PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
PRELIMINARIES Meeting preliminaries	Agenda Item No. 1.1 FOR NOTING

RECOMMENDATIONS

1. That the Working Group **NOTE**:

   a. the Chairperson's acknowledgement of traditional owners and welcome address; and

   b. apologies received from members unable to attend.

BACKGROUND

2. Apologies have been received from the Queensland Department of Agriculture and Fisheries.

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
PRELIMINARIES Meeting preliminaries	Agenda Item No. 1.2 FOR NOTING

RECOMMENDATIONS

1. That the Working Group CONSIDER and ADOPT the draft agenda.

BACKGROUND

2. The proposed meeting data and key items for discussion were agreed at the Working Group meeting on 29 November 2019. A draft agenda was then circulated on 3 November 2020. No comments were received from members on the key items for discussion.

3. Minor amendments have since been made by AFMA to streamline the agenda (consolidated research items into a single agenda item, inclusion of the management history document into the AFMA update agenda item. A copy of the final draft agenda is at **Attachment A**.

Attachment A Draft Agenda Finfish Working Group meeting 25 November 2020

PROTECTED ZONE JOINT AUTHORITY
TORRES STRAIT FINFISH FISHERY WORKING GROUP

25 November 2020 (8:30 am - 5:00 pm)

Novotel Oasis Cairns

DRAFT AGENDA

The meeting will open at 8.30am on Wednesday 25 November 2020.

AGENDA ITEM 1 PRELIMINARIES

1.1 Acknowledgement of Traditional Owners, welcome and apologies

The Chair will welcome FFWG members, permanent observers, invited participants and any observers to the November 2020 meeting of the Torres Strait Finfish Working Group.

1.2 Adoption of agenda

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

1.3 Declarations of interest

FFWG 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 FFWG will note the status of action items arising from previous meetings.

AGENDA ITEM 2 WORKING GROUP UPDATES

2.1 Industry and scientific updates

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

2.2 Government member updates

The FFWG 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 if in attendance.

AGENDA ITEM 3 TOTAL ALLOWABLE CATCH ADVICE

3.1 Spanish mackerel Total Allowable Catch advice for the 2021-22 season

Having considered advice from the FFRAG 8 (4-5 Nov 2020) on Recommended Biological Catches and best estimates of catches taken outside the fishery, FFWG will discuss and provide advice on Total Allowable Catches for the 2021-22 fishing season for Spanish mackerel.

3.2 Coral trout Total Allowable Catch advice for the 2021-22 season

Having considered advice from the FFRAG 8 (4-5 Nov 2020) on Recommended Biological Catches and best estimates of catches taken outside the fishery, FFWG will discuss and provide advice on Total Allowable Catches for the 2021-22 fishing season for coral trout.

AGENDA ITEM 4 MANAGEMENT

4.1 Western line closure

FFWG are asked to discuss and provide advice on the review of the Western Line Closure including the suggestion to lift the closure for the 'top-hat' area of the Torres Strait Protected Zone north of Turnagain Island.

4.2 Torres Strait Finfish Fishery management priorities

FFWG are asked to discuss and provide advice to AFMA on management priorities for 2021-22.

AGENDA ITEM 5 RESEARCH

5.1 Research updates

FFWG will note an update on outcomes from the 2 November 2020 TSSAC meeting including four research project scopes relevant to the Torres Strait Finfish Fishery.

AGENDA ITEM 6 OTHER BUSINESS

6.1 Other business

The Working Group is invited to nominate any other business for discussion.

6.2 Date and venue for next meeting

The FFWG will confirm arrangements for meetings in 2021.

CLOSE OF MEETING

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
PRELIMINARIES Declarations of interests	Agenda Item No. 1.3 FOR ACTION

RECOMMENDATIONS

That the Working Group:

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 Finfish Fishery Working Group (FFWG) 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 Working Group 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

5. 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 (**Attachment A**).

6. FFWG members are asked to provide the executive officer with a list of declared interests.

7. 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.

8. 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.

9. 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.

Attachment A Register of Declared Interests from FFWG meeting or 29 November 2020 and FFRAG meeting on 4-5 November 2020.

Name	Position	Declaration of interest
Andy Bodsworth	Independent Chair	Independent Consultant – Cobalt Marine Resource Management. Has previously been commissioned to undertake Torres Strait related fisheries research projects (For example the Torres Strait Finfish Fishery Action Plan).
Rocky Stephen	Traditional Inhabitant Industry Member, Kemer Kemer Meriam (Ugar, Mer, Erub)	Councillor for Ugar, Chairperson of Kos and Abob Fisheries Ugar, Works with brother in a commercial fishing business on Ugar, Eastern cluster member for the PZJA Finfish RAG and Working Group. Torres Strait Scientific Advisory committee member. Does not hold a TIB licence. TSRA Board Member for Ugar. TSRA Finfish Quota Management Committee member of Zenadth Kes Fisheries company.
Hilda Mosby	Traditional Inhabitant Industry member, Kulkalgal Cluster (Masig, Warraber, Iama, Poruma) TSRA Board Member for Masig.	No direct interest in fisheries but has long history with Torres Strait fisheries through family involvement.
Tenny Elisala	Traditional Inhabitant Industry Member, Gudmalulgal (Saibai, Dauan, Boigu).	TSRA Ranger Dauan, TIB licence holder.
	A/g Executive Officer	
Selina Stoute	AFMA Member	Nil
Mark Anderson	TSRA Member	No personal pecuniary interests. TSRA holds finfish quota in trust on behalf of Traditional inhabitants and administers the annual leasing process to Sunset licence holders to generate revenue
Michael O'Neill	Scientific Member	Principal Fisheries Scientist, Queensland Department of Agriculture and Fisheries. Member of PZJA Finfish RAG and Working Group. Project team member for the Torres Strait (Spanish mackerel, coral trout) biological sampling program. Principal scientist for TSSAC project to develop a harvest strategy for the Torres Strait Finfish Fishery.

