFMA Torres Strait Office on 07 4069 1990.

Should you wish to discuss any of the matters contained in this letter, please contact the AFMA Torres Strait Office on 07 4069 1990 or by email to FisheriesTI@afma.gov.au.

Yours sincerely



Anna Willock
Executive Manager, Fisheries

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Enclosed documents

1. PZJA media release.
2. Frequently asked questions (FAQs) about harvest strategies
3. An overview, and copy of, the draft harvest strategy for the Torres Strait Tropical Rock Lobster Fishery
4. An overview, and copy of, the draft harvest strategy for the Torres Strait Beche-de-mer Fishery
5. Information concerning the removal of the western line closure in the Torres Strait Finfish Fishery

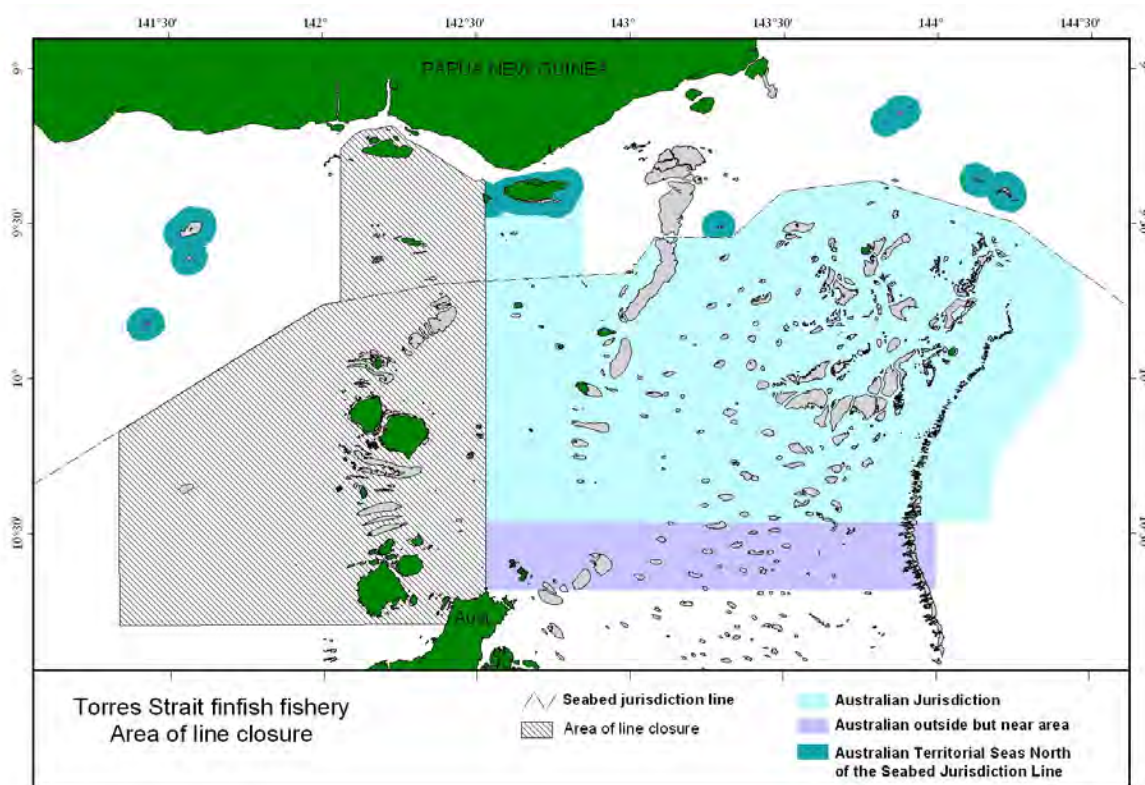
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WESTERN LINE CLOSURE FOR FINFISH An Overview



Commercial fishing for reef-line finfish species (e.g. coral trout, trevallies and emperors) is banned in the area of the Torres Strait Finfish Fishery west of 142° 32'E. This is referred to as the western line closure (see map above). The closure does not apply to mackerel commercial fishing or traditional fishing.

The closure affects all Traditional Inhabitant Boat licenced fishers who fish commercially for finfish species under a reef-line (LN) endorsement. Western communities including Boigu, the western half of Dauan, Mabuaiag, Badu, Moa, Keriri, Ngurupai, Muralag and Waiben lie within the closure.

The closure does not serve a purpose in managing the fishery and reflects an historic boundary that was carried over when the Fishery was transferred to a single jurisdiction under the PZJA.

What will happen if the closure is removed?

If the closure is removed the area of the Fishery available for commercial reef-line fishers will increase.

AFMA will continue to monitor catches and participation in the fishery through the Fish Receiver System and will work with the PZJA Finfish Resource Assessment Group and Working Group to monitor how the fishery is performing.



Finfish Resource Assessment Group and Working Group advice

AFMA has gathered advice on potentially removing the western line closure from PZJA Finfish Resource Assessment Group and the PZJA Finfish Working Group. Both advisory groups support the removal of the closure.

Draft regulation to remove the closure

If communities support removing the closure the PZJA would need to make a new Fisheries Management Instrument.

In making a new instrument for the fishery, the current mesh net restriction on Australian Traditional Inhabitants engaged in traditional fishing for finfish will be removed to reflect that the PZJA's jurisdiction does not extend to traditional fishing.

If you have any questions contact AFMA on (07) 4069 1990 or via email FisheriesTI@afma.gov.au



Cape York Land Council Aboriginal Corporation
ICN 1163 | ABN 22 965 382 705

7 June 2019

AFMA
Torres Strait Office
PO Box 376
Thursday Island QLD 4875

Email: FisheriesTI@afma.gov.au

Dear AFMA

Re: TSPZ Fisheries Management

Cape York Land Council (CYLC) functions as the Native Title Representative Body (NTRB) for the Cape York region. In that NTRB role we fulfil statutory functions under the *Native Title Act 1993* (Cth). In our broader Land Council role we support, protect and promote Cape York Aboriginal peoples' interests in land and sea to positively affect their social, economic, cultural and environmental circumstances and aspirations. In this capacity CYLC welcomes the opportunity to comment on AFMA's draft harvest strategies for the Torres Strait Protected Zone (TSPZ) Tropical Rock Lobster (TRL) and proposed removal of the "western line closure" in the TSPZ Finfish Fishery.

CYLC has an interest in management of Torres Strait fisheries for a number of reasons including that:

- we support the aspirations of Torres Strait Islanders for greater control over their traditional resources and their participation in mainstream commercial activity;
- the Cape York region adjoins Torres Strait and management of Torres Strait fisheries may set precedents for management of Cape York fisheries;
- Cape York Aboriginal people hold similar aspirations for greater control over their traditional resources and participation in mainstream commercial activity to support their social and economic development;
- many Cape York communities have many families with strong traditional and historical ties to Torres Strait communities and families;
- southern sections of TSPZ fisheries extend into waters that are the traditional country of Cape York Aboriginal people, and this southern TSPZ area is within the area of a CYLC native title sea claim, so Cape York Aboriginal people have plausible, and soon to be determined, rights to fisheries resources in this area;
- prospective Aboriginal holders of native title sea rights and interests will include some people who are currently eligible for access to TSPZ commercial fishing rights, but far from all of these prospective native title holders will have access to the TSPZ fishing rights in their traditional waters. Conversely, the current TSPZ Indigenous commercial fisher arrangements create rights for Indigenous people who will not be identified as native title holders through Cape York sea claims;
- AFMA must review the current TSPZ fisheries arrangements to ensure Cape York Aboriginal native title holders have a recognised interest in and access to the fisheries for those sea

areas where they hold or will hold native title, and that agreements are in place between Cape York Aboriginal native title holders and other parties who access fisheries in the seas where Cape York Aboriginal people hold native title rights.

TRL Fishery

CYLC is concerned that the objectives of the draft TRL harvest strategy, and the decision rules designed to achieve these objectives, may result in unsustainable levels of harvest that will cause a long term decline in TRL populations.

Because the TSPZ TRL fishery extends into the traditional waters of Cape York Aboriginal people, and they have aspirations to commercially harvest TRL, Cape York Aboriginal people have a strong interest in the sustainability of the TRL populations and submit that:

- the objectives of the draft TRL Harvest Strategy should be amended to seek to return the stock to 90 per cent of the original unfished size of the TRL spawning stock in 1973, and to maintain TRL stock above a lower limit of at least 50 per cent of the original unfished size; and
- Decision Rule 1 should set a maximum catch limit of 250 tonnes per season so that the above TRL population objectives may be achieved.

CYLC also supports the aspirations of traditional inhabitants to own 100 per cent of the Torres Strait TRL Total Allowable Catch, as outlined in the 2014 Roadmap Agreement signed by TSRA, and that this target is achieved as soon as possible. AFMA should consider how the harvest strategy could be utilised to accelerate the transition to 100 per cent ownership of the TAC by traditional inhabitants.

CYLC also advocates that a native title corporation should hold, manage and allocate the Total Allowable Catch for TRL and other species for the Traditional Inhabitants Boat sector. The right of traditional inhabitants to take TRL for commercial purposes is partly based on their native title rights, so the Malu Lamar (Torres Strait Islander) Corporation, as the Registered Native Title Body Corporate (RNTBC), should be the management entity because it holds and manages Torres Strait Islander native title rights and interests.

CYLC is interested in management arrangements for the Torres Strait TRL fishery because similar arrangements should also apply to Queensland's east coast TRL fishery which operates almost exclusively on Cape York's east coast north of Cape Melville. However, unlike the Torres Strait TRL fishery, AFMA and other fisheries regulators responsible for Cape York waters have not established a TRL fishery management plan that allocates a Total Allowable Catch quota to the Cape York Traditional Inhabitants Boat sector. Consistent with the transition to 100 per cent ownership of the TSPZ TRL Total Allowable Catch quota by traditional inhabitants, the Cape York TRL Total Allowable Catch quota should be 100 per cent owned by Cape York traditional owners.

If such an arrangement existed for Cape York it would provide desperately needed opportunities for Aboriginal people to participate in this commercial fishery in their traditional waters. In the absence of such an arrangement the allocation of Cape York's allowable catch is effectively limited to large non-Indigenous fishing companies and Cape York Aboriginal people are effectively excluded.

Given that CYLC has registered native title claims over northern Cape York seas, and further sea claims will be lodged in the near future, AFMA must recognise that it must start working with other fisheries regulators to develop a Cape York TRL fishery management plan that reserves 100% of the Total Allowable Catch quota for Cape York Aboriginal people. CYLC requests that AFMA and other fisheries regulators meet with CYLC as soon as possible to discuss how to progress this important matter.

Western line closure for finfish

CYLC is very concerned about the proposed removal of the western line closure so that commercial line fishing may be undertaken for finfish species in western Torres Strait waters. We note comments in AFMA's Discussion Paper that the existing closure is based on a historic management boundary, and not a specific management need for the fishery. However, CYLC is concerned about widespread and consistent anecdotal evidence that TRL populations, and therefore the TRL commercial fishery, are negatively affected by the introduction of commercial line fishing.

Because of the possible risk to the TRL commercial fishery, the importance of this fishery to Traditional Inhabitant fishers, and because the TSPZ western fin fishery extends into the traditional waters of Cape York Aboriginal people, CYLC considers that more research and further consultation must be done before the closure can be removed to clearly ascertain and settle the current questions from fishers about the relationship between commercial line finfishing and TRL populations. CYLC submits that the precautionary principle must be applied in this situation and that the western line closure for finfish remain in place.

CYLC supports that access to the commercial line fishery, within the existing open area, is limited to Traditional Inhabitants because this arrangement makes an important contribution to Indigenous employment and economic development opportunities. However, as proposed by CYLC for the TRL fishery and other fisheries, the Total Allowable Catch for the finfish line fishery should be held, managed and allocated by the Malu Lamar (Torres Strait Islander) Corporation. If this was the arrangement then CYLC would also support the participation of non-Traditional Inhabitant fishers in the fishery through leasing of a temporary licence from Malu Lamar because the benefits from this arrangement would be redistributed to Malu Lamar's native title holder members. This will not be the case if the TSRA continues to manage licences for the Total Allowable Catch for the Traditional Inhabitant Boat sector.

Issues with TSPZ fisheries management plans

As outlined above, CYLC supports that AFMA's TSPZ management plans provide greater commercial opportunities for Torres Strait Islander fishers in Torres Strait Islanders' traditional waters through the allocation of 100 per cent of total allowable catches to traditional inhabitants and the management of fishing allocations by the Malu Lamar RNTBC.

However, CYLC is concerned that management plans for TRL, finfish and other species provide rights for non-traditional owners in the traditional waters of Cape York Aboriginal people without their consent. This issue will become more critical as Cape York native title sea claims are determined and confirm the rights of Cape York Aboriginal people in these waters. AFMA must commence a process immediately to establish agreements between the traditional owners of these claimed waters and the parties who are accessing the fisheries in these waters.

Attachment 1 shows where native title has been determined to exist in Torres Strait, and Attachment 2 shows where native title has been claimed in Cape York seas. AFMA fisheries management plans must be more cognizant of these legally recognised rights and interests of native title holders and plans amended accordingly and agreements negotiated where necessary.

This issue would be partially resolved if AFMA and other fisheries regulator relevant to Cape York seas prepared fisheries management plans for a range of Cape York commercial species, whereby the Cape York fisheries management plans provided that:

- 100 per cent of the Total Allowable Catch is allocated to the Traditional Inhabitants Boat sector for each Cape York fishery;
- the Total Allowable Catch for the Traditional Inhabitants Boat sector is held, managed and allocated by the relevant RNTBC. For example, for waters within the amalgamated Cape York Aboriginal people's native title sea claim the relevant RNTBCs will be the Ipima Ikaya

Aboriginal Corporation RNTBC and the Kaurareg Native Title Aboriginal Corporation RNTBC. Further south, the Kuuku Ya'u Aboriginal Corporation RNTBC should hold and manage Total Allowable Catches for the waters where it holds native title. As other Cape York native title sea claims are lodged and determined the ensuing RNTBC should hold and manage fishing allocations for their relevant waters;

- for Cape York waters where a native title claim has not been lodged or determined, the CYLC has interim responsibility to hold, manage and allocate licences to the Traditional Inhabitants Boat sector, and to hold benefits from the allocation of licences pending transfer to the RNTBC upon establishment;
- eligibility for a Traditional Inhabitants Boat licence is restricted to the Aboriginal Traditional Owners of those waters;
- if the Total Allowable Catch has not been fully allocated to Traditional Owners, and no further expressions of interest are received from Traditional Owners, then non-Traditional Inhabitant fishers may lease a temporary licence from the RNTBC with the consent of the Traditional Owners;
- Traditional Owners are identified by the RNTBC for determined waters, and the TOs are identified by CYLC anthropology processes for claimed and unclaimed waters; and
- the RNTBC distributes benefits from the allocation of fisheries licences to the native title holder members of the RNTBC.

By implementing these proposed arrangements AFMA would make a significant contribution to the participation of Cape York Aboriginal people in mainstream economic activity, and help close the gap on Aboriginal socio-economic disadvantage.

CYLC requests that AFMA makes arrangements to meet with CYLC to discuss the matters raised in this submission with a view to progressing these proposals.

In the meantime, if you wish to discuss any matter raised in this submission please do not hesitate to contact me.

Yours sincerely



Richie Ah Mat
Chair
Cape York Land Council

ATTACHMENT 1



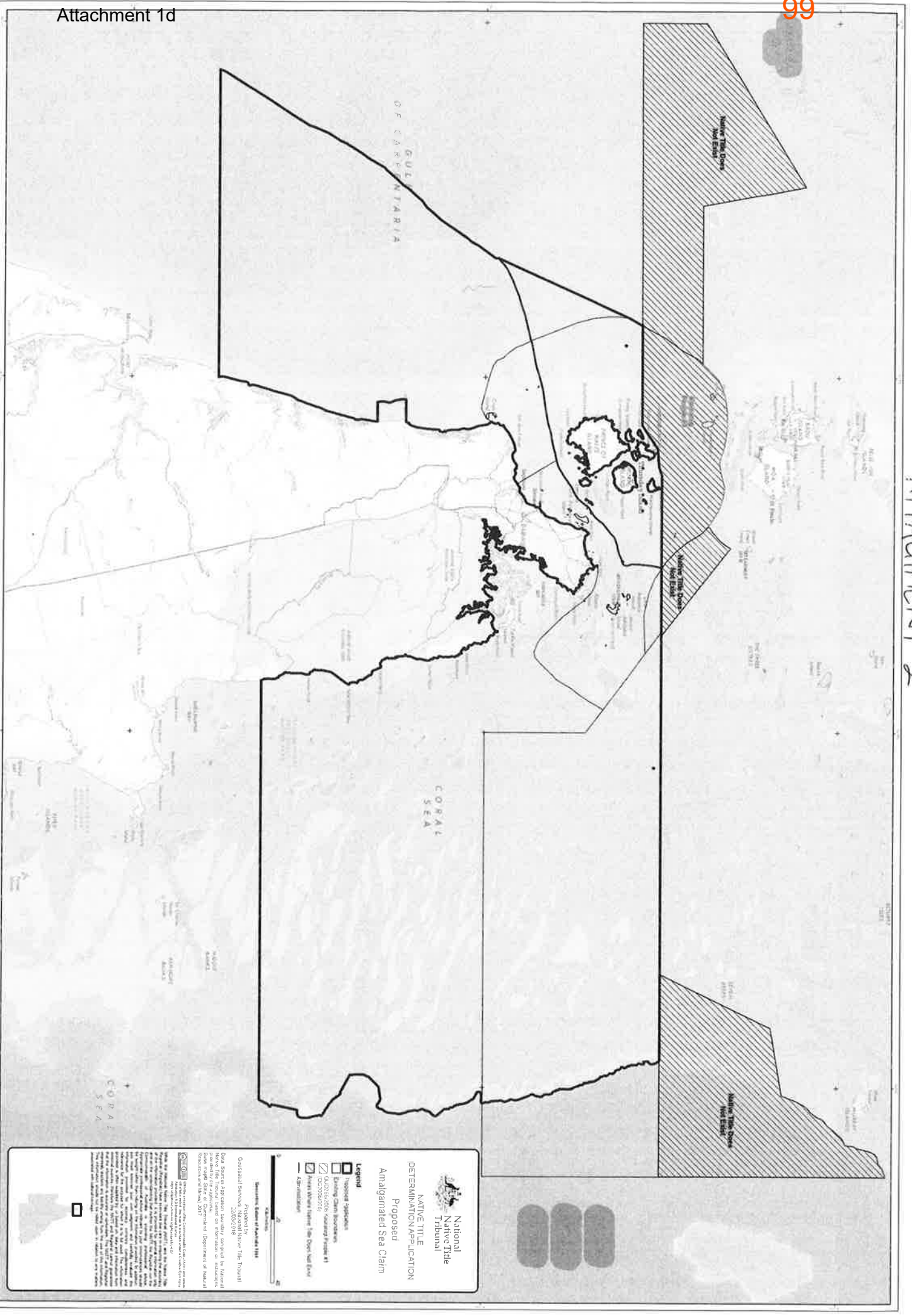


Figure 10: Gullntaria of Carrentaria, Native Title Does Not Exist, 2019, Data Produced from the Department of Natural Resources and Environment, 2019, Data Produced from the Department of Natural Resources and Environment, 2019, Data Produced from the Department of Natural Resources and Environment, 2019

Summary of community views and concerns raised during community visits to discuss the proposal to remove the Western Line Closure.

Community	Date of visit	Summary of views on Western Line closure review
Masig (Yorke)	8-Apr	Concerns with how removing the closure will impact on the distribution of sunset leases.
Erub (Darnley)	8-9 April	Not formally supported as the proposal does not directly apply to the Erub community however general support expressed for the western communities to remove the closure if they wish. General concern with how removing the closure may change where fishing effort is concentrated.
Boigu	17-Apr	Very supportive of the proposal to remove the closure and to open up access to the fishery for the Boigu community.
Poruma (Coconut)	11-12 April	Limited interest in proposal as very little commercial finfish fishing occurs in Poruma. Concerns with how removal of the closure may impact the finfish TAC.
Badu	15-16 April	Concern that removing the closure will impact the sustainability of TRL stocks. Proposal to remove the closure not supported by Malu Lamar nor a number of Badu fishers.
Ugar (Stephen)	12-Apr	Community members withheld from making comment on proposal as not directly relevant to Ugar waters. Some concern that removing closure will result in more western community's access key eastern fishing grounds. Supportive of spatial controls.
Saibai	1-May	Generally supported.
Warraber (Sue)	11-Apr	No concerns raised.
Mer (Murray)	18-Apr	Community members withheld from making comment on proposal as not directly relevant to Meriam waters. General comments that more coral trout fishing is desired to alleviate natural trout predation on TRL. Anecdotes that the more coral trout is fished, the more habitat is available for TRL.
New Mapoon (NPA)	9-May	No formally expressed support or concerns raised.
Injinoo (NPA)	10-May	No formal support or concerns raised.
Thursday Island (Torres Shire)	20-May	A number of concerns raised regarding the proposal to remove the closure: - Negative impact on TRL - Negative impact on availability of coral trout and ability to fish for subsistence (kai kai).
Mabuiag	21-22 May	Generally supported.



Australian Government

Australian Fisheries Management Authority

Torres Strait Fisheries Community Visits Report

April - May 2019

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Glossary

Acronym	Definition
AFMA	Australian Fisheries Management Authority
BDM	Beche-de-mer
CDR	Catch Disposal Record
CPUE	Catch Per Unit Effort
CSIRO	Commonwealth Scientific and Industrial Research Organisation
FRAG	Finfish Resource Assessment Group
FRS	Fish Receiver System
FWG	Finfish Working Group
HCWG	Hand Collectables Working Group
NPA	Northern Peninsula Area
PBC	Prescribed Body Corporate
PZJA	Protected Zone Joint Authority
TAC	Total Allowable Catch
TDB02	The catch disposal record book
TIB	Traditional Inhabitant Boat
TRL	Tropical Rock Lobster
TRL RAG	Tropical Rock Lobster Resource Assessment Group
TRL WG	Tropical Rock Lobster Working Group
TSIRC	Torres Strait Island Regional Council
TSPZ	Torres Strait Protected Zone
TSRA	Torres Strait Regional Authority
TSSAC	Torres Strait Scientific Advisory Committee
TVH	Transferable Vessel Holder
WLC	Western Line Closure

Executive Summary

Between 8 April and 22 May 2019, AFMA undertook a round of visits to communities across the Torres Strait and Northern Peninsula Area to meet with interested stakeholders and community members and discuss a range of issues relating to Torres Strait fisheries. The purpose of the visits was to:

- provide a follow up education and awareness program in support of the newly implemented Fish Receiver System (FRS). Prior to implementation on 1 December 2017, AFMA had been working with fishers and industry members to rollout the new mandatory reporting system and acknowledged that a secondary round of community meetings was required to follow up with industry and identify any issues or barriers to adoption that users were experiencing;
- report back to industry on how the FRS had been working and what data was being reported;
- consult on three key fisheries management issues, specifically the draft Tropical Rock Lobster (TRL) harvest strategy, the draft Beche-de-mer (BDM) harvest strategy and a proposal to remove the Western Line Closure within the Finfish Fishery.

Familiarisation with the FRS varied greatly among communities depending on the level of active fishing occurring at each island/community. The summaries of what data had been reported in each fishery and from which areas was consistently well received and generated good discussions among communities about the level of fishing across the Torres Strait. Many were impressed with the vast improvements in catch and effort reporting coverage. Most attendees gained a good understanding of how important the provision of data is, and how that data is used to inform management decisions across Torres Strait fisheries.

These messages then supported following discussions about harvest strategies. Although the term 'harvest strategy' was unfamiliar for many, the link between data provision and how a harvest strategy requires that data to guide management decisions (i.e. setting a total allowable catch) was evident. Most communities expressed general support for both the draft TRL and BDM harvest strategies with no significant concerns or comments. Badu was the only community that expressed strong concerns about the BDM harvest strategy, highlighting that the current management arrangements in the BDM Fishery do not necessarily support growth of the fishery/industry.

Views on the Western Line Closure proposal varied, particularly between island clusters. Generally, Kemer Kemer Meriam communities abstained from providing comment on the proposal but expressed support for those communities that would be impacted by the proposal (e.g. Gudumalulgal, Maluialgal and Kaiwalagal). Gudumalulgal communities expressed a strong desire to remove the closure to enable fishers from those communities to have similar opportunities (e.g. to commercially fish for reef line species) as those further east. Kulkalgal communities expressed similar views. Contrastingly, communities within Kaiwalagal and Maluialgal expressed different concerns regarding the potential impacts of the proposal on the TRL stock should reef line species be commercially fished, or the ability to then fish for reef line species traditionally or for kai kai.

In addition, each community was advised of the public call for comments concerning the draft TRL and BDM harvest strategies and Western Line Closure proposal and the means to make a submission.

AFMA staff were accompanied by Protected Zone Joint Authority Traditional Inhabitant members to a number community visits. The involvement of consultative forum members was very valuable, not only in generating engagement within communities but in communicating some of the more complex issues.

This report summarises the discussions and views expressed at each community meeting. At the time of writing, community consultations had not taken place at Iama, St Paul's, Kubin village or Dauan due to a lack of availability in the period visits were conducted.

Summary of Community Views

Table 1. Summary of views by community on each key consulted.

Community	TRL harvest strategy	BDM harvest strategy	Western Line Closure	Other issues
Masig (Yorke)	No concerns raised	No concerns raised	Concerns with how removing the closure will impact on the distribution of sunset leases.	Advice sought on obtaining a TIB licence in the absence of owning a boat Concerns with the processing for achieving sign-off on Traditional Inhabitant ID forms Request that the PBC Chair should be a signatory to the ID forms instead of the Mayor
Erub (Darnley)	General support	General support	Not formally supported as the proposal does not directly apply to the Erub community however general support expressed for the western communities to remove the closure if they wish. General concern with how removing the closure may change where fishing effort is concentrated.	
Boigu	General support	General support, with some concern that additional restrictions (i.e. minimum size limits) may cause the BDM Fishery to be economically unviable.	Very supportive of the proposal to remove the closure and to open up access to the fishery for the Boigu community.	
Poruma (Coconut)	No concerns raised	No concerns raised	Limited interest in proposal as very little commercial finfish fishing occurs in Poruma. Concerns with how removal of the closure may impact the finfish TAC.	Number of questions regarding the TRL Management Plan
Badu	Not supported by Malu Lamar. Concern that HS should be designed for full time operators only.	Not supported by Malu Lamar.	Concern that removing the closure will impact the sustainability of TRL stocks. Proposal to remove the closure not supported by Malu Lamar nor a number of Badu fishers.	A range of other issues were raised relating to management arrangements in the BDM Fishery, including the prohibition on hookah and the 7m boat length restriction.

Community	TRL harvest strategy	BDM harvest strategy	Western Line Closure	Other issues
	No concerns raised by other attendees.		Outside of the meeting, some fishers expressed support to remove the closure.	
Ugar (Stephen)	No concerns raised.	No concerns raised however strong desire for traditional knowledge to be incorporated.	Community members withheld from making comment on proposal as not directly relevant to Ugar waters. Some concern that removing closure will result in more western community's access key eastern fishing grounds. Supportive of spatial controls.	Concern that the use of hookah in the TRL Fishery is unfairly impacting the free-diving sector. Suggestion for a cap to be implemented within the TIB TRL catch share to limit hookah catches.
Saibai	Not discussed.	Not discussed.	Generally supported.	
Warraber (Sue)	No concerns raised.	No concerns raised.	No concerns raised.	Concern that inner island fishers have a disproportionate influence on fisheries management processes over outer islands.
Mer (Murray)	No concerns raised.	Supported in recognition of how the HS guides re-opening of closed species (e.g. black teatfish)	Community members withheld from making comment on proposal as not directly relevant to Meriam waters. General comments that more coral trout fishing is desired to alleviate natural trout predation on TRL. Anecdotes that the more coral trout is fished, the more habitat is available for TRL.	Strong desire for a licensing review to implement area controls on licencing conditions (e.g. to prohibit non Meriam fishers fishing in Meriam waters). Concerns raised regarding the inability for the TIB sector to fill the finfish TACs and the desire to establish a program that aims to upskill TIB operators.
New Mapoon (NPA)	No concerns raised.	No concerns raised.	No formally expressed support or concerns raised.	Concern with the use of hookah on the tops of reefs.
Injinoo (NPA)	No concerns raised.	No concerns raised.	No formal support or concerns raised.	
Thursday Island (Torres Shire)	Not discussed at the request of attendees.	Not discussed noting that the BDM HS is not a high priority for stakeholders.	A number of concerns raised regarding the proposal to remove the closure: <ul style="list-style-type: none"> - Negative impact on TRL - Negative impact on availability of coral trout and ability to fish for subsistence (kai kai) 	Concerns with how the TSSAC identifies research priorities in the Torres Strait.
Mabuiag	No concerns raised.	Not discussed at the request of attendees noting that the community does not fish for beche-de-mer.	Generally supported.	

Masig (Yorke) Community

Date	8 April 2019
AFMA staff	Georgia Langdon and Natalie Couchman
Traditional Inhabitant Members	Hilda Mosby, Kulkalgal – FRAG Paul Lowatta, Kulkalgal – FWG
Attendance List	Refer to Table 2

Fish Receiver System

1. A number of attendees were not familiar with the FRS and so the delivery of information was simplified and messages about why AFMA collects data, how that data is used, and how fishers and fish receivers contribute to the overall process were reinforced.
2. Attendees were very interested in the data summaries for each fishery and reported that there is more TRL taken in the eastern areas than was represented in the data summary. It was noted that more than 50 per cent of voluntary location data is not reported on CDRs. Contrastingly, attendees agreed that the finfish data summary seemed more accurate. Others made comments in the margins of the meeting indicating that the catch of Prickly Redfish is under-reported.
3. Fishers acknowledged that if they want to be better represented in the data then they need to be providing the voluntary location data.
4. Some attendees suggested an option be developed to electronically submit CDRs as the post is deemed too slow and administratively onerous. AFMA advised that scanned copies or photos of CDRs are able to be submitted if they are clear and legible, and if that is the preference of the fish receiver, noting however that the AFMA does not have established systems in place to do this as the default at this stage. It was also noted that the original white copy is still required to be submitted to AFMA. One attendee recalled an earlier mention that the TSRA perhaps has scope to facilitate electronic reporting services through iPads.