Name	Position	Declaration of interest
David Brewer	Scientific Member	Director – Upwelling P/L (David Brewer Consulting) which has no current Torres Strait projects or pecuniary interests. 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, Redlands City Council. Co-investigator on current Torres Strait research project scoping study for non-commercial take. Co-investigator on Torres Strait non-commercial fish fishery project funded by TSSAC with RAG member Kenny Bedford.
Meeting observers and declarations of interests		
Tony Vass	Industry permanent observer	No financial interest in Torres Strait Fisheries. Previous Torres Strait finfish operator.

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
PRELIMINARIES Action items and record from last meeting	Agenda Item No. 1.4 FOR NOTING

RECOMMENDATIONS

1. That the Finfish Fishery Working Group **NOTE:**

    a. Progress against actions arising from past FFWG meetings; and

    b. The final meeting record of the FFWG meeting on 29 November 2019.

KEY ISSUES

Actions arising

2. Two actions arose at the last FFWG Meeting (29 November 2019) and there is a single outstanding action item from FFWG Meeting 20 March 2018. **Table 1** below outlines progress against this item.

Meeting record

3. The draft meeting record from FFWG 29 November 2019 was circulated for member comments on 16 December 2020. Minor editing comments were received from Mr David Brewer and TSRA. TSRA also requested the following addition to record for agenda item 3.1 on the Spanish mackerel TAC recommendation for the 2020-21 fishing season:

    The TSRA noted they continue to have concerns with the use of CPUE as the index of abundance in the fishery, the limited number of boats driving the estimated decline in abundance and other issues that might be impacting such as change in fisher experience and increased shark depredation.

4. All comments were incorporated into in the final record.

5. The meeting record was closed and ratified as a true and accurate record and posted on the PZJA website for public viewing: https://www.pzja.gov.au/torres-strait-finfish-groups

ATTACHMENTS

Attachment A - Finfish Working Group Meeting, 29 November 2019 meeting record.

Attachment B - Finfish Resource Assessment Group Meeting, 8 October 2020, meeting record

Table 1 Status of actions arising from FFWG meetings that are still in progress, yet to progressed or completed but yet to be reported on.

Meeting	Action	Status as at FFWG Nov 2020
Nov 18	AFMA to organise a presentation from Biosecurity Australia to present to the FFWG on monitoring in place to prevent invasive fish species such as climbing perch and snakehead from entering the Torres Strait from PNG (and vice versa for cane toads).	**In progressed** AFMA proposes that this presentation be scheduled for a future meeting. Arrangements were made for a biosecurity officer to join a previous FWG meeting however their availability changed.
Nov 19	TSRA to circulate the baitfish scoping study report presented at the 2018 Fisheries Summit to the FFWG.	TSRA to provide an update report
Nov 19	FFRAG to advise on the feasibility and likely cost of the close kin genetic technique to examine absolute abundance in the Spanish mackerel fishery and consider recent advances in the field (e.g. Southern Bluefin Tuna, School Shark), noting also that collection of Spanish mackerel tissue samples is occurring under biological data. FFRAG should also advise on any other data and research priorities that could assist in improving the assessment of the Torres Strait Spanish mackerel stock.	**Complete** FFRAG considered research priorities for the Finfish Fishery at its 7th meeting held on 8 October 2020. The FFRAG recommended four research priorities be considered for funding in 2021-22. Draft research scopes for these priorities were circulated to the FFWG on 20 October 2020 for comment. Outcomes of the FFRAG meeting is at **Attachment B**.

Key

Status	Definition
Complete	Action has been addressed
In progress	Work to complete the action has commenced but it not yet finalised
To be progressed	Work is yet to commence

PZJA Torres Strait Finfish Working Group

29 November 2019
Thursday Island, Torres Strait

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

Box 7051, Canberra Business Centre, ACT 2610 / Ph. (02) 6225 5555 / Fax (02) 6225 5500 / AFMA Direct 1300 723 621 afma.gov.au

Agenda Item 1 – Preliminaries

1.1. Opening Prayer, Acknowledgement of Traditional Owners, Welcome, Apologies

The meeting was opened at 0845 hrs at the Torres Strait Regional Authority Boardroom, Thursday Island. The Chair welcomed attendees and acknowledged the Traditional Owners of the land on which the meeting was held.

Dr Trevor Hutton was welcomed to the FFWG by the Chair as a newly appointed permanent observer.

QDAF member Mr Tom Roberts, Traditional Inhabitant Member Mr Harry Nona and Malu Lamar (Torres Strait Islander) Corporation RNTBC were noted as apologies. FFWG noted that Traditional Inhabitant member Frank Loban would join from morning tea and that Traditional Inhabitant Member Cr Rocky Stephen would leave the meeting at 1300hrs.

The FFWG noted that the meeting was being recorded by AFMA to assist in the preparation of an accurate record. AFMA advised that these recordings are stored securely and are deleted once the final record is published.

1.2. Adoption of Agenda

The FFWG adopted the agenda as circulated.