ACTION ITEM – AFMA to follow up with TSRA regarding the status of proposed iPads for electronic reporting.

5. Some attendees suggested one option to improve the accuracy and completeness of data, would be by AFMA employing a person in each community to complete CDRs for all fishers in that community. While this is not within the remit of AFMA's role, attendees were informed that the FRS is flexible in that it could accommodate communities nominating a central fish receiver (e.g. community freezer) to weigh and record all catch landed in a community.
6. Some fishers sought clarity on the three day submission requirement for CDRs. There were some concerns that the three day timeframe is not workable if TRL are held in cages for up to two weeks after being caught and are not sold until sometime later. It was clarified that the submission of the data must be within three days of weighing and recording the data which must be done as soon as fish are brought to land (i.e. landing), and not within three days of catching the product. This was well understood.

Harvest Strategies

7. Many attendees were not familiar with or had a good understanding of current Torres Strait fisheries management arrangements or the development of harvest strategies. Again, the information presented was simplified, starting with simple explanations of TACs and other common terms used by fisheries managers. The effectiveness of harvest strategies was linked back to the importance of providing accurate and complete data to AFMA and reinforcing how that data is used in the overall management process.
8. Attendees did not raise any concerns regarding the harvest strategies. Attendees were advised as to how they can make a submission in response to the public call for comment.

Western Line Closure

9. The proposal to remove the Western Line Closure in the Finfish Fishery was well understood. Some attendees raised concerns about the effect of removing the closure on finfish sunset licence lease money. Currently lease money from sunset licences are held in trust by the TSRA on behalf of the eastern communities. Attendees were concerned with how the lease money might be distributed further with other non-eastern communities if the closure is removed. Masig attendees expressed a strong view that the lease money should be allocated to eastern communities only (i.e. Erub, Ugar, Mer and Masig).
10. Some attendees sought to better understand when and why the Western Line Closure was originally implemented.

ACTION ITEM – AFMA to clarify and report back to Hilda Mosby about when and why the Western Line Closure was originally implemented.

Licensing

11. A number of attendees sought information on how a person can commercially fish if they do not own a boat (e.g. many younger fishers cannot afford their own boat). AFMA advised that under the current system, a boat needs to be nominated to a TIB licence, though there is provision under the legislation for hand collection licences (e.g. commercial fishing without the use of a boat), though the administrative procedures are not currently in place to issue these licences.
12. An alternative option discussed was to fish using another person's boat, and under that person's licence as an authorised agent.
13. A number of attendees expressed frustration regarding the delays they are experiencing in receiving sign-off from Mayor Gela (Regional Council Mayor) on Traditional Inhabitant Identification forms. It was advised that three people in the community have been waiting more than three months for sign-off and have had difficulty contacting the Mayor's office to follow up. AFMA offered to support the process and contact the TSIRC office to query the status of these forms, but also suggested that applications also needed to be followed up by the applicant.
14. A number of community members strongly suggested that the PBC Chair be able to sign-off on Traditional Inhabitant Identification forms, as they have a much better understanding of who is who in their community in comparison to the relevant Council Mayor (who may not know the Traditional Inhabitant background of the person in question).

ACTION ITEM – AFMA to follow up with TSIRC Mayor Gela's office regarding outstanding Traditional Inhabitant Identification forms.

Other Business

15. One community member advised that the TVH BDM licence currently held in trust by TSRA (originally owned by Nyall Ledger) should be 'given back' to the Masig community, who first held the licence under historical community licensing arrangements. The community members expressed frustration that the original owner, not the community, made \$1.5 million when the licence was sold.
16. AFMA advised that while the TSRA currently holds this licence in trust, it is not currently in use and TSRA would need to advise what will happen to this licence when the independent entity is established. Attendees were also advised that TSRA were to be visiting all Torres Strait communities in May 2019 to discuss the regional ownership and management of fisheries assets (i.e. the Entity).

<p><u>ACTION ITEM</u> – AFMA to raise the issue of TVH licences held in trust and associated monies with TSRA Fisheries Program ahead of their community visits in May 2019.</p>

17. Community members encouraged AFMA staff to do an overnight visit next time to allow more time to consider the issues. An overnight stay would also allow more face to face time to address licensing queries and general fisheries questions.

Erub (Darnley) Community

Date	8 – 9 April 2019
AFMA staff	Andrew Trappett, Gabrielle Miller and Hannah Howard
Traditional Inhabitant Members	Rocky Stephen, Kemer Kemer Meriam – TSSAC, FWG, FRAG Michael Passi, Kemer Kemer Meriam – HCWG
Attendance List	Refer to Table 3

Fish Receiver System

18. Some attendees expressed concern that fish receivers are not submitting data to AFMA on time due to missing signatures from fishers. Several fish receivers' in attendance at the meeting acknowledged that it is difficult to fill in the paperwork with bloody or wet hands, and to get signatures from fishers while processing catches, if fishers want to leave the premises quickly. AFMA reminded attendees of the fisher and fish receiver joint responsibilities in landing and reported catches.
19. Attendees were very pleased with level of reported catches and agreed that the species composition data for BDM species looked accurate.
20. A number of attendees noted a general concern from some fishers about providing voluntary data about the area where fish are caught and suggested that greater awareness needs to be built about what happens with the data that is collected, who sees it and what it is used for. This would encourage more fishers to provide voluntary data. AFMA showed some key examples of how data is used in the most recent Spanish mackerel assessment.
21. Many attendees were familiar with the FRS. Key questions included:
 - a. the difference between commercial and traditional fishing;
 - b. when to land catch, i.e. if TRL is kept offshore in a cage, or if product is freighted or flown to Cairns/Horn Island. It was explained that catch needs to be landed to a licensed fish receiver as soon as it comes onto land;
 - c. who needs to complete a CDR. Some fishers were uncertain if they should complete a CDR, as their product was being flown/freighted to Cairns/Horn Island. It was explained that catch needs to be landed to a licensed fish receiver as soon as it comes onto land. Some fishers raised concerns that some product is not currently being landed correctly by the fish receivers/buyers in Cairns/Horn Island; and
 - d. the difference between a catch disposal record and a daily fishing logbook;

Harvest Strategies

22. Attendees noted both draft harvest strategies with general support for their structure and function. There was some confusion with technical language, e.g. empirical harvest control rules, though all agreed that this was the necessary language required.
23. Attendees were advised as to how they can make a submission in response to the public call for comment.

Western Line Closure

24. The proposed removal of the Western Line Closure was noted as well as removal of traditional fishing rules (mesh netting). The community, led by the PBC Chair did not wish to formally support the removal noting it doesn't directly impact the Erub community however there was general support for those western communities to remove the closure should they wish. The key comment from the Erub community was that increasing the size of the Finfish Fishery may change areas where fishing is conducted, shift effort around and may affect how the available TAC is filled. Agreed with the AFMA advice that, should the closure be lifted, the focus will be on monitoring and data analysis through Finfish RAG.

Licensing

25. Some attendees queried the arrangements for using another person's boat undertake commercial fishing and if this was permitted under the current licensing system. The authorised agent system was explained involving the authorisation of a person to operate under another person's TIB licence. Feedback from attendees agreed that more awareness was required around authorised agents among communities.

ACTION ITEM: AFMA to develop and disseminate more information about authorised agents to communities.

Other Business

26. The Erub Fisheries Management Association freezer is the main receiver for finfish product (coral trout, Spanish mackerel) on Erub, receiving product from fishers from the other eastern islands. The freezer has not been operational in recent months, due to a delay in repairs. However when the freezer is fully operational it employs 3-5 staff. It was noted that fishers are unlikely to resume fishing for finfish while the freezer is non-operational.
27. The meeting noted the outcomes of the most recent Spanish mackerel assessment including the estimated level of biomass (approximately 32 per cent of pre-commercial fishing levels) the downwards trend in recent Catch Per Unit Effort estimates and the corresponding reduction in total allowable catch. Community members were concerned about the apparent decline in catch rates and also were concerned that the data supporting this stock assessment came mainly from non-indigenous fishers (sunset licence holders). Community noted that further data from the TIB sector would help improve the scientific understanding of the health of the Spanish mackerel stock.

Boigu Community

Date	17 April 2019
AFMA staff	Georgia Langdon and Gabrielle Miller
Attendance List	Refer to Table 4

Fish Receiver System

28. Attendees showed some knowledge of the FRS. It was understood by the active fishers that they need to land their catch to a fish receiver and that the fish receiver completes a CDR for them. A few attendees were confused as to whether they needed to have their own TBD02 book or not. This was clarified.
29. The fishers in attendance mostly land TRL to Seafari (a carrier boat and fish receiver anchored off Horn Island) as they fish south of Boigu. It was advised that sometimes fishers will transport their catch to Thursday Island to offload at a land based fish receiver. Fishers advised there are very limited times they can fish around Boigu as the waters are muddy and only clear enough to dive during a quarter moon.
30. Additional time was spent discussing what the requirements are for both fishers and fish receivers and explaining when the catch needed to be recorded in a CDR (i.e. when the catch is first brought to land).
31. There was a good response to the summary 'area fished' data presented. Fishers advised that they may not be giving accurate location data due to fear of their fishing spots becoming known. However, they agreed that the TDB02 area maps were broad enough that the exact reef could not be identified, and understood how useful this data is to the management of fisheries.

Harvest Strategies

32. Both the TRL and BDM harvest strategies were well received, with attendees agreeing that they were a good idea. They appeared to have a good understanding of the key differences between the two strategies in terms of what data and information is available and how this impacts on the level of management required in each fishery, including how the TACs are generated.
33. Some questions were asked about whether the full time commercial fishers were happy with the TRL harvest strategy. The group discussed more about how the strategies were developed over time with significant input from various stakeholders, particularly Gudumalugal PZJA traditional inhabitant members, Aaron Tom and Tenny Elisala.
34. PBC Chair, Keith Pabai raised concerns that the restrictions in the BDM Fishery may make it economically unviable for the fishers. Specifically, the proposed increase in minimum size limits and the prohibition on the use of hookah gear to access deeper species such as white teatfish.
35. Attendees were advised as to how they can make a submission in response to the public call for comment.

Western Line Closure

36. Attendees were very supportive of the proposal to remove the Western Line Closure in the Finfish Fishery and were strongly supportive of opening up access to the fishery to enable their communities to have the same opportunities as others in the Torres Strait.

37. The PBC Chair advised that the TSRA is providing Boigu with a freezer through their Fisheries Infrastructure Project, and that local fishers should be able to commercially fish for coral trout (and Spanish mackerel) to utilise the resource and the freezer to its capacity.

Other Business

38. A number of attendees enquired about the new coxswains' requirement through the Australian Maritime Safety Authority (AMSA) and were instructed to directly contact Jade Morris at MyPathways.

Poruma (Coconut) Community

Date	11-12 April 2019
AFMA staff	Georgia Langdon and Natalie Couchman
Traditional Inhabitant Member	Patrick Bonner, Kulkalgal – HCWG
Attendance List	Refer to Table 5

Fish Receiver System

39. The majority of attendees were familiar with the FRS. The community hall also had FRS fact sheets in A3 size displayed on the walls.
40. Attendees sought clarification on the time frames for completing CDRs when TRL are being held in cages and then flown to Horn Island or Cairns. This discussion also touched on how authorised agents work within the FRS.
41. Attendees also enquired about what data requirements the TVH fishers are required to comply with. AFMA staff passed around a copy of the TRL04 daily fishing logbook for attendees to look at and explained how TVH fishers are required to fill in much more detailed information about what they are catching, how and when, each day they are out fishing, in addition to completing a CDR when they land their catch.
42. The group was very interested in the area fished data summaries, noting the areas are large enough not to reveal specific fishing locations, but small enough to understand general areas in which fish are being caught.
43. One attendee queried whether the CDR data could be used to support future allocation discussions amongst communities. AFMA advised that although this is not the reason why the data is collected, it is possible that if an allocation process was agreed to by communities, CDR data could be used. However, the group noted that such discussions have not been had yet, and TSRA is currently working to develop an Entity to hold and manage Torres Strait fisheries assets.

ACTION ITEM – AFMA to advise Patrick Bonner about the membership of the TSRA board sub-committee working on the Entity project.

44. Attendees reported that there is more TRL taken in the central area (e.g. Dungeness Reef/Area 14) than what is represented in the data summary, noting more than 50 per cent of location data was not reported.
45. Fishers agreed that the finfish data looked accurate but noted that Poruma fishers do not fish for finfish commercially, largely as there are no buyers, and that the processing is more intensive than for TRL. Others noted that there is good fishing grounds for finfish but no one is fishing it commercially.
46. Attendees also noted that fishing for BDM has recently declined. Patrick Bonner's operation is temporarily closed and most fishers on the island are fishing for TRL. Caroline Enterprises is processing BDM and sending it through to Independent Seafood Producers (ISP) in Cairns. Clarification was provided to attendees about the requirement for a CDR to be completed by a fish receiver at the point fish is first landed, not by the buyer.
47. Attendees gained a good understanding of the benefits of submitting voluntary data to assist in understanding the health of stocks and how fisheries are performing.

Harvest Strategies

48. Learning from earlier community visits, the discussion on harvest strategies started with a very simple overview of 'what is a harvest strategy?' Both harvest strategies were linked back to the importance of providing catch and effort data to AFMA and reinforcing how that data is used in managing each fishery. It was emphasised how harvest strategies were developed in consultation with PZJA forums and industry stakeholders and attendees were encouraged to take home the overview fact sheets and come back following day with any questions.
49. Key questions included what is the difference between a Management Plan and a harvest strategy? It was explained that management plans set out who can access a resource and a harvest strategy sets out how the PZJAs determines how much can sustainably be taken each season. Generally well received.
50. Attendees were advised as to how they can make a submission in response to the public call for comment.

Western Line Closure

51. There was limited interest in the proposal to remove the Western Line Closure in the Finfish Fishery given the lack of commercial finfish fishing by Poruma fishers. Attendees supported the removal, recognising that reef-line species are community resources and all communities should have access.
52. Some attendees queried whether the removal of the closure will impact the finfish TAC. AFMA advised that removing the closure will likely impact where the TAC may be caught and may mean more fishers from the western islands become active in the reef line fishery, however the way the TAC is set each season will not change to reflect a larger area of the fishery. It was noted that preliminary advice from scientists has indicated removing the closure poses no risk to the sustainability of the stock.

ACTION ITEM – AFMA to report back to Poruma fishers about whether there any TIB operated finfish sunset licences.

Licensing

53. A number of attendees queried whether a person can commercially fish if they do not own a boat (e.g. many younger fishers ca not afford their own boat, but can still go fishing e.g. reef walking).
54. AFMA advised that usually a boat needs to be nominated to a TIB licence, though there is provision for hand collection licences. Another option is to fish using another person's boat, and under that person's licence (as an authorised agent).

ACTION ITEM – AFMA to provide clear guidance on whether TIB licences can be issued without a boat.

Other Business

55. Some fishers expressed an interested in selling shark fin to Chinese buyers. The rules for fishing for sharks were explained (i.e. requiring reef-line endorsement, maximum size limits, finning at sea prohibitions and no take species). The group also discussed the rational for these restrictions

including the importance of sharks in the ecosystem, their vulnerability to overfishing and optimal utilisation of whole animals.