1.3. Declaration of Interests

Table 1. Torres Strait Finfish Working Group members and declarations of interests

Name	Position	Declaration of interest
Andy Bodsworth	Independent Chair	Independent Consultant – Cobalt Marine Resource Management. Has previously been commissioned to undertake Torres Strait related fisheries research projects (For example the Torres Strait Finfish Fishery Action Plan).
Hilda Mosby	Traditional Inhabitant Member, Kulkalgal Cluster (Masig, Warraber, Iama, Poruma) TSRA Board Member for Masig.	No direct interest in fisheries but has long history with Torres Strait fisheries through family involvement.
Rocky Stephen*	Traditional Inhabitant Member, Kemer Kemer Meriam (Ugar, Mer, Erub) TSRA Board Member for Ugar.	Councillor for Ugar, Chairperson of Kos and Abob Fisheries Ugar, Works with brother in a commercial fishing business on Ugar, Eastern cluster member for the PZJA Finfish Working Group. Torres Strait Scientific Advisory Committee. Does not hold a TIB licence. Finfish RAG industry member. TSRA Board Member for Ugar. Newly appointed to the TSRA Finfish Quota Management Committee.
Frank Loban**	Traditional Inhabitant Member, Maluialgal Cluster (Badu, Moa, Mabuiag)	TIB licence holder (crab and crayfish) no finfish endorsement. Industry member on PZJA Hand Collectable Working Group and Torres Strait Scientific Advisory Committee to represent interests of western cluster.
Tenny Elisala	Traditional Inhabitant Member, Gudmalulgal (Saibai, Dauan, Boigu).	TSRA Ranger Dauan, TIB licence holder.

Name	Position	Declaration of interest
Andrew Trappett	Executive Officer FFRAG and FFWG.	Co-investigator on TSSAC research projects for Spanish mackerel stock assessment and mackerel biological sampling in a data services and industry liaison role. Co-investigator role is provided as an in-kind contribution from AFMA (in addition to the direct funding provided by AFMA).
Selina Stoute	AFMA Member	Manager of AFMA staff member Andrew Trappett who is co-investigator on Torres Strait research.
Allison Runck	TSRA Member	TSRA holds finfish allocation on behalf of Traditional Inhabitants. Involved with administration of leasing access to finfish fishery to sunset sector fishers. No role personally in decision making on access or quota pricing. Co-investigator on mackerel ageing project.
Michael O'Neill	Scientific Member	Principal Fisheries Scientist, Queensland Department of Agriculture and Fisheries. Principal scientist for TSSAC project to develop a harvest strategy for the Torres Strait Finfish Fishery.
David Brewer	Scientific Member	Director – Upwelling P/L (David Brewer Consulting) which has no current Torres Strait projects or pecuniary interests. 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, Redlands City Council. Co-investigator on current Torres Strait research project scoping study for non-commercial take.

*Cr. Rocky Stephen left the meeting at 1300 hrs.
** Frank Loban joined the meeting at 1030 hrs.

Table 2. Meeting observers and declarations of interests

Name	Position	Declaration of interest
Tony Vass	Industry permanent observer	No financial interest in Torres Strait Fisheries. Previous Torres Strait finfish operator.
Trevor Hutton	Permanent observer	CSIRO employee, CSIRO deliver a range of research projects in the Torres Strait. Was the Principle investigator on recently completed project to develop a draft Harvest Strategy project HS project and is expected to provide small contribution to the AFMA funded project *Climate variability and change relevant to key fisheries resources in the Torres Strait.*
Yen Loban***	TSRA	TSRA Fisheries Portfolio Member, TIB licence holder, TSRA Board Member, Torres Strait Council, Traditional Inhabitant Torres Strait.
Madeina David	TSRA	TSRA Fisheries Program, Cadet. No interests to declare.
Mark Anderson***	TSRA, Program Manager	Managing creation of an independent entity to hold resource rights (divesting from TSRA) by 1 July 2020, working on rolling out 20 million dollar investment in Torres Strait

Name	Position	Declaration of interest
		Fisheries covering, 180 traineeships over the next two years and fisheries infrastructure.
Liz McCrudden	TSRA	No interests declared. TSRA role involves supporting traditional inhabitant member on PZJA advisory committees and community visits for the Spanish Mackerel Biological Sampling project

***Yen Loban and Mark Anderson left the meeting at 1200hrs and re-joined at 1330hrs.

The Chairperson advised members and observers, that as provided in PZJA Fisheries Management Paper No. 1 (FMP1), all members of the Working Group must declare all real or potential conflicts of interest in the Torres Strait Finfish Fishery at the commencement of the meeting. Where it is determined that a direct conflict of interest exists, the Working Group may allow the member to continue to participate in the discussions relating to the matter but not in any decision making process. The Working Group 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 interests were provided by each meeting participant. These are detailed in the meeting participant tables above.

The FFWG followed a process where each group of members with similar interests were asked to leave the meeting room to enable the remaining members to:

- freely comment on the declared interests;
- agree if the interests precluded the members from participating in any discussions; and
- agree on any actions to manage declared conflicts of interest (e.g. the member may be allowed to participate in the discussions relating to the matter but not in the formulation of final advice).

The FFWG also noted that interest can be revisited throughout the meeting and that if any member becomes aware of a potential conflict throughout the meeting, they must immediately disclose the interest.

Fishing interests

Members with declared commercial fishing interests were asked to leave the meeting room (Mr Tony Vass, Cr. Rocky Stephen, Mr Tenny Elisala and TSRA officers). The FFWG noted that while fishers and/or their communities may have an interest, real or perceived, in management decisions, it was agreed that their expertise was critical in the development of management advice. It was also noted that interests can be revisited throughout the meeting. On this basis, it was agreed that the excused members be permitted to participate in discussions under all agenda items and the formulation of recommendations.