56. Patrick Bonner advised that Mura Porumalgal Fishers Corporation recently held their Annual General Meeting. Patrick remains the President however there is a new board of Directors in place. He noted the Corporation was very pleased with the AGM outcomes and believes they have a good team on board now to achieve things.

ACTION ITEM: – AFMA to follow up with Patrick Bonner with details of who sits on the Poruma fisheries association and their contacts.

57. AFMA staff had a detailed conversation with one Poruma fisher regarding how Torres Strait legislation and policy works. They also discussed a desire of the Poruma community to have their cultural protocols respected out on the water and how AFMA/TSRA can support them in this. He advised the Fishers Corporation had a discussion on this issue at the AGM, in particular around non-Poruma fishers (largely TVH operators, but also some TIB) respecting protocols concerning anchoring near communities, seeking permission to fish on home reefs, using hookah on reef tops and anchoring near islands during certain cultural ceremonies. He explained concerns that boats anchoring near islands during coming of age ceremonies are scaring off dugongs/turtles which results in young people not able to successfully hunt as part of that ceremony.
58. AFMA advised that we need a better understanding of what their community protocols are, and then to have a broader discussion with all stakeholders on how we can work together to have them respected, whether at a community level or through regulation. Other options were discussed including developing a code of practice with TVH fishers, and that other fisheries in the Commonwealth operate under codes of practice developed through their industry associations.
59. One attendee questioned whether there will be enough TRL to get to the end of the season, noting catches to date. AFMA advised that more analysis is being done on the data now and that AFMA will flag with fishers if this is looking like a possibility.
60. Attendees questioned whether the sectoral catch shares could be overturned now by the PZJA if there were any appeals during the allocation phase under the TRL Management Plan. AFMA advised that TVH operators can only appeal their small slice of the 33.83 per cent pie but that if their small slice increases slightly, this does not mean that the overall TVH catch share increases rather that all other TVH operators 'slices' would need to be adjusted accordingly. AFMA also advised that depending on how long the appeals process takes, the PZJA may need to make another decision to keep the interim arrangements in place for coming seasons until the formal allocation process is completed. However, the PZJA remains committed to pursuing 100% ownership in the TRL Fishery and not renewing the interim arrangements while appeals are underway would not be consistent with this commitment.

Badu Community

Date	15-16 April 2019
AFMA staff	Georgia Langdon and Natalie Couchman
Traditional Inhabitant Members	James Ahmat, Maluialgal – TRL RAG Frank Loban, Maluialgal – HCWG
Attendance List	Refer to Table 6

Fish Receiver System

61. The majority of attendees were familiar with the FRS however there was a low level of engagement during discussions.
62. AFMA staff reinforced key messages concerning the need for voluntary data to better understand the health of stocks and how fisheries are performing. Attendees were very interested in the data summaries. Some people requested TVH and TIB catches be split out and shown. There was no other specific feedback on the FRS.

Western Line Closure

63. One attendee raised concerns that removing the Western Line Closure may impact on the sustainability of kaiar stocks and queried whether any research has been undertaken into the potential impacts of removing the closure. AFMA advised that this matter had been considered by the Finfish Resource Assessment Group and the Finfish Working Group and preliminary advice indicated there was no sustainability concerns at this time.
64. Some attendees went further to explain that coral trout are often found sharing the same habitat with TRL and questioned whether fishing coral trout would have a negative impact on TRL. AFMA advised that the outcomes from the FRAG and FWG consideration of sustainability impacts could be provided to the group out of session. It was advised that Malu Lamar would not support the removal of the western line closure until there is assurance that it won't create sustainability concerns. A number of other fishers at the meeting supported this, noting the importance of TRL to local fishers on Badu.
65. Contrastingly, on the second day of the AFMA visit, other fishers expressed support to remove the closure.

ACTION ITEM – AFMA to provide Malu Lamar with details of FRAG/FWG consideration of sustainability impacts of removing the western line closure.

Harvest Strategies

TRL Harvest Strategy

66. The Malu Lamar Chairperson claimed that the draft TRL harvest strategy should be designed around full-time operators and not those that fish part time so as to allow full time fishers to make the most of the resource.
67. AFMA explained that the harvest strategy was not designed to cater for any one sector over another. Instead the strategy recognises that the resource is shared and is important to the way of life and livelihoods of Traditional Inhabitants in the Torres Strait and Papua New Guinea. This

is reflected in the objectives, reference points and decision rules. The Chairperson advised that Malu Lamar do not support the harvest strategy and will write to the PZJA expressing this view.

BDM Harvest Strategy

68. The Malu Lamar Chairperson claimed the harvest strategy will be ineffective as accompanying management arrangements in the BDM Fishery force fishers to only “fish the top of the pyramid”. Further, currently fishers are limited to only a few species with low TACs resulting in a lot of fishing effort being concentrated on home reefs and observations of a decline in key target species such as prickly redfish. The view was expressed that two management rules exacerbate this problem specifically the prohibition on hookah and the 7m boat length restriction. The Malu Lamar Chairperson suggested that these restrictions be lifted in order to take the pressure off home reefs, and this needs to happen at the same time the harvest strategy is implemented otherwise it will be ineffective.
69. The Malu Lamar Chairperson advised that Malu Lamar do not support the BDM harvest strategy and will write to the PZJA expressing this view and their concerns regarding the management arrangements within the BDM Fishery.
70. Attendees were advised as to how they can make a submission in response to the public call for comment.

Other Business

Membership on PZJA forums

71. The Malu Lamar Chairperson expressed a strong desire for Malu Lamar to seek membership on all PZJA Forums and advised that their lawyers will be writing to the PZJA on this matter.

Consultation with Malu Lamar

72. The Chairperson requested that AFMA consult with Malu Lamar concerning any amendments to legislation. AFMA advised that Malu Lamar are consulted as per requirements under the *Native Title Act 1993*, and that AFMA had written to them directly concerning the latest management proposals (e.g. harvest strategies and Western Line Closure).

Compliance

73. Two attendees expressed concerns that the AFMA Compliance program is ineffective, alleging that TVH operators are fishing illegally to circumvent the sectoral catch shares arrangement. Allegations were made that TVH fishers are fishing in the Torres Strait and landing the product as Queensland product. Other allegations included primary vessels anchoring near the Southern jurisdictional line of the Protected Zone with tenders fishing in Torres Strait waters but landing the product as Queensland product. AFMA advised about how AFMA took over domestic compliance mid-2018 and highlighted how a range of tools (e.g. VMS, catch reporting, aerial surveillance, inspections and other compliance tools) are used to monitor TVH operations.
74. Attendees were advised to report any suspected illegal fishing to AFMA noting how these reports are important to an effective compliance program.

Use of hookah breathing apparatus

75. The Malu Lamar Chairperson expressed a strong desire for industry to fish for white teatfish using hookah. AFMA advised that this issue had been discussed at length at previous HCWG meetings, at which he was present. The HCWG advised there were some sustainability concerns around using hookah to fish for BDM that need to be addressed and this is exacerbated by the lack of data on the health of BDM stocks more broadly. The Chairperson noted a developmental permit was issued in 2011 to allow fishing for BDM species (largely white teatfish) to a non-Traditional Inhabitant operator, and advised that if that was allowed then it should be allowed now.
76. The Malu Lamar Chairperson advised that Malu Lamar will write to the PZJA on this matter and requested that the data from the developmental permit be released to communities. AFMA advised it had been considered in the HCWG.

ACTION ITEM – AFMA to assess whether the data summaries from the 2011 hookah developmental permit can be released to communities.

7m boat length restriction

77. The Malu Lamar Chairperson expressed a concern that the current 7m boat length restriction in the BDM Fishery prevents operators from fishing a greater area in the fishery, forcing them to fish only on home reefs. AFMA explained the origin of this rule as a blunt tool to control effort. Further, AFMA explained the biological vulnerabilities of BDM, which means that in lieu of more complex fisheries management arrangements (e.g. rotational fishing) blunter tools have been used to control effort in the fishery to prevent overfishing.
78. AFMA advised that good fisheries data is needed to support changes to current management settings, which until the FRS was implemented, the fishery was very data poor.
79. The Chairperson advised that Malu Lamar will write to the PZJA on this matter.

General

80. Some fishers expressed the view that PNG persons should not be eligible for a TIB licence. AFMA explained the current eligibility criteria under the *Torres Strait Treaty* and PZJA policy. There was also a query as to whether a PNG person with a TIB licence can have another PNG person working on their boat. AFMA advised this is only possible if that person is deemed a Traditional Inhabitant as defined by the *Treaty* and PZJA policy.
81. In the margins of the meeting, some fishers noted that the views expressed by Malu Lamar was not shared by all in attendance.

Ugar (Stephen) Community

Date	12 April 2019
AFMA staff	Andrew Trappett and Gabrielle Miller
Traditional Inhabitant Members	Rocky Stephen, Kemer Kemer Meriam – TSSAC, FWG, FRAG Michael Passi, Kemer Kemer Meriam - HCWG
Attendance List	Refer to Table 7

Fish Receiver System

82. Most attendees were generally familiar with FRS, however a significant misunderstanding was evident in terms of the function of authorised agents, and the issues with fishers receiving their own catch. The group discussed in detail the issue of requiring two separate parties verifying and signing off on the catches received and how an authorised registered agent can assist fishers who are also receivers in ensuring the Catch Disposal Records are filled out correctly.
83. Attendees were very interested in the volume of reports and reported catches in the TRL, Finfish and BDM Fisheries.
84. Attendees noted how the provision of BDM catch data will help support future openings for Black Teatfish, acknowledging that reported catches within the last the opening for black teatfish were significantly delayed resulting in an over-catch of the TAC.

Harvest Strategies

85. Generally, attendees were pleased with the level of involvement two of their community members (Rocky Stephen and William Stephen) had in developing the draft BDM harvest strategy in recent years.
86. Attendees expressed a strong need for traditional knowledge and on-water observations (seabed health for BDM) to be incorporated in the harvest strategy and in stock assessments. It was acknowledged that this sentiment is captured as an objective the draft BDM harvest strategy.
87. Attendees were advised as to how they can make a submission in response to the public call for comment.

Western Line Closure

88. Community members from Ugar abstained from making comment on the proposal to remove the Western Line Closure, noting it was an issue not directly relevant to their waters.
89. Some expressed concern that removing the closure will result in more western community fishers accessing key eastern fishing grounds for coral trout and mackerel with larger boats in future.
90. Attendees advised that some spatial control on harvests will be required in future. As an example, during a black teatfish opening, it is not satisfactory that fishers are licensed to fish in the whole of Torres Strait noting that home reefs and community reefs traditionally fished need to be respected and reserved for those home communities.

Other Business

91. There appears to be a general lack of understanding of the Torres Strait Prawn Fishery with concern that the prawn trawl fleet is destroying seabed habitat, have unlimited catches, unlimited

fishing effort, no monitoring, and are catching bycatch of other finfish species which is impacting on Torres Strait finfish commercial catches. Attendees suggested that AFMA could provide general facts and information about the Torres Strait Prawn Fishery to help communities understand more about how the fishery operates and is managed.

92. Similarly, there appeared to be a general lack of understanding of the TRL Management Plan and how the new quota management system works (e.g. sectoral catch shares).
93. Attendees expressed concerns that hookah method is taking most of the TIB sector TRL catch and this unfairly impacts free-diving fishers. It was suggested that a cap or split be implemented within the TIB TRL sectoral catch share to retain catch available for free-diving fishers in years with low TACs.
94. Concerns that the new AMSA coxswains requirement will result in some TIB fishers leaving the fleet as they may not be able to pass coxswains course.

Spanish mackerel

95. The group discussed the Spanish mackerel assessment in detail and examined the downwards trend in CPUE and corresponding decrease in total allowable catch.
96. Some attendees expressed concern that sunset finfish fishers were impacting the breeding stock at Bramble Cay and these effects flow on and disadvantage the rest of the TIB fleet. The group was reminded of the current finfish management arrangements in already having secured 100 per cent TIB access to ownership.
97. After substantial discussion on potential factors causing the decline, attendees agreed that monitoring the fishery via reported catch data was the best way to improve our understanding of the fishery. Some fishers expressed a desire to contribute to the strength of the CPUE signal through voluntarily completing TSF01 Daily Fishing Logbooks. As a result, two TSF01 logbooks were issued to fishers.
98. Attendees noted that it is important for TIB sector catch and effort to be tabled for analysis as the sunset sector (and subsequent catch and effort data) comes from a substantially different area of waters (compared to the TIB sector) due to the 10nm closures around inhabitant eastern island communities.
99. TIB fishers present suggested recent mackerel catches have been strong on Ugar with good catch rates and good size class fish (~15kg).

Saibai Community

Date	1 May 2019
AFMA staff	Georgia Langdon, Natalie Couchman and John Jones
Attendance List	Not available

100. The consultation at Saibai did not go ahead in the same manner as other community visits. This was due to a lack of facilities available on Saibai on that day, in conjunction with an accidental double booking of Government agencies holding community meetings. The TSRA Land and Sea Management Unit offered AFMA staff a window to present to community members in the margins of their own meeting, which was preceded by a TSRA Fisheries Infrastructure Program presentation. While presentation time was limited, the access to a broader range of community members was welcomed.
101. A formal attendance list was not recorded, however attendees included TSRA rangers, fishers, My Pathways and respected elders of the Saibai community.

Fish Receiver System

102. The majority of attendees were not familiar with the FRS or general commercial fishing licensing requirements. AFMA staff took the opportunity to discuss primary licence conditions for commercial fishing in the Torres Strait and the requirement to land catches to a licenced Fish Receiver. AFMA staff also touched on the importance of the need for voluntary data fishing effort data to understand the health of stocks and how well fishers are operating.
103. Questions and suggestions from stakeholders included:
- Requiring the marking of cray cages, pots and nets to identify them as TIB fishing gear;
 - Requiring a fisher to be in possession of a licence card in order to legally fish with the intent to stop the misuse of commercial licences. This suggestion also included the introduction of magnetic strips on licence cards to be used to record catch through an electronic system.
 - Whether a licenced fisher can have unlicensed persons on their boat. AFMA staff advised this is possible, however such crew members are required to be traditional inhabitants. In the event a TIB boat is crewed by non-traditional inhabitants, it is the TIB licence holder who is liable if any fishing offence is made.
 - Whether a TIB licence can be issued without a boat. AFMA staff advised that if a person does not have a boat, they could use a licenced boat with the permission of the owner, however the owner is liable for the actions of the person using the boat. This arrangement can be made formal by registering an authorised agent to act on the licence holders behalf.

ACTION ITEM –Clear guidance to be developed on whether a TIB licence can be issued to a traditional inhabitant without a boat.

Harvest Strategies

104. Due to the nature of the community consultation and lack of facilities to show a powerpoint presentation, AFMA were unable to present on draft harvest strategies. Attendees were advised

that all TIB licence holders were mailed a package containing information on the draft harvest strategies out for public comment and encouraged people to provide comment.

Western Line Closure

105. The proposal to remove the Western Line Closure was understood. One of the TSRA Rangers was very useful in facilitating the discussion and outlining the issue. Those in attendance supported removing the closure, noting it would support the operation of the community freezer once up and running.

Other Business

Community freezer

106. A representative from the TSRA fisheries infrastructure project presented on the development of a Saibai community freezer:

- The Saibai freezer will be one of six freezers to be built across the Torres Strait region. A network of freezers will provide for improved continuity of fisheries product supply and potentially pooling of catch and other resources.
- All freezers will be the same design to facilitate maintenance and repairs. Freezers will be built to accommodate both live and frozen product, occurring in 3-4 stages with building of the Saibai freezer to commence by the end of June over a 30 day contract period.
- Fishers will be paid beach price immediately on landing and TSRA will fund 6 positions at the freezer (manager, book keeper and 4 filleters/processing staff).
- Any profits from the freezer will be reinvested back into its operation.
- Designed to meet domestic food safe requirements but will not meet export requirements. This is because export requirements are considered too expensive and not necessary as all product will pass through export grade facilities in Cairns before leaving Australia.

Biosecurity risks

107. The TSRA Land and Sea Management Unit gave a general awareness presentation regarding the biosecurity risks from PNG (various invasive fish species and plant diseases) or from south of Saibai (e.g. carried by Seaswift barges (cane toads)). The presentation also touched on existing controls for deer which are reportedly increasing in numbers and having detrimental impacts on local swamplands.

Warraber (Sue) Community

Date	11 April 2019
AFMA staff	Selina Stoute and Gabrielle Miller
Traditional Inhabitant Members	James Billy, Kulkalgal – TRL RAG
Attendance List	Refer to Table 8

Fish Receiver System

108. Attendees raised concern about confidentiality of location and effort data and queried whether fishers on Thursday Island or from the TVH sector see the spatial data.
109. Concerned that fish receivers are sharing fishing area information with others, some fishers questioned whether there are any rules preventing fish receivers from releasing data to others. AFMA advised no, no such rules exist.
110. Further, attendees questioned what information the TVH sector are required to supply and whether discarded catches are included in CDRs and accounted for under the TAC.

Harvest Strategies

111. No specific comments were made about the draft harvest strategies. AFMA staff advised that explanatory material has been provided to licence holders to assist and AFMA is available on phone anytime to discuss.

Western Line Closure

112. Attendees queried by the closure was first introduced. AFMA advised the closure is a carryover for a historical management boundary when QLD Fisheries solely managed fisheries in this region.
113. No formal support or opposition in relation to the Western Line Closure was expressed by the Warraber community.

Other Business

114. A fisher made anecdotal reports and observations of dumping mass quantities of dead crays in the Thursday Island harbour from a full cage.
115. Attendees expressed concern that Thursday Island based fishers have disproportionate influence in the fisheries management process without understanding the views of outer island communities. Attendees recommended that all communities should be informed about all meetings and consulted on all matters.
116. AFMA staff advised that the AFMA Thursday Island office has an open door policy, and stakeholders are encouraged to meet with AFMA when on Thursday Island, or contact AFMA staff by phone anytime. AFMA staff agree to the importance of meeting with communities to better understand outer island community views.
117. Further, views can be conveyed through PZJA advisory forums (e.g. TRL Working Group). Attendees noted that building effective communication and engagement is a joint

responsibility between AFMA and industry/communities. This is particularly effective where industry associations/organisations are in place.

118. By way of example, participants reiterated that the Malu Lamar court case decision in 2018 that overturned the hookah ban was not known about beforehand at Warraber and not supported by the Warraberalgal community.

Development permit

119. Attendees questioned a current Developmental Permit and raised concern that it was being used primarily for fishing not training. AFMA advised that at their most recent meeting in April, the PZJA agreed to commence a review of how developmental permits are used for training purposes in all Torres Strait fisheries. Further, the PZJA agreed that until a policy has been developed, the PZJA will not be considering any applications for developmental permits that seek an exemption of the policy for TIB boats to be fully owned and crewed by traditional inhabitants.

General questions – TRL

120. Attendees had a number of general questions and concerns about the TRL Fishery;
- a. How the quota system works, whether shares will change and whether the TVH boats will be able to lease quota from the TIB sector;
 - b. Concerns that TVH boats will fish for a full season when TAC is high (i.e. still be operating on TIB grounds) and if measures are able to be put in place to avoid this happening? AFMA advised any such measures are not possible through quota system, however other avenues may provide a pathway to address this concern. This includes the continued pursuit of 100% ownership, and industry codes of practice with TVH boats around home reefs. Under a more certain access agreement (i.e. quota allocation), industry codes of practice may be easier to develop;
 - c. Whether closures could be implemented to stop TVH entering some areas of the fishery. AFMA advised closures can be made however these need to be fair and consistent with objectives of the *Torres Strait Fisheries Act 1984*.
 - d. Whether AFMA consulted on the TRL management plan? AFMA staff advised that there were two full rounds of community visits and consultation in developing the TRL management plan in addition to the 2018 Fisheries Summit and form Native Title Notification;
 - e. What is QLD East Coast TRL Fishery TAC? AFMA advised the East Coast Fishery operates under a 195 tonne constant catch strategy. The East Coast does not benefit from an annual independent fishery survey, like the Torres Strait. Industry on the East Coast would need to fund a survey in order to move away from a constant catch strategy.
 - f. Concern that East Coast boats unload east coast catch in Thursday Island yet declare it as caught in Torres Strait. AFMA advised that a range of tools are used to monitor the activities of boats, including the Vessel Monitoring System (VMS), mandatory QLD pre-unload reports (when, how much and where) and verified landing reports noting that QLD is set to have VMS on all boats (primary and tender) for east coast TRL by the 2020 season.

Mer (Murray) Community

Date	18 April 2019
AFMA staff	Georgia Langdon and Andrew Trappett
Traditional Inhabitant Members	Rocky Stephen, Kemer Kemer Meriam – TSSAC, FWG, FRAG Michael Passi, Kemer Kemer Meriam - HCWG
Attendance List	Refer to Table 9

Fish Receiver System

121. Attendees were eager to see the reporting progress under the FRS and were satisfied with the level of reporting that was occurring, noting in particular how poor catch reports used to be prior to FRS implementation. Most were generally happy with the trends in the data with regards to areas reported.
122. Some attendee's role-played an example fish receiver transaction using the example pages from the TDB02 book. This method proved very useful in helping people to understand each field in the form and how to complete the record. Attendees appeared comfortable with the role of both fishers, fish receivers and authorised agents and the importance of providing details to one another to complete the form.
123. The Spanish mackerel assessment was used to demonstrate an example of how the voluntary effort data helps build the understanding of CPUE series, highlighting how and why AFMA collects catch and effort information. AFMA staff reiterated that the FRS supports fishers but only if fishers are supporting the FRS.
124. Attendees were vocal about sunset fishers harvesting near their waters and the group discussed the requirements sunset fishers have under their lease arrangements, including their permit conditions, VMS, logbooks, compliance inspections and spatial closures. Attendees expressed a strong desire to understand what the 'big boats' (sunset licences) are catching, with some assuming that the declining finfish catch rates are from the 'big boats'.
125. A member of the TSRA Finfish Quota Management Committee noted how important it is to have fish receiver data in the context of allocation for finfish, acknowledging tonnage is allocated to the TIB sector first, and the remainder is available to be leased to the sunset (TVH) sector.
126. It was suggested that AFMA should be paying people in communities to collect data on behalf of the fishers – there was general support from others about this.
127. Attendees also questioned why AFMA won't allow TIBs to have big boats and fish the way the sunset licensed boats do. AFMA staff advised that TIB fishers are able to operate a boat up to 20m in length, noting however that there are additional requirements (e.g. VMS) for larger boats.

Harvest Strategies

128. Attendees acknowledged the differences between the draft TRL and BDM Harvest Strategies, particularly regarding the level of data and information available in each fishery and how that impacts our understanding of the health of the respective stocks and in return impacts to the management in both fisheries.
129. Those in attendance supported the draft BDM harvest strategy noting it will help set out how to re-open closed species (i.e. black teatfish).

130. Attendees noted that a larger BDM survey across the Torres Strait may be occurring but is subject to funding. It was emphasised that a survey is not the only key for opening a species like black teatfish and that AFMA is still committed to pursuing an opening and how and what that opening looks like will be discussed at the next HCWG meeting.
131. The group discussed how communities can implement their own measures above and beyond the Harvest Strategy or other fishery rules (e.g. Mer & Erub agreement to let Big Mary, Little Mary reefs lie fallow to protect prickly redfish). AFMA reiterated that there is nothing prohibiting communities implementing their own complimentary fishery rules and that the beche-de-mer harvest strategy is designed to enable this.
132. Attendees were advised as to how they can make a submission in response to the public call for comment.

Western Line Closure

133. The proposal to remove the Western Line Closure was well noted with general consensus to not provide specific advice on the proposal. It is considered a western islands issue and western communities should be the ones to decide what to do with the closure.
134. General comments indicated that western communities want more fishing for trout to alleviate predation TRL and to enhance the abundance of TRL. Some anecdotal comments were made indicating that the more coral trout is fished, the more habitat is opened for TRL (i.e. holes in the reef).
135. General comments were also made that Western communities should make sure to get their management settings in order before sunset licences might access their waters – referring to the tensions prior to the implementation of the 10nm radial closures excluding sunset fishing effort around Mer, Ugar, Massig and Erub communities.

Other Business

136. The PBC Chair stated that more generally that there is a need for licencing review to occur and for further area controls on licencing permits. Most fishers seemed dissatisfied that a TIB licence technically permits a fisher to access the whole fishery (Torres Strait wide) which is in conflict with cultural protocols. This issue results in community tensions during black teatfish openings or when primary-tender operations from the west, come to fish in Meriam waters.
137. A number of attendees queried whether there was to be a future establishment of an EEZ or territorial zones around inhabited islands, or changes to licence conditions to prohibit TIB boats from one particular island cluster fishing in another, and vice versa. Attendees advised this is currently ailan custom but that in order for it to be effective, it needs to be regulated through licencing conditions. If people want to fish in Meriam waters they should have to ask permission from the Meriam community. The issue was parked and suggested that the upcoming commercial entity formation would be the vehicle to progress this idea. All attendees were strongly encouraged to share these views with TSRA who are leading the development of a commercial fisheries entity.
138. Fishers expressed concerns and reports that they are having to travel further to find good catches of prickly redfish and that the sizes of prickly redfish are decreasing.
139. The PBC Chair advocated strongly for licensing reform, stating that Traditional Inhabitants own 100 per cent of the rights in most fisheries but don't have the capacity to fill the TACs (i.e. in finfish). He requested that the Australian Government work on a program that is designed to have clear outcomes for TIB taking more of the harvest using larger primary-tender operations

in major communities. Such boats need to be training boats, set up to upskill local fishers. Attendees suggested this concept was something the Entity could establish with AFMA's assistance.

140. A number of attendees expressed criticism about the TSRA holding finfish lease licence money and the lack of feedback to communities and transparency about what money was or was not being used for. It was noted that the funds are still being held in trust but that there has been political debates about how the funds are to be distributed. Those in attendance expressed strong support that the money should be put back in to communities to develop fishing capacity so that fishers are able to fish for finfish, to utilise the fishery better and therefore no longer need to lease licences to non-indigenous operators. AFMA suggested this issue be raised with the TSRA in the context of the formation of an Entity.
141. Further criticism was expressed in relation to the fisheries infrastructure renewal project. Given that there are land disputes on Mer, not all businesses will be able to benefit from a community based freezer, particularly if they have to travel onto another clan's land to access the establishment. Others advised that since the community freezer has been in disrepair since 2010 they have had to themselves invest in their own infrastructure and a community freezer will not benefit their business now they have gone an alternate route.
142. Attendees advised there is a general community ban on the use of hookah in Meriam waters in all fisheries including TRL.
143. A number of reports were made to AFMA regarding fisheries compliance:
 - Reports of Indonesian blue boats seen transiting through Meriam waters and Cumberland passage;
 - Concerns of possible illegal fishing in Area 20 (referring to TDB02 map) with reports that although those reefs have been deliberately left to fallow for over a year, fishers have returned the reefs to discover they have been completely fished out (BDM species).
 - Discovery of washed up bleach bottles over certain periods suggests to community members that offshore IUU fishing may be occurring using this destructive fishing practice.
144. All were consistently encouraged to report any suspected illegal fishing to AFMA with as much detail as possible in a timely manner, via the CRIMFISH hotline. Float keyrings were handed out to attendees with the CRIMFISH phone number and the AFMA Office phone number.

New Mapoon Community (NPA)

Date	9 May 2019
AFMA staff	Georgia Langdon, Kayoko Yamashita, John Jones and Natalie Jorna
Attendance List	Refer to Table 10

Fish Receiver System

146. Most attendees were not familiar with the FRS though some recalled the voluntary docket book system (TDB01). Some attendees were licenced TIB fishers but many had never held a TIB licence and there was a general lack of awareness in relation to PZJA managed fisheries within the Protected Zone versus areas of jurisdiction managed by Queensland Fisheries.
147. The group worked through the TDB02 example handouts in detail, with fishers reading through each field to understand the information that is being asked on each form. AFMA staff emphasised the need for voluntary data to understand the health of stocks and how well or poorly the fishery is performing. This was well received, and most understood the value in providing basic 'area fished' information, confident that the areas were broad enough to not give away their specific fishing spots.
148. Attendees were very interested in the maps of where fish were reportedly caught. There was a good understanding of how only part of the story is told with the 'area fished' data, particularly for TRL where almost 60% of the area fished data was not provided.

Harvest Strategies

149. The draft harvest strategies information was generally well received and understood in terms of how TACs are set and linked well with the importance of reporting catch and effort data.
150. Attendees were advised as to how they can make a submission in response to the public call for comment.

Western Line Closure

151. No formally expressed support for the Western Line Closure however the proposal was generally well understood. Participants were encouraged to go away with information handouts and discuss further with their communities and provide comments back to AFMA with any views.

Other Business

152. Several attendees expressed concern regarding the use of hookah on the tops of reefs. AFMA advised that there are no formal rules about where hookah can be used (as opposed to rules about when, i.e. moon-tide hookah closures), however industry codes of conduct or 'gentlemen's agreements' are options that can be explored by communities with operators to establish rules about the use of hookah around community home reefs. AFMA advised that it would be very difficult to enforce rules relating to the depth of hookah use given current monitoring tools but that AFMA and/or the TSRA can support communities in establishing codes of conduct and facilitate communicating this information between communities and fishing operators.

153. Some concern expressed from attendees about keeping cray cages in coastal waters, stating they had been advised by Queensland Fisheries that the practice was prohibited. AFMA advised that this practice is common with fishers in the Protected Zone but that perhaps QLD Fisheries have particular rules about this in QLD coastal waters. AFMA were not able to provide firm advice on this matter.
154. Fishers queried whether it was legal to catch and sell barramundi from Mapoon on the west coast of Queensland. AFMA advised that under a TIB licence this is not permissible, however QLD Fisheries may have different rules about barramundi on the west coast.
155. Overall, there was general lack of awareness about PZJA/TIB fishing rules and Queensland Fisheries rules and jurisdictions. Communities would benefit greatly with some very clear maps and targeted communications about PZJA fisheries management arrangements.

ACTION ITEM: AFMA to provide copies of the BDM Species ID Guide books to Michael Bond, Councillor of New Mapoon.