Research interests

Members with research interests (Andy Bodsworth, Michael O'Neill, Dave Brewer and Andrew Trappett, Allison Runck, Liz McCrudden) were asked to leave the meeting room. The FFWG noted that researchers and/or consultants may have a perceived or real interest in both advice on future research priorities and outcomes of currently funded research projects. The FFWG noted that future research priorities were not part of the meeting agenda and noted the benefit of having scientific expertise available at the meeting. On this basis, it was agreed that the excused members be permitted to participate in discussions under all agenda items and the formulation of recommendations.

Torres Strait Regional Authority

TSRA staff and TSRA Finfish Quota Management Committee members were asked to leave the meeting room (Allison Runck, Tenny Elisala, Yen Loban, Mark Anderson, Hilda Mosby, Liz McCrudden, Madeina David). It was noted that the TSRA have a role in administering the Finfish Quota Management Committee (FQMC) which uses community expertise to guide TSRA Board

decisions on the amount of catch to be seasonally leased to sunset fishers with revenue from leasing held by TSRA on behalf of Traditional Inhabitants. Members further noted TSRA's investment commitments for Torres Strait Fisheries designed to support growth in the TIB sector (increased participation and catch). Members agreed the importance of understanding these interests to ensure any real or perceived conflicts of interest can be managed throughout the meeting. It was agreed that the excused members be permitted to participate in discussions under all agenda items and the formulation of recommendations.

Australian Fisheries Management Authority

AFMA staff were asked to leave the meeting room (Selina Stoute and Andrew Trappett). Members noted that AFMA is focused on the sustainability of the fishery and management frameworks. Members noted the need to also ensure sustainability objectives are balanced with other objectives important to Torres Strait Fisheries such as having economic development opportunities for communities. It was agreed that the excused members be permitted to participate in discussions under all agenda items and the formulation of recommendations.

1.4. Actions and record from the last FFWG meeting, 20 March 2018

The FFWG noted the record of the previous meeting and status of actions arising. The FFWG noted that all actions were complete aside from a presentation on biosecurity monitoring for invasive pest fish species which is to be scheduled for a 2020 meeting of the FFWG.

Agenda Item 2 – Working group updates

2.1 Industry updates

The FFWG noted the following general updates from industry members and observers:

- Little fishing effort has been occurring in eastern Torres Strait communities due to poor weather over the last seven months but a change in the weather has seen communities resume fishing focusing on Spanish mackerel (Ugar and Erub) with Mer focusing on coral trout.
- The Spanish mackerel biological sampling project has been progressing well and visits to engage communities in the research have been well received, particularly hands-on involvement in collecting fisheries data (measuring fish and collecting ear bones for ageing). FFWG noted a good response to the engagement video played during community visits (FFRAG industry members extracting ear bones at QDAF Northern Fisheries Centre Cairns).
- Industry members advised that they are encouraging fishers to support the adoption of daily fishing logbooks and that they will continue to seek all available support from government for community visits with a focus on data to support sustainable fisheries and information flow.
- Industry advised that Warraber community had a continued interest in pursuing development of a local baitfish industry.

In noting the industry updates, the FFWG strongly supports continued inter-agency co-operation in focusing communication of management, data and science in Torres Strait communities noting the positive feedback to this engagement during 2019.

Action 1: TSRA to circulate the baitfish scoping study report presented at the 2018 Fisheries Summit to the FFWG.

2.2 Government agencies updates

Australian Fisheries Management Authority

The FFWG noted the written updates from AFMA (page 23 to 54) outlining a number of management updates. The AFMA member discussed three key updates from the paper.

Torres Strait Finfish Fishery Management Plan 2013

At its meeting on 19 November 2019 the PZJA agreed in-principle to establish an Independent Allocation Advisory Panel (IAAP) to consider options for the allocation of Finfish quota units under the *Torres Strait Finfish Management Plan 2013.* The PZJA Standing Committee has been directed by the PZJA to develop draft Terms of Reference for an IAAP for the PZJA's consideration.

Quota units are yet to be allocated under the Finfish plan. Although there is no formal quota system in place, leasing of individual catch allowances occurs annually. TSRA holds sunset licences on behalf of Traditional Inhabitants and, in consultation with stakeholders, administer an annual leasing process of those licences with agreed individual catch allowances. Catch allowances are implemented through licence conditions.

Of note, the *Tropical Rock Lobster Management Plan 2013* (TRL Plan) requires the PZJA to review the allocation of quota units to the Traditional Inhabitant sector within two years of the TRL Plan commencement (30 November 2020). At the commencement of the quota system on 1 December 2019, the TSRA will hold quota units on behalf of the Traditional Inhabitant sector.

Separate to the allocation review to be undertaken by the PZJA, the TSRA is working with stakeholders to establish an independent, non-profit entity to manage community-owned commercial fishery assets under the *Fisheries Regional Ownership Framework* project (FROF project). TSRA, through the FROF project, is consulting with stakeholders on the development of an entity to manage all entitlements currently held in trust by TSRA. This includes those in the Finfish Fishery. Clearly defined access entitlements, such as quota units, will be necessary to transfer the finfish leasing process to a non-government entity and/or person.

Tactical call for research funding applications

The Torres Strait Scientific Advisory Committee call for funding applications to address tactical research priorities are to be released in December 2019 and responses will be considered by FFWG in early 2020.

Legislative amendments

The current process to progress a range of amendments to the Torres Strait fisheries act and regulations is likely to take some years to complete due to completing Government priorities. Noting the need for improved catch reporting however, AFMA is aiming to work with stakeholders to develop a strategy to encourage a level of voluntary logbook reporting by TIB Fishers.

Torres Strait Regional Authority update

The TSRA member advised that the fisheries program was presently focusing on three key areas:

1. Working with stakeholders on the establishment of an independent entity to manage community-owned commercial fishery assets with a target date of July 2020.
2. Support of PZJA traditional inhabitant members in PZJA advisory groups, including training and development and increased support to improve communications with the broader Torres Strait community.

3. Rollout of Fisheries Infrastructure and Warpil – Fishing for our Future traineeship support packages to increase participation in full-time commercial fishing.

TSRA also advised that they have now completed and published a *Guide for Exporting Seafood Product handbook*.

Queensland Department of Agriculture and Fisheries

The FFWG noted the following updates from Science Member Dr Michael O'Neill, QDAF:

- The Queensland Government fisheries reform agenda continues to be implemented under the Sustainable Fisheries Strategy with new regulations introduced 1 September 2019.
- A present focus is on modernisation of data as newer technologies provide better information from fishing operations to help support stock assessment and management. Future research projects will investigate options including electronic monitoring systems.
- Stock assessments are being updated for Great Barrier Reef Red Throat Emperor and Coral Trout in 2020.
- A QDAF Spanish Mackerel Working Group is to be formed.
- Outcomes of the state-wide recreational fishing survey indicate that 943,000 Queenslanders identify as recreational fishers with participation rates up from the 2013 survey 15% levels to 19% of the population.

2.3 Papua New Guinea National Fisheries Authority (NFA) update

The FFWG noted NFA officers were unable to attend the meeting. However they wished to acknowledge their support for NFA's ongoing participation in future meetings.

2.4 Native title update

As Malu-Lamar RNTBC were not in attendance, no native title update was provided to the FFWG.

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

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

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

a) noted biomass has been estimated to be declining since 2009-10; i.e. the standardised catch rate of legal-sized Spanish mackerel (the abundance index), using logbook data from sunset fishing operations, had declined since 2009-10. Standardised catch rates have reached levels comparable to periods where total fishery harvests were significantly higher and did not substantially differ in 2018-19 to the last assessment using data up to 2017-18;

b) noted the results of the stock assessment update suggesting the estimated median 2018-19 biomass was 23 per cent (ranging between 14% to 37% (B14 and B37) of unfished biomass (B0) estimated in 1940-1941 and that this value is close to the default *Commonwealth Fisheries Harvest Strategy Policy: Framework for applying an evidence-based approach to setting harvest levels in Commonwealth Fisheries* (June 2018) (harvest strategy policy) limit reference point of 20 per cent of unfished biomass. Although still in development, the FFRAG and FFWG have recommended B20 as the limit reference point for the Spanish mackerel;

c) noted FFRAG advice that overfishing is unlikely to be occurring meaning the biomass decline is likely associated with factors, other than fishing pressure, such as broader environmental factors driving below average recruitment;

d) noted the FFRAG advice to consider applying a constant harvest rate of either F 40 or F 48 (i.e harvest rates that build the stock to either B 40 or B 48) based on the current exploitable biomass rather that applying a Maximum Sustainable Yield (FMSY) harvest rates based on the need for precaution as the estimated level of biomass approaches the limit reference point;

e) supported the FFRAG approach to assume below average recruitment scenarios in assessing stock projections for a range of harvest control rules and agreed that this an appropriate risk-management strategy given the proximity of the stock to the limit reference point;

f) noted FFRAG advice that risk associated with either an RBC of 56 or 71 tonnes of the stock falling below the limit reference point (B20) is consistent with the harvest strategy policy. An RBC of 71 tonnes has slightly higher risk but is still within accepted risk thresholds under the harvest strategy policy;

g) noted advice from the FFRAG that the best estimates of catches taken outside the commercial Fishery remain unchanged since the last season and supported the use of the same estimates noting that the members also had no new information. The catch estimates are detailed in **Table 3** of **Attachment B**.

h) agreed that based on best available information, the recommended TAC seeks to:

- ensure the sustainability of the stock by allowing for the stock to build and avoiding unacceptable risk of the stock falling below the limit reference point;

- minimise potential economic and social impacts such as the potential loss of available fisheries expertise (that can be shared with TIB fishers) from sunset licence holders and/or impacts on supply chain/market dynamics (although the likelihood of the latter occurring were considered low); and

- minimise impacts on the CPUE data series that may occur as a result of a reduced TAC and hence less sunset licensed vessels fishing for Spanish Mackerel; also noting application of new data is expected in the next stock assessment.

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

- stock assessments can deal with breaks in a CPUE. However a break does introduce additional uncertainty. For the Finfish Fishery it would be prudent to have a few years of overlap between the TIB CPUE series (in development) and the long-standing Sunset Licensee (ex TVH licences) CPUE series to enable the model to merge the two data sets.

- the next stock assessment update (2020) is expected to incorporate additional data including two years of TIB catch (and some effort data) from the Fish Receiver System, ageing and length frequency data from the biological sampling project plus analysis of environmental drivers. While additional data is likely to reduce uncertainty in the stock assessment, it may improve, maintain or even reduce our estimate of stock status.

- the close-kin genetic technique, if developed and applied successfully, could provide an estimate of absolute abundance (fish numbers) for the stock independent of the existing CPUE series. Tissue samples from Torres Strait Spanish mackerel are being collected and stored under the funded biological sampling project which may aid development of such a project and reduce some initial costs.

Action 2, FFWG 29 November 2019: FFRAG to advise on the feasibility and likely cost of the close kin genetic technique to examine absolute abundance in the Spanish mackerel fishery and consider recent advances in the field (e.g. Southern Bluefin Tuna, School Shark), noting also that collection of Spanish mackerel tissue samples is occurring under biological data. FFRAG should also advise on any other data and research priorities that could assist in improving the assessment of the Torres Strait Spanish mackerel stock.