Injinoo Community (NPA)

Date	10 May 2019
AFMA staff	Georgia Langdon, Kayoko Yamashita and John Jones
Attendance List	Refer to Table 11

Fish Receiver System

156. Very few attendees were familiar with TIB licences, or the old voluntary docket book system. No one present had heard of the FRS and there was again a general lack of awareness about PZJA managed fisheries within the Protected Zone.
157. The presentation was simplified to basic licencing requirements in the Protected Zone, what a TIB licence permits a fisher to do, who AFMA are and who the PZJA are.
158. There was a lot of concern expressed about the Part B sea claim and how commercial fishing impacts the sea claim and Aboriginal rights in the NPA.
159. AFMA advised of the ability for traditional inhabitants of the five NPA communities to apply for a TIB licence, providing them the option to fish commercially within the Protected Zone and Outside But Near Areas.
160. Attendees were very interested in the effort data shown by area fished, however some were very concerned that the TDB02 map of Area Fished has arrows pointing south for Area 21 (east of Cape York). AFMA were unable to provide any advice as to why the arrows point down, or why there are any arrows at all. Attendees suggested that Area 21 should have more fish reported from that area.
161. Attendees then spent time examining detailed maps of the fisheries to better understand exactly where the area of the fisheries are, versus the Protected Zone, and the Outside But Near Area, in relation to where their communities are on the mainland NPA.

ACTION ITEM: AFMA to send copies of the BDM Species ID Guide to the Ipima Ikaya Secretary, Amanda Ewart.

Harvest Strategies

162. Despite presenting to a community that is quite unfamiliar with PZJA fisheries management arrangements or language, attendees appeared to have a good understanding of the importance of data collection and how it impacts management decisions.
163. Attendees were advised as to how they can make a submission in response to the public call for comment.

Western Line Closure

164. No formal support or opposition expressed by the group but attendees were encouraged to discuss further with their communities and other fishers not in attendance.
165. The Western Line Closure proposal generated a number of questions about the Finfish Fishery in terms of barramundi, netting restrictions, size limits and no take species. Summary information from *Torres Strait Fisheries Management Instrument No. 8* was provided to the PBC Secretary following the meeting.

Thursday Island (Torres Shire) Community

Date	20 May 2019
AFMA staff	Selina Stoute, Georgia Langdon, Natalie Couchman and Eva Plaganyi
Attendance List	Refer to Table 12

Fish Receiver System

166. Many people within the Torres Shire are very familiar with the FRS, and so only a brief overview was provided to those present.
167. No major concerns were raised with the FRS. One attendee queried whether discards or mortalities of TRL are recorded. AFMA advised that currently, this data is not captured on CDRs however there is a sub-group of the TRLRAG tasked with examining this issue.

Harvest Strategies

168. Harvest Strategies were not discussed at this meeting.

Western Line Closure

169. A number of concerns were raised in relation to the proposal to remove the Western Line Closure, including:
- Whether AFMA had already made a decision to remove it. AFMA advised that no decision had been made. Consultation on the issue was still on going, and that the outcomes of the consultation will then be put back to both the Finfish RAG and Working Group to discuss further.
 - Concern that coral trout are very territorial and don't move around reefs much, meaning that removing the closure may impact on the availability of coral trout in the area.
 - Whether lifting the closure could only apply to TIB operators. AFMA advised that this could be considered through advice from stakeholders and the Finfish Working Group.
 - Concerns that top western communities who have supported removing the WLC, won't actually utilise the opportunity to fish for reef line species if the closure is lifted.
 - Concern with the potential impact on TRL stocks and the ability for fishers to fish for coral trout for kai kai.
170. Other attendees noted that there is 'no trout on the grounds and no life on the bottom' around the inner islands this TRL season.

Other Business

171. Dr Eva Plaganyi from CSIRO delivered a comprehensive presentation about the science that underpins the management of the Torres Strait TRL Fishery and stock assessment, including the annual fishery independent survey. This was very well received by a number of industry members.
172. Some active fishers present noted that;
- the abundance of TRL around Thursday Island is worse than last season although the TAC is higher;
 - there a high numbers of 0+ lobsters being observed on reefs this season; and

- c. habitats have changed around Thursday Island with more mud instead of reef.
173. Sandie Edwards, from Torres Straits Seafood offered to provide size samples of landed TRL to CSIRO to contribute to the length frequency data set used in the TRL stock assessment.
174. One attendee questioned who the members of the PZJA consultative committees are, particularly the Torres Strait Scientific Advisory Committee (TSSAC) and added that Torres Strait Islanders should be setting the agenda for what is researched in the Torres Strait. It was emphasised that the Chair of all Working Groups and RAGs should be Torres Strait Islanders. AFMA advised that a call for applications for all non-traditional inhabitant positions on PZJA fisheries consultative committees had recently been advertised.

Mabuiag Community

Date	21-22 May 2019
AFMA staff	Georgia Langdon, Natalie Couchman, Kylie McKillop and Hannah Howard
CSIRO staff	Dr Eva Plaganyi
Attendance List	Refer to Table 13

Fish Receiver System

175. Despite there being a number of active TIB fishers present, only some people recalled the voluntary docket book system and very few were familiar with the FRS. At the time of the community meeting, there were no licenced Fish Receivers based on Mabuiag, and fishers reported that they take their catches to Badu or down to Thursday Island to be received.
176. Fishers raised a number of technical queries around whether you can be a TIB fisher and a Fish Receiver at the same time. AFMA advised the importance of having two separate (ideally independent) parties sign the CDR and outlined the options for enlisting an Authorised Agent to ensure that two different parties are signing the paperwork.
177. Most attendees appeared comfortable with providing voluntary effort and area data and understood how useful that information can be in understanding the health of the stocks and how well the fishery is performing.
178. One industry member expressed concern over the Area Fished map in the TDB02 book, highlighting that the broad areas outlined do not reflect how the people of Mabuiag view their waters traditionally. It was suggested that the map would be more useful to communities if the map areas were divided up in to community boundaries as understood by communities. This would allow communities to use and understand their catch data more effectively, particularly if they want to make decisions about their own fisheries management. AFMA advised that the areas were originally devised based on habitat similarities across the Torres Strait, but agreed that there is scope to adjust the areas. As an example, in the TRL Fishery, the TDB02 areas do not align well with the areas used by CSIRO in the stock assessment and this issue was being considered by the TRLRAG.

Harvest Strategies

179. At the request of attendees, and noting that the community does not fish for BDM, only the draft TRL harvest strategy was presented.
180. Although no specific comments on the draft harvest strategy was made, the concept of how the harvest strategies guide the way TACs are sustainably set in the TRL Fishery was well received.
181. Attendees were advised as to how they can make a submission in response to the public call for comment.
182. The discussion on harvest strategies was followed up with a comprehensive presentation from Dr Eva Plaganyi from CSIRO on the science that underpins the management of the TRL Fishery in the Torres Strait. The group spent some time discussing the life cycle of TRL, in particular how the level of recruitment of young TRL is heavily influenced by environmental factors and not just fishing pressure.

Western Line Closure

183. AFMA introduced the proposal to remove the Western Line Closure and shared some of the diverse views already shared by other communities during previous consultations, in particularly the potential interplay between TRL and coral trout. In consideration of these issues, there was general support for the closure removal in principle through a show of hands. No firm opposition to the proposal was expressed. A TSRA Ranger advised that further discussions needed to be had within the Mabuiag community, particularly with the islands' elders.

Licensing

184. A number of licencing queries and applications were made, as well as queries about holding a TIB licence without a boat.
185. Some community members expressed frustration with the difficult in getting sign off from both their local Councillor and the Regional Island Council Mayor on Traditional Inhabitant ID forms.

Summary of Action Items

Description	Status	Comment
AFMA to follow up with TSRA regarding the status of proposed iPads for electronic reporting	Ongoing	AFMA has raised this with the TSRA Fisheries Program and is awaiting further advice.
AFMA to clarify and report back to Hilda Mosby about when the Western Line Closure came in to place.	Complete	Advice was provided to Ms Mosby via email on 15 July 2019.
AFMA to follow up with TSIRC Mayor Gela's office regarding outstanding Traditional Inhabitant ID Forms.	Ongoing	Mayor Gela's office has advised that all TIB ID applications should be sent directly to Ursula.nai@tsirc.qld.gov.au or through a local TSIRC office who can pass it directly to Mayor Gela's office.
AFMA to raise the issue of TVH licences held in trust and associated monies with TSRA Fisheries Program ahead of their community visits in May	Complete	The TSRA Fisheries Program has been made aware of this issue.
AFMA to develop and disseminate more information about authorised Registered Agents to communities.	Ongoing	AFMA has drafted some materials regarding this topic.
AFMA to report back to Patrick Bonner about the membership of the TSRA board subcommittee working on the Fisheries Entity project	Complete	Advice on the membership of the Entity project was provided on 27 June 2019 via email
AFMA to report back to Poruma fishers about whether there any TIB operated finfish sunset licences.	Complete	Advice on the membership of the Entity project was provided on 27 June 2019 via email
AFMA to provide clear guidance on whether TIB licences can be issued without a boat.	Ongoing	AFMA is seeking legal advice on this matter
AFMA to follow up with Patrick Bonner with details of who sits on the Poruma fisheries association and their contacts.	Complete	Nil.
AFMA to provide Malu Lamar with details of FRAG/FWG consideration of sustainability impacts of removing the western line closure	Complete	Copies of relevant meeting papers and meeting records of both FRAG and FWG meetings where the WLC was discussed was circulated to Malu Lamar via email on 27 June 2019
AFMA to assess whether the data summaries from the 2011 hookah developmental permit can released to communities.	Ongoing	AFMA is seeking advice on this matter.

Description	Status	Comment
AFMA to provide copies of the Beche-de-mer Species ID Guide books to Michael Bond, Councillor of New Mapoon.	Complete	Guides were posted on 28 June 2019.
AFMA to send copies of the Beche-de-mer Species ID Guide to the Ipima Ikaya Secretary, Amanda Ewart.	Complete	Guides were posted on 24 May 2019.

Attendance Lists

Table 2. Masig (Yorke) Community attendance list

Name	Organisation
Charles Asai	
Francis Nai	TSRA Land & Sea Management Unit – Ranger
Gabriel Nai	Police Senior Sargent
Hilda Mosby	Kulkalgal PZJA Traditional Inhabitant Member on Finfish Working Group
Laskem Samuel	My Pathway
Leroy Kris	My Pathway
Loretta Adidi	My Pathway
Mary Lowatta	My Pathway
Ned Mosby	IBIS
Ned Mosby	Masig PBC Deputy Chair
Paul Lowatta	My Pathway Fisher Kulkalgal PZJA Traditional Inhabitant Member on Finfish Resource Assessment Group
Percy Misi	My Pathway
Samson Mosby	My Pathway
Simon Naawi	TIB Licence Holder
William F Mosby	My Pathway/Fisher
Willie Gamia	TIB Licence Holder

Table 3. Erub (Darnley) Community attendance list

Name	Organisation
Amina Ghee	
Bert Matysek	Erub Fisheries Management Association
Chris Sailor	Erub Freezer
Dan Sailor	Finfish rep (Erub)
Eddie Savage	Erubam Le PBC
Harry Ghee	Torres Strait Island Regional Council
Jimmy Gela	Erubam Le PBC
Les Pitt	PZJA Traditional Inhabitant member for Kemer Kemer Meriam on TRL Working Group and Resource Assessment Group.
Mary Savage	
Michael Passi	Mike Passi Divers PZJA Traditional Inhabitant member for Kemer Kemer Meriam on Hand Collectables Working Group
Rocky Stephen	Brother Bear Fisheries PZJA Traditional Inhabitant member for Kemer Kemer Meriam on Finfish Resource Assessment Group and Working Group
Yana Gesa	

Table 4. Boigu Community attendance list

Name	Organisation
Kada Tom	My Pathway
Keith Pabai	PBC Chair
Pabai Pabai	My Pathway
Robert Gizu	My Pathway
Wusuru Wurukii	My Pathway

Table 5. Poruma (Coconut) Community attendance list

Name	Organisation
David Mari	Boat Decky
Douglas Gaidan	Builder
Francis Clark	Fisher
Francis Pearson	Poruma Councillor
Frank Faud	TSRA Board Member PBC Chair
Gibson Billy	Fisher
Harry Ketchell	Builder
Joseph Pearson	Builder/Fish Receiver
Lawrence Mosby	Fisher
Nicholas Pearson	Fisher
Patrick Bonner	Fisher/Fish Receiver
Timothy Faud	Fisher
Victor Billy	Fulltime diver
Wrench Larry	Fisher/Fish Receiver
Yessie M Pearson	Fisher

Table 6. Badu Community attendance list

Name	Organisation
Anthony Garnier	My Pathway
Barry Nona	Police Liaison Officer
Dick Williams	TSRA Ranger
Edmund Tamwoy	Fish Receiver
Emmanuel Simitzis	Australian Live Seafood
Frank Loban	PZJA Traditional Inhabitant Member for Maluialgal
George Asse	
Gerald Bowie	TSRA Ranger
James Ahmat	PZJA Traditional Inhabitant Member for Maluialgal
Jermaine Ruben	
Maluwap Nona	Chairperson of Malu Lamar
Philemon Nona	
Phyllis Tamwoy	
Troy Stow	TSRA Ranger
Youngas Bowie	Fish Receiver

Table 7. Ugar (Stephen) Community attendance list

Name	Organisation
Alapasa Panuel	Sol Fishers
Jennie Morris	
Michael Passi	Mike Passi Divers PZJA Traditional Inhabitant member for Kemer Kemer Meriam
Pau Stephen	Brother Bear Fisheries Biosecurity
Robert Modee	
Rocky Stephen	Brother Bear Fisheries PZJA Traditional Inhabitant member for Kemer Kemer Meriam
Victor Morris	
William Stephen	Sol Fishers

Table 8. Warraber (Sue) Community attendance list

Name	Organisation
Aken Baragud	TSRA Ranger
Alfred Billy	My Pathway
Boggo Billy	My Pathway
Elizabeth Mari	My Pathway
Ettie Gela	Torres Strait Island Regional Council
Ewelu Mene	My Pathway
Harold Pearson	Macoy Enterprise/TSIRC
Ian Larry	My Pathway
James Billy	Torres Strait Island Regional Council
James Bob	My Pathway
John Bob	My Pathway
John Bowie	My Pathway
John Larry	My Pathway
Joseph Mari	My Pathway
Kabay Tamu	Warraberalgal PBC Chair
Laura Pearson	Macoy Enterprise/TSRA Ranger
Nasona Bob	My Pathway
Nathan Pearson	Torres Strait Island Regional Council
Pattison Larry	My Pathway
Paul Mari	My Pathway
Peter Bob	Torres Strait Island Regional Council
Yessie Pearson	My Pathway
Young Bob	TSRA Ranger