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

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

- the results of the preliminary stock assessment presented for the previous fishing season (2018/19), which indicated that the stock biomass is likely to be high (the preliminary stock assessment estimated biomass to be around 80 percent (B80) of estimated virgin biomass with all of the model estimates of spawning biomass being above B65);

- continued low levels of reported catches (less than 20 tonnes (17.3 t) was reportedly taken in 2018/19 fishing season by sunset licensees and TIB combined); and

- there is no new information to justify (or guide) a changed management approach.

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

Agenda Item 4 – Harvest Strategy

The FFWG noted that the project tasked with developing a draft harvest strategy for the Torres Strait Finfish Fishery has closed and a final draft report has been provided to AFMA however the Principal Investigator is finalising further edits to the report. Once completed the report will be circulated to members.

The FFWG noted that the FFRAG is working through a range of outstanding matters with the

harvest strategy with further work to be undertaken next year. Members did however note that the objectives and design principles recommended by stakeholders for a future Finfish Fishery harvest strategy were relevant in considering advice on future TACs. For example, if biomass decreases be cautious, stock is not to go below the limit; and if biomass increases 'bank' fish by leaving more in the water.

Agenda Item 5 – Western Line Closure

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 FFRAG. 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.

Agenda Item 6 – Other business

No other items of business were nominated.

Agenda Item 7 – Next meeting and meeting close

The FFWG noted the next meeting was tentatively scheduled for 25-26 November 2020, a two-day meeting on Thursday Island, and that AFMA would canvas member availability for this date.

The FFWG Chair thanked attendees for their time, noting that their extensive and constructive discussion of the issues had resulted in a productive meeting.

The meeting was closed at 1700hrs.

Attachments

FFWG 29 Nov 19 Attachment A: Meeting agenda as adopted

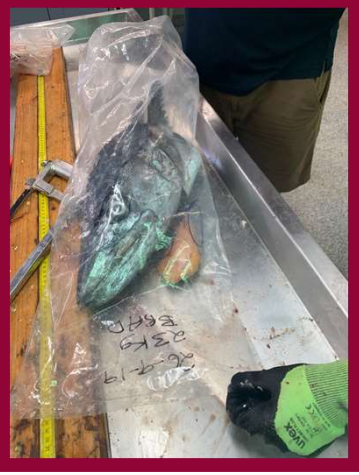
FFWG 29 Nov 19 Attachment B: Summary of FFRAG 6 (27-28 Nov 2019) key outcomes on RBC advice Spanish mackerel and coral trout.

FFWG 29 Nov 19 Attachment C: Update table of Finfish Fishery Draft Harvest Strategy developed as tabled at FFRAG 5 (31 Oct - 1 Nov 2019) with FFRAG comments.



Torres Strait FinFish Fishery: coral trout and Spanish mackerel biological sampling

Jo Langstreth (DAF)




Collaborators: Torres Strait fishers and communities, Fish Receivers, Fisheries Qld (QDAF), AFMA, TSRA, PZJA FinFish RAG members, TS stock assessment team

Queensland Government

Project objectives

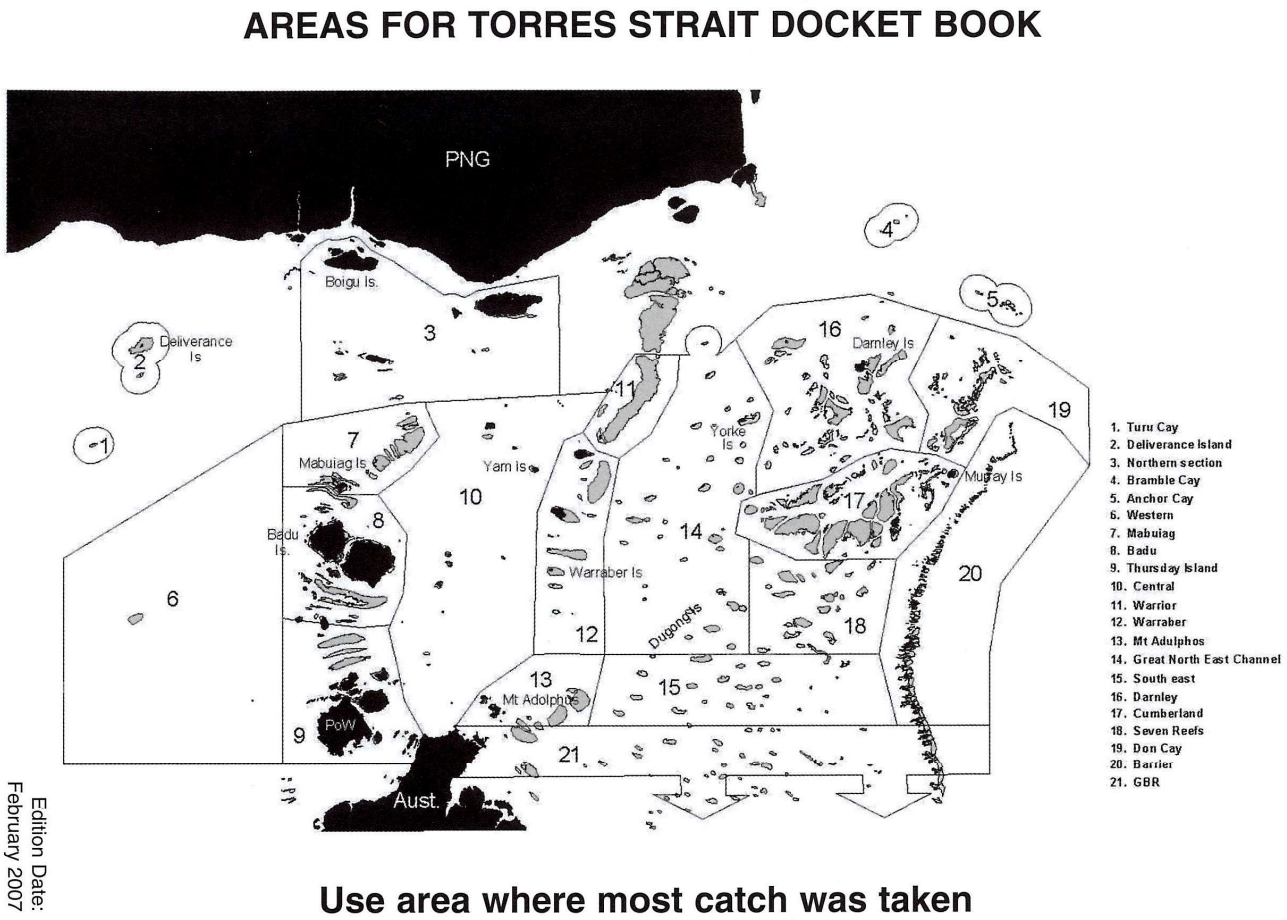
- Design a cost effective sampling program
- Engage with traditional and non-traditional fishing sectors
- Collect fish length measurements
- Collect and process fish samples for length, sex and age data
- Deliver length and age frequency