Table 9. Mer (Murray) Community attendance list

Name	Organisation
Beimop Tapim	PBC
Ben Barsa	Fisher
Cyril Gabey	Gelam Tail Seafoods
Falen D Passi	PBC Chair
Fraser Wailu	Fisher/diver
Gawomi Passi	MDW Fishers
James Zaro	Fisher
John K Tabo	MDW Fisheries TSRA Fisheries Quota Management Committee PZJA Traditional Inhabitant member for Kemer Kemer Meriam
John S Tabo	PBC
Lyall Kelly	Fisher
Michael Passi	Mike Passi Divers PZJA Traditional Inhabitant member for Kemer Kemer Meriam
Nakimie Maza	Fisher/diver
R M Kaigey	
Rocky Stephen	Brother Bear Fisheries PZJA Traditional Inhabitant member for Kemer Kemer Meriam
Sabu Wailu	Fisher/diver

Table 10. New Mapoon Community (NPA) attendance list

Name	Organisation
Aaron Bamaga	
Albert Bond	
Billy Daniel	
Daniel Sebasio	
James Bond	
Mervyn Bond	
Michael Bond	Northern Peninsula Area Regional Council
Trevor Lifu	

Table 11. Injinoo Community (NPA) attendance list

Name	Organisation
Amanda Ewart	Ipima Ikaya RNTBC
Jerry Songoro	
Manihera Blarrey	
Nicolas Thompson	Deputy PBC Chair, Ipima Ikaya RNTBC
Roger Williams	

Table 12. Thursday Island (Torres Shire) Community attendance list

Name	Organisation
Charles David	
Graham Hirakawa	Fisher
Koro Samai	Fisher
Ned David	Gur A Baradharaw Kod Land and Sea Council (GBK)
Richard Takai	Fisher
Sandie Edwards	Torres Straits Seafood
Tony Shibasaki	Fisher
Yacoba	Fisher

Table 13. Mabuiag Community attendance list

Name	Organisation
Desmond Kris	
Deusia Ware	My Pathway
Douglas Bani	My Pathway
Evrardus Kaise	
Flora Warrior	TIB licence holder
Frank Whap	Community member
Gibson Joe	My Pathway
Harry Kris	
Jack Whap	My Pathway
Jimmy Kris	
Kadiab Gizu	Fisher
Noel Misi	My Pathway
Patrine Misi	
Phillip Billy	
Phillip Kepi	
Ricky Gizu	My Pathway
Ryan Kris	
Sarion Bani	My Pathway
Ted Whap	TSRA Ranger
Thomas J Holland	
Thomas Mene	Fisher
Tigi Bani	
Tyrus Fujii	My Pathway
William Gizu	Fisher
William Misi	My Pathway

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
MANAGEMENT Fishery management history – Torres Strait Spanish mackerel fishery	Agenda Item No. 4.3 For Discussion and Advice

RECOMMENDATIONS

That the RAG **REVIEW** and **PROVIDE ADVICE** on the management history document AFMA has commenced for the Spanish mackerel Fishery at **Attachment A** noting:

- a. the history is not yet complete and AFMA welcomes advice from members on advice provided to extend the range of the table; and
- b. it is intended to be a 'live' document that the RAG and Working Group may update on an ongoing basis.

BACKGROUND

1. AFMA has commenced compiling a management and data history for the Torres Strait Spanish Mackerel Fishery as an output from the FFRAG 7 data meeting held on 8 October 2020. A similar exercise will be completed for coral trout in future RAG meeting cycles, resource permitting.
2. The intention is to establish a common understanding of the history of the fishery in terms of management changes, research projects and data collection. A key part of this history is documenting changes in the industry (for example: when historically significant boats entered and left the fishery or were sold between operators). This history can then be used to inform future fishery assessments (for example interpreting trends in CPUE, timing of when key changes occurred) and proposed changes to management arrangements.
3. FFRAG members will be invited to consider the current draft and if possible, provide advice on any obvious gaps in the information so far compiled.

Torres Strait Finfish Resource Assessment Group
Summary of Torres Strait Spanish mackerel fishery commercial fishing history

Updated 23/10/2020

Figure1. Table of FFRAG reports and studies to understand major changes in the TSSMF over time. Events are colour coded according to the key below.

Management	Research projects	Stock assessments	Foreign fishing	Key history e.g boats active	Biological sampling
Date	Event	Source			
1942	Start of commercial fishing for Spanish mackerel, reportedly to supply Torres Strait Army Hospitals augment food supply during WW2. Army Fishing Unit (although mackerel catches were likely occurring for local consumption prior to WW2)	McPherson 1986 in Haines et. al summary of 1985 Port Moresby seminar			
1945-1957	Skipper Snowy Whitaker was known to have a vessel prior to the Trader Horn after WW2. This might have been <i>AFV Saint Hillaire</i> or <i>AFV Sawfish</i> .	McPherson pers. comm. AFMA interview Oct 2020.			
1957 to 1962	<i>AFV Winston</i> reportedly the major mackerel catching boat from 57-62 and the only Torres Strait fleet boat of a size and seaworthiness to fish at Bramble Cay. <i>AFV Winston</i> reportedly fished two dories for all years active. (<i>Geoff McPherson holds logbook data for AFV Winston and is reviewing</i>)	McPherson pers. comm. AFMA interview Oct 2020.			
1957 to ~1969	<i>AFV Trader Horn</i> active in TSFF from 1957 working Spanish mackerel until it refitted as a prawn trawler in the late 60's. Once this vessel moved to prawn other mackerel boats entered the Torres Strait (skipper Snowy Whitaker was protective of his fishing marks and market).	Kenny Bedford report at FFRAG 7, McPherson pers. comm. AFMA interview Oct 2020.			
1970s to 1980's	Four boats reported to be commonly working from Ugar at two sites with occasional fishing at Bramble Cay. One primary boat reportedly had 7-8 dories linked.	Rocky Stephen interview with father Daniel Stephen report given to FFRAG 7.			
1974	Torres Strait Fisheries Survey including mackerel, Aboriginal and Torres Strait Island Commission engaged in the survey. (Need further details was this aboard <i>AFV Winston</i> as reported by McPherson?)	Begg et al. 2006			
1975-1979	Catch data available from this time period from the Queensland Fish Board (or North Queensland Fish Board).	McPherson 1986			
1974-1986	Taiwanese gillnet fishery operated in Australian EEZ from NW Shelf to north of Gulf of Carpentaria, 8-16km driftnets targeting shark, tuna and mackerel.	FRDC Report 1990 Analysis of Taiwanese Gill-net Data			
1976-1993	Taiwanese gillnet fishery in operation in the adjacent Gulf of Papua under PNG licences. Mainly targeting sharks but known that up to 10% of catch was bony fishes from earlier years where catch reports are available. (Need to confirm date PNG licences stopped).	Chapau & Opnai, 1986 " <i>The Taiwanese Gillnet Fishery in the Gulf of Papua</i> " in Haines et. al summary of 1985 Port Moresby seminar.			

1977-1982	TSSMF Research conducted aboard <i>AFV Winston</i> , scientist John Carlton (QLD Fisheries) and skipper Jack Jarret. Same vessel and procedures each year meaning this study is likely a good insight into the fishing at this time in history.	McPherson pers. comm. AFMA interview Oct 2020.
1979, November	Australian Fishing Zone (AFZ) ¹ declared as the NT gillnet fishery develops in late 70s. This declaration limited the impact of Taiwanese gillnet fishery. Taiwanese catch dropped from 25,000t of all species p.a. to 10,000 t for all species p.a. post 1979.	FRDC Report 1990 Analysis of Taiwanese Gill-net Data
Late 70s, early 80s	Thursday Island local Tony Tardent worked as a deckhand on <i>AFV TRADER HORN</i> .	Kenny Bedford report to FFRAG 7.
1984/1985	<i>AFV Winston</i> was sold by the Jarret family after fishing Torres Strait for X time period.	McPherson pers. comm. AFMA interview Oct 2020.
1985	Torres Strait Treaty established and Torres Strait Fisheries Act. Establishment of Torres Strait Protected Zone Joint Authority (PZJA) to regulate all fisheries in Torres Strait. Transferable licences issued to non-traditional inhabitants who could demonstrate history and commitment to fishing in Torres Strait. Licences subject to strict vessel replacement regulations related to vessel size. Vessels restricted to less than 20 m in length. Traditional inhabitants could obtain the commercial fishing license from PZJA. Ban on netting of Spanish mackerel. Minimum legal size of 45 cm TL for Spanish mackerel.	Begg et al. 2006
1985	Genetic variation and population structure of Torres Strait Spanish Mackerel.	Shaklee et al. 1985
1986	Aust. Govt. limits length of gillnets to 2.5km within EEZ to lower risk to dolphins which makes the legal Taiwanese gillnet fishery uneconomical (and it generally means requests for legal licences cease soon after).	FRDC Report 1990 Analysis of Taiwanese Gill-net Data
1988	AFMA SM01 daily fishing logbook introduced – compulsory for non-islander and PNG fishers, replaces Queensland LF03 logbook	Begg et al. 2006
1989	Tarawa Declaration signed 11 July 1989 by Pacific Island nations - calls on Japan and Taiwan to cease driftnet fishing. https://www.forumsec.org/1989/07/10/tarawa-declaration/ <i>Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific</i> limits driftnets to 2.5km which impacts Taiwanese legal operations https://en.wikipedia.org/wiki/Wellington_Convention	(web links)
1989	6-7 Dec 1989 Environmental Management Committee: Australian government seeking information from PNG on a PNG licenced Taiwanese driftnet vessel “Mao Hua” drift-netting near the TSPZ. Issue raised in the Australian Senate in connection with wildlife impacts (Greenpeace involved?).	Environment Management Committee Meeting Record 6-7 December 1989
1990	AFMA SM02 daily fishing logbook introduced	Begg et al. 2006
1990	Skipper Tony Vass (FFRAG member) begins fishing Torres Strait mackerel until 2007 buyout.	
1991	December 1991: United Nations resolution calling for worldwide moratorium on driftnet fishing.	

¹ <https://www.agriculture.gov.au/fisheries/domestic/zone>

1992	IUU incident with two Taiwanese vessels <i>FFV Sheng Fu</i> and <i>FFV Hwa Si</i> , apprehended. One running aground at Turu Cay, ghost nets retrieved afterwards up to 10miles in length.	AFMA 2020 advice to Spanish mackerel project team.
1998	Minimum size limit of 45cm TL introduced for Torres Strait for all mackerel species. Fishing methods restricted to trolling, hand-lining and drop-lining.	Begg et al. 2006
1999	Management transferred from QDAF to PZJA with AFMA engaged. . Traditional inhabitants required to hold a current Torres Strait Traditional Inhabitant Fishing Boat Licence (TIB) or Torres Strait Fishing Boat Licence for commercial fishing in TSPZ. Fishery expanded to include spotted, school, shark and grey mackerel in addition to Spanish mackerel.	Begg at al. 2006
2001 and 2002	Investment warnings issued by Aust. Govt. ahead of TSFF structural adjustment (6 Nov 2001 and 15 Feb 2002).	AFMA
2003	Voluntary islander docket book (TDB01) introduced 2003, in use until mandatory Torres Strait Fish Receiver System (AFMA CDRs) started in December 2017.	AFMA
2004	AFMA led (John Marrington) voluntary industry length frequency and sexing program provides 1789 samples (length and sexing only, no ageing data performed). Sampling methodology is available.	AFMA 2004 Torres Strait Mackerel/Linefish Logbook Supplementary Information
2004	Minimum legal size increased to 75 cm TL for Spanish mackerel. Minimum legal size increased to 60 cm TL for spotted mackerel. Minimum legal size increased to 50 cm TL for school, shark and grey mackerel.	AFMA
2005	PZJA decision on total ban of gillnetting in the Torres Strait for commercial purposes.	AFMA
2006	Begg et al. First Stock assessment of Torres Strait Spanish mackerel.	Begg et al. 2006
2007	Structural adjustment and buyout - fishery access becomes 100 per owned by Traditional Inhabitants	
2013	<i>Torres Strait Finfish Management Plan 2013</i> implemented.	
2016	Assessment update for Torres Strait Spanish mackerel fishery.	O'Neill 2016
2017 (1 July 2017)	Vessel monitoring systems introduced in Torres Strait primary tender operation vessels. (TIB and TVH - no VMS on tenders or sole operating dinghies)	
2017 (1 Dec 2017)	TDB02 Catch Disposal Records become mandatory for all Torres Strait commercial catch (TIB and TVH-sunset sectors)	
2017 (Nov 2017)	PZJA Torres Strait Finfish Resource Assessment Group formed and inaugural meeting to progress Harvest Strategy	
2019	2019-20 Torres Strait Biological Sampling Program run	QDAF project lead, Jo Langstreth.

TORRES STRAIT FINFISH FISHERY RESOURCE ASSESSMENT GROUP	Meeting 8 4-5 November 2020
RESEARCH Outcome of the Torres Strait Scientific Advisory Committee meeting – Research Priorities	Agenda Item 5.1 For NOTING

RECOMMENDATIONS

1. That the Finfish RAG **NOTE** a verbal update to be provided by AFMA on the outcomes of Torres Strait Scientific Advisory Committee (TSSAC) meeting scheduled for 2 November 2020 to recommended research priorities for potential funding in 2021/22.

KEY ISSUES

1. At their 8 October 2020 meeting (FFRAG 7 Data Meeting) the RAG discussed and provided advice on research priorities for the Fishery. The RAG recommended four research priorities which are to be considered by TSSAC for funding in 2021/22 financial year. The priorities were:
 - a. Biological sampling for Spanish mackerel (Essential) and Coral Trout (Desirable)
 - b. Updating the Spanish mackerel stock assessment
 - c. Investigating an alternative index of abundance for Spanish mackerel (Close Kin Mark Recapture)
 - d. Development of a harvest strategy.
2. On 20 October 2020 AFMA sought comments from RAG member on draft scopes written by AFMA. The draft scopes circulated for comment are at **Attachment A**.

5.1 Attachment A Draft research scopes for Finfish Fishery priorities recommended by the FFRAG on 8 October 20 (FFRAG 7)

Spanish Mackerel Biological Sampling with an extension option for coral trout sampling.

Project Need

The Torres Strait Finfish Fishery Spanish mackerel stock assessment is an annual age-structured model which uses all available catch-effort data and fish age-frequency data. Age data is an important input into the stock assessment, helping to understand: changes in abundance, the impact of fishing and fishing selectivity, as well as recruitment variability. As a result the data is important to improving the accuracy of the assessment. The assessment is used to calculate the Recommended Biological Catch of Spanish mackerel for the fishing season. After a long hiatus, the collection of age and length data resumed in the 2019-20 fishing season (most recent ageing data before this was from 2005).

Samples are now being collected as a part of the project *Torres Strait Finfish Fishery: Coral trout and Spanish mackerel biological sampling* (AFMA project number: 190851), which has been funded for 2020-21 fishing season. These data will be incorporated into the 2021 stock assessment. Under the project, for the first time, samples will be collected from coral trout.

Having now considered the positive progress made in establishing a biological sampling program and the data collected to date, the PZJA Finfish Fishery Resource Assessment Group (FFRAG) have recommend ongoing sample collection to support efforts to establish an informative time series. A time series allows trends overtime to be detected and accounted for in the assessment. Recruitment events are hypothesised by the FFRAG to be driving fishing years with good catch rates.

A need has also been identified through the FFRAG to collect and maintain a collection of tissue samples from all Spanish mackerel sampled through this project. The objective of this collection is to support future genetic studies to clarify our understanding of stock structure and/or supporting development of a fishery independent measure of stock abundance (i.e. close kin mark recapture, which is reliant on building a series of genetic samples over time).