Methods

- Project design & methods
  - coverage across fishery areas, season and sectors
  - target sample sizes (1500 lengths from 50 catches, 500 otoliths)
  - lengths: measuring board datasheets, fish frames, staff collection
  - ages: head and frame collection
- Engagement
  - workshops held on island communities
  - phone calls and one-on-one meetings with TVH fishers

Methods

Spatial data resolution –broad areas – AFMA reporting grids

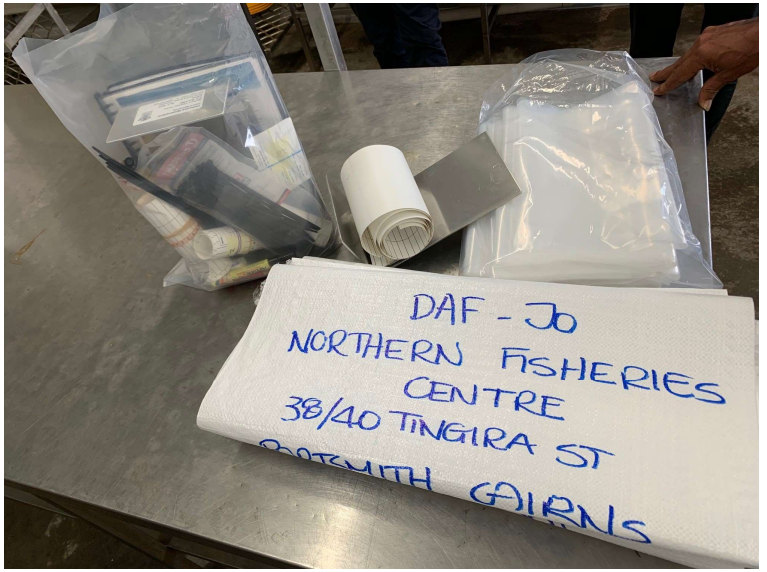


Workshops

- Erub
- Masig
- Ugar

Workshops

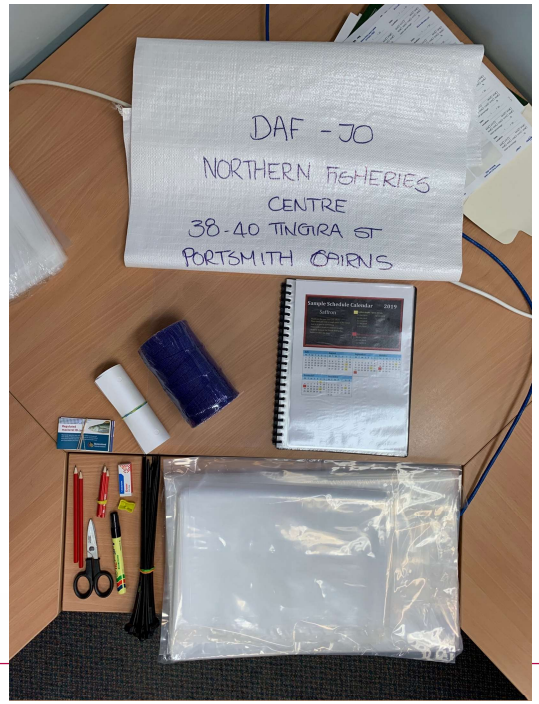
- Erub
  - workshop
  - community freezer
- Training - sample and data collection