Desired outcomes:

In consultation with AFMA and FFRAG and stock assessment team:

- Continuation of the data collection and ageing program established through the AFMA funded project titled: *Torres Strait Finfish Fishery: Coral trout and Spanish mackerel biological sampling* (project number: 190851), for the next three fishing seasons: 2021-22, 2022-23 and 2023-24; and
- Delivery of ageing and length frequency data plus associated report, to AFMA within an agreed timeframe.
- Collection and housing of tissue samples from all Spanish mackerel sampled to support future genetic studies.
- Extension option – although Spanish mackerel biological data is the priority for this project, the TSSAC would also like proposals to include an option to collect the same biological data for coral trout through these additional years. Costings should be provided for Spanish mackerel data collection alone, and separately for adding on coral trout data collection and otolith preparation and age analysis.

Spanish mackerel stock assessment

Project need

The Torres Strait Finfish Fishery Spanish mackerel stock assessment is an annual age-structured model which uses all available catch-effort data and fish age-frequency data. The assessment has been used by management to calculate the annual Recommended Biological Catch of Spanish mackerel since the 2017-18 fishing season. The assessment has been the subject of peer review by the PZJA Finfish Resource Assessment Group (FFRAG).

The latest stock assessment update was considered by the FFRAG on 27-28 November 2019 with the results showing:

- a) Biomass has been on a decline since 2009-10; i.e. the standardised catch rate of legal-sized Spanish mackerel (the abundance index) for the sunset fishing operations, had declined since 2009-10. Standardised catch rates have reached near historic low levels and did not substantially differ in 2018-19 to the previous assessment using data up to June 2018.
- b) The estimated median 2018–19 biomass was 23 per cent (ranging between 14% to 37%) of unfished biomass (B_0) estimated in 1940–1941. This value is close to the default Commonwealth Harvest Strategy Policy (HSP) limit reference point (LRP) of 20% of unfished biomass.
- c) Recent fishing mortality is not exceeding F_{MSY} (a harvest rate to achieve Maximum Sustainable Yield from the stock). 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.

In line with advice from the FFRAG, annual updates to the Spanish mackerel stock assessment are considered necessary to closely monitor the status of stock, noting the most recent biomass estimates are close to the HSP LRP. Any departure in the medium-term from undertaking annual stock assessments is best informed through further work to develop a harvest strategy for the Fishery. In develop advice on a future harvest strategy for the fishery, FFRAG previously recommended (November 2019) that annual stock assessments be undertaken until the stock is assessed at being at or above B_{40} .

Future assessment updates are to be refined in accordance with FFRAG recommendations. This may include recommendations on approaches for reducing uncertainty in available data e.g. addressing potentially hyper-stable catch rates from fishing a breeding aggregation and working on incorporating historic data that informs the earlier years of the fishery. The assessment will also work with the FFRAG on refining the preferred model runs.

Desired outcomes

In collaboration with AFMA and the FFRAG, the project team will conduct an annual assessment of the Spanish mackerel stock for the next three fishing seasons: 2021-22, 2022-23 and 2023-24. The assessments must include characterising available data, examining previous assessments, modelling the stock dynamics, including all new fishery catch data, and providing recommendations on research and monitoring needs to support future assessments.

For each year, the project is to deliver a preliminary assessment to the FFRAG for technical review ahead of a final presentation and report to the FFRAG by an agreed timeframe. It is also expected that the project team will participate in an annual review of available data to be used as inputs to the assessment (the annual FFRAG Data Meeting).

Design study for an alternative index of abundance for Spanish mackerel stock.

Project need

The most recent stock assessment (2019) for the Torres Strait Spanish mackerel fishery (TSSMF) estimated the 2018 biomass level to be 23% of unfished biomass (ranging between 14 and 37%), which is approaching the default Commonwealth Harvest Strategy Policy limit reference point (LRP) of 20% of unfished biomass. Standardised fishery-dependent catch per unit effort (CPUE) data are currently the only source of information available to derive an index of abundance for the stock assessment.

The Spanish mackerel stock assessment is an aged structured model which uses all available catch, effort, length and age data. The assessment has been subject to peer review by the Torres Strait Finfish Resource Assessment Group (FFRAG). The FFRAG has identified a number of issues, including that the available CPUE data is from spawning aggregations of fish (Bramble Cay), indicating the potential for hyperstability in the CPUE data. Additionally, the small number of key vessels in the fishery providing CPUE data poses a significant risk to the CPUE time series should these vessels leave the fishery for any reason.

Torres Strait Spanish mackerel have a longevity of 13 years or more and the TSSMF stock is likely to have a relatively small population size. These factors, coupled with the uncertainty in CPUE as an indicator of stock abundance, and present biomass estimated to be near the LRP, means that the stock could be a suitable candidate for the development and application of a Close Kin Mark Recapture (CKMR) study, which would estimate current harvest rate and absolute spawner abundance. This novel genetic technique was recently discussed by the Finfish Working Group (at their November 2019 meeting) in the context of providing a fishery-independent estimate of absolute spawner abundance for the Torres Strait Spanish mackerel stock as an alternative to fishery-dependent CPUE data. In addition to absolute spawner abundance, CKMR can also estimate other parameters such as total mortality and connectivity within Torres Strait and between adjacent fisheries should genetic samples be collected and available for study.

A scoping study is required to investigate and advise the PZJA advisory committees (Finfish RAG, Finfish Working Group) and PZJA partner agencies (AFMA, TSRA, QDAF) on the likely efficacy of CKMR techniques for providing an alternative index of spawner abundance for the TSSMF independent of fishery logbook data.

It is noted that such a study may have relevance for Spanish mackerel stocks across northern Australia. A project with commensurate co-funding to cover all work to cover other jurisdictions may be considered.

Desired outcomes

Investigate and report on the feasibility of a CKMR study for the Torres Strait Spanish mackerel Fishery TSSMF. In doing so:

- Use the available stock assessment model as a basis to develop a CKMR population model for Torres Strait Spanish mackerel that gives realistic consideration of achievable precision of key population parameters, such as recent spawning population, spawning population trends, reproductive output at age, and total mortality
- Use the CKMR population model to design a sampling program that would achieve a desired level of precision (e.g. $CV < 0.2$) in the spawner abundance estimate, considering the sample size required and feasibility of collecting samples by liaising with the Torres Strait Finfish Biological Sampling Program. The sampling design should consider the time in which sufficient information would be available to augment the outputs of the stock assessment and inform sustainable catch limits
- Consider appropriate genetic markers to provide the required level of confidence in the identification of kin; and
- Submit and present reports to the FFRAG and AFMA within an agreed timeframe.

Harvest strategy development for the Torres Strait Finfish Fishery (Spanish mackerel and coral trout)

A Harvest Strategy (HS) for the Torres Strait Finfish Fishery (TSFF) is required to guide future decisions on sustainable commercial catch limits and potential expansion of the fishery using indicators of stock status. The strategy will help the fishery achieve its ecological, economic and social management objectives consistent with the *Torres Strait Fisheries Act 1984*, *Torres Strait Finfish Fishery Management Plan 2013* and the *Commonwealth Fisheries Harvest Strategy Policy and Guidelines*.

A HS for the key target species of Spanish mackerel and coral trout will also guide future investment on finfish research, assessment, data collection and monitoring to make sure the shared interests of Torres Strait Traditional Inhabitants and other fishery stakeholders are balanced in developing biologically, socially and economically sustainable fishing opportunities.

An AFMA-funded project, led by CSIRO, titled: *Harvest Strategies for the Torres Strait Finfish Fishery* was funded in 2017/18 and 2018/19. The Finfish RAG considered the outputs of this project at their FFRAG 6 (October 2019) meeting. The RAG noted outputs achieved to date and identified gaps that require further development. At their FFRAG 7 meeting (October 2020) the RAG recommended a follow-up project to build on the outputs of this project and continue development of the strategies for Spanish mackerel and coral trout.

It is expected that development of this HS will involve a series of stakeholder workshops to ensure traditional inhabitant fishers provide input into the final HS design. It is noted that a tiered HS may be appropriate for the Finfish Fishery, recognizing the current status of the Spanish mackerel stock and available data for coral trout at present.

Desired outcomes:

In consultation with AFMA, FFRAG and fishery stakeholders, the HS project team will develop and recommend an updated HS framework for Spanish mackerel and coral trout, noting a tiered HS may be appropriate, detailing:

1. target and limit reference points agreed by stakeholders
2. indicators of stock status
3. harvest control rules (decision rules) which can guide fishery stakeholders and managers on responses should these targets / limits be reached.
4. data requirements to support the harvest strategy
5. options for monitoring and assessment to meet these data requirements for the tier levels as the fisheries develop.

Applicants are encouraged to submit an optional two part proposal. The first part of the proposal is to be an application to address the above points with a timeframe and budget. The second optional part of the application could be a proposal with a modified budget and timeframe to also include management strategy evaluation testing alongside or as a succinct program of work following the initial HS development.

TORRES STRAIT FINFISH FISHERY RESOURCE ASSESSMENT GROUP	Meeting 8 4-5 November 2020
RESEARCH Project update – Spanish mackerel and coral trout biological sampling	Agenda Item 5.2 For NOTING

RECOMMENDATIONS

1. That the Finfish RAG **NOTE** the update to be provided at the meeting by Jo Langstreth, Queensland Department of Agriculture and Fisheries (QDAF), on the biological sampling project funded in 2019/20 and the project recently funded for the 2020/21 fishing season.

KEY ISSUES

1. Age data is an important input into the Spanish mackerel stock assessment, helping to understand: changes in abundance, the impact of fishing and fishing selectivity, as well as recruitment variability. In line with recommendations from the FFrag, the collection of age and length data for Spanish mackerel resumed in the 2019-20 fishing season (most recent ageing data before this was from 2005). QDAF, led by Jo Langstreth, was funded by AFMA and TSRA to undertake the sampling (AFMA Project number: 2019/0832, project title: *Enhancing biological data inputs to Torres Strait Spanish mackerel stock assessment*)
2. Further funding was committed to continue sampling in the current fishing season. Under the project, for the first time, samples will be collected from coral trout (AFMA project number: 190851, project title: *Torres Strait Finfish Fishery: Coral trout and Spanish mackerel biological sampling*).
3. Jo Langstreth will be attending the FFrag meeting to provide a project update. Members are asked to consider the update and if relevant, provide any advice on any additional initiatives to ensure industry support and participation in the sampling. **Attachment A** provides a brief summary of samples collected in 2019/20

Attachment A - Draft results sheet from Queensland Fisheries to provide results of round one of the Spanish mackerel biological sampling to Torres Strait communities and stakeholders.

DRAFT

Torres Strait Spanish mackerel sampling 2019–20 results

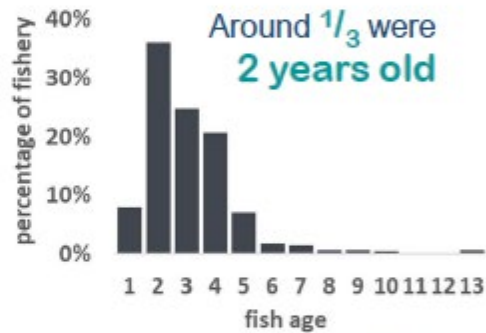
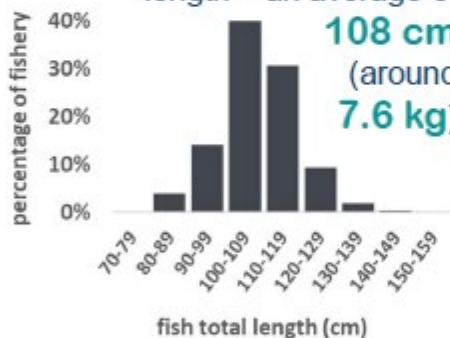
Commercial catch sampled in **Erub, Masig** and **Ugar** – and fishing grounds, including **Bramble Cay**



Mackerel are aged by counting growth rings of ear bones under a microscope – just like growth rings of a tree trunk!



Most fish caught were between **100 cm** and **120 cm** total length – an average of **108 cm** (around **7.6 kg**)



The oldest fish was **13 years old**



The largest fish was a total length of **158 cm**



Around **2/3** were **female**



Thanks to everyone who provided data to help communities understand their fisheries. We need more volunteers in 2020–21.

If you'd like to help, call:

- Fisheries Queensland ☎ 13 25 23
- Australian Fisheries Management Authority ☎ 1300 723 621



Australian Government
Australian Fisheries Management Authority



Queensland Government

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
OTHER BUSINESS	Agenda Item No. 6.1 FOR NOTING

RECOMMENDATION

1. That RAG members **NOMINATE** and **DISCUSS** any additional items of business for the meeting.

PZJA Torres Strait Finfish Resource Assessment Group	Meeting 8 4-5 November 2020
Meeting schedule and priorities	Agenda Item 6.2 For DISCUSSION and ADVICE

RECOMMENDATIONS

1. That the RAG **DISCUSS** and **PROVIDE ADVICE** on the proposed meeting schedule and priorities for 2021.

KEY ISSUES

1. A FFWG meeting is scheduled for 25-26 November 2020 in Cairns. Key agenda items will be providing TAC advice to the PZJA who will meet in January 2021.
2. That the next meetings of FFRAG are tentatively scheduled to be held in September, October and November 2021.
3. Based on the success of the 2020 FFRAG 7 data meeting, another data meeting is proposed for September 2021 (FFRAG 9) to provide an opportunity for RAG members to review data inputs to support the 2021 stock assessments. This will likely be a one day video-conference meeting.
4. Proposed management and research priorities for consideration by the FFRAG at upcoming meetings are as follows:
 - a. Progress the development of a harvest strategy. Subject to funding this will require additional workshops with members and broader industry stakeholders including the FFRAG;
 - b. Supporting possible changes to the Western Line Closure. This will require advice from the FFRAG on monitoring and assessment needs noting fishing in the Western Line Closure area may target different finfish species. Advice from the FFWG on amending the relevant legislative instrument and any supporting arrangements will also be required (to be discussed under Agenda item 4.2)
 - c. Update the daily fishing logbook (TSF01) in line with recommendations from the FFRAG (to be discussed under Agenda item 4.1). Subject to the RAG outcomes under Agenda item 4.1, it may be possible to finalise this item out-of-session.
 - d. Potential application of VMS on tenders. FFRAG provided advice on the potential scientific benefits from using VMS data to address data needs in the fishery at meeting 6 (27-28 November 2019). AFMA will continue to prepare information, including implementation costs across all licence holders to support further consideration of this initiative.

Table 1. Proposed Torres Strait Finfish Fishery FFRAG and FFWG meetings and key items for 2021.

Date	Group	Key agenda items
29 November 2020	FFWG 2020	TAC setting advice for 2021-22 season.
January 2021 (TBC)	PZJA	Decision on 2020-21 season TACs.
1 July 2021 - Torres Strait Finfish Fishery 2021-22 Season Opens		
Date TBC	FFRAG 9 Data Meeting	Review new data available from 2020-21 season to support 2021 stock assessments. Review and advise on research priorities
2-3 September 2021	FFRAG 10	Preliminary assessment update for Spanish mackerel.
14-15 October 2021	FFRAG 11	RBC advice for 2022-23
25-26 November 2021	FFWG 2021	TAC advice for 2023-23 season.