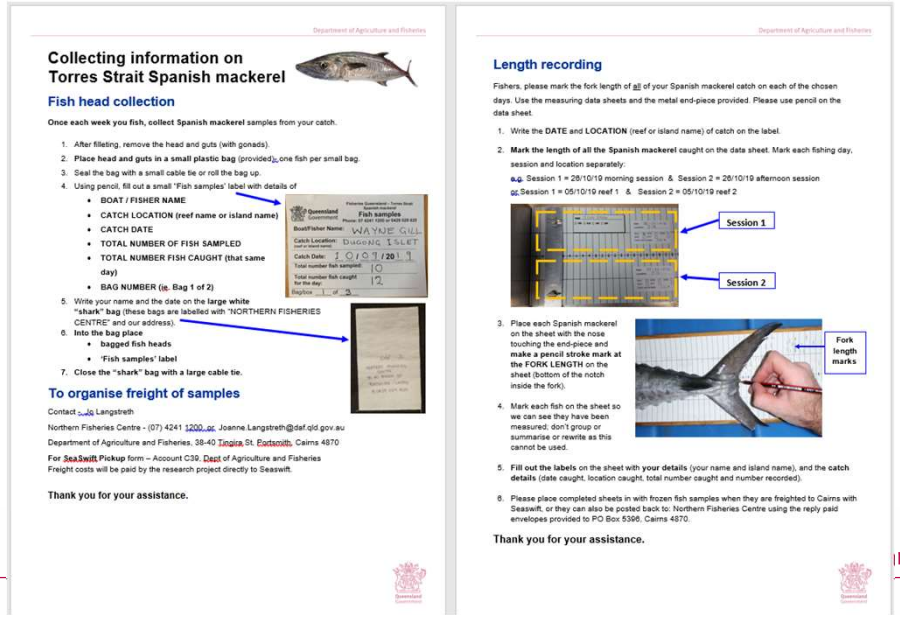
Sunset fishery

- Sampling kits with 4 vessels
- Samples being received in Cairns
- Lab processing of samples and data

Sampling kit



Sampling instructions



Collecting information on Torres Strait Spanish mackerel

Fish head collection

Once each week you fish, collect Spanish mackerel samples from your catch.

1. After filleting, remove the head and guts (with gonads).
2. Place head and guts in a small plastic bag (provided), one fish per small bag.
3. Seal the bag with a small cable tie or roll the bag up.
4. Using pencil, fill out a small "Fish samples" label with details of
   - BOAT / FISHER NAME
   - CATCH LOCATION (reef name or island name)
   - CATCH DATE
   - TOTAL NUMBER OF FISH SAMPLED
   - TOTAL NUMBER FISH CAUGHT (that same day)
   - BAG NUMBER (ie. Bag 1 of 2)
5. Write your name and the date on the large white "shark" bag (these bags are labelled with "NORTHERN FISHERIES CENTRE" and our address).
6. Into the bag place
   - bagged fish heads
   - 'Fish samples' label
7. Close the "shark" bag with a large cable tie.

To organise freight of samples

Contact Jo Langstreth

Northern Fisheries Centre - (07) 4241 1200, or Joanne.Langstreth@daf.qld.gov.au

Department of Agriculture and Fisheries, 38-40 Tingira St, Portsmith, Cairns 4870

For SeaSwift Pickup form – Account C39, Dept of Agriculture and Fisheries
Freight costs will be paid by the research project directly to Seaswift.

Thank you for your assistance.

Length recording

Fishers, please mark the fork length of all of your Spanish mackerel catch on each of the chosen days. Use the measuring data sheets and the metal end-piece provided. Please use pencil on the data sheet.

1. Write the DATE and LOCATION (reef or island name) of catch on the label.
2. Mark the length of all the Spanish mackerel caught on the data sheet. Mark each fishing day, session and location separately:
   e.g. Session 1 = 28/10/19 morning session & Session 2 = 28/10/19 afternoon session
   or Session 1 = 05/10/19 reef 1 & Session 2 = 05/10/19 reef 2

Session 1
Session 2

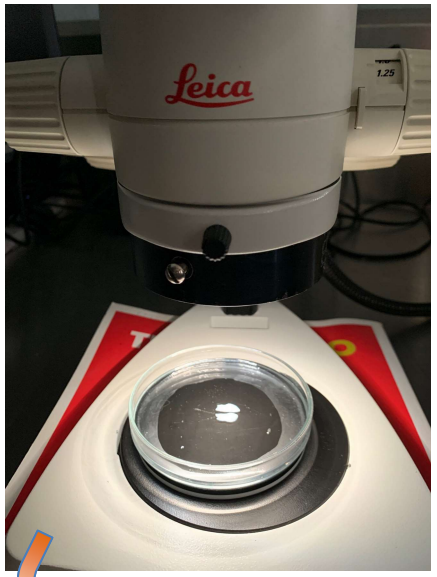
3. Place each Spanish mackerel on the sheet with the nose touching the end-piece and make a pencil stroke mark at the FORK LENGTH on the sheet (bottom of the notch inside the fork).

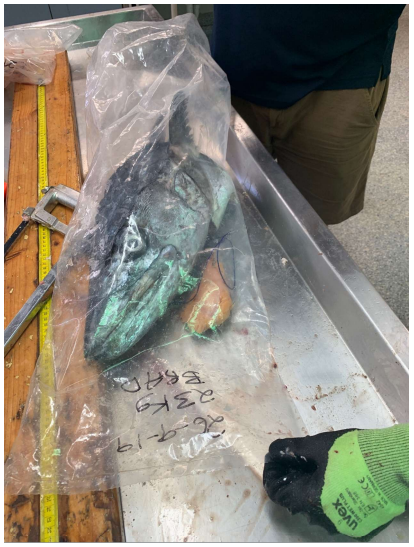
Fork length marks

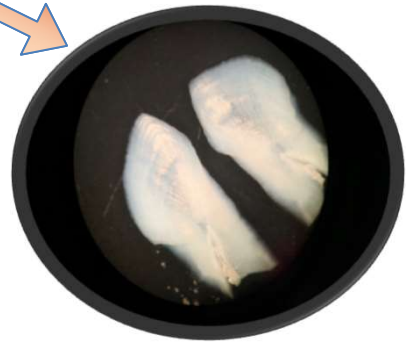
4. Mark each fish on the sheet so we can see they have been measured; don't group or summarise or rewrite as this cannot be used.
5. Fill out the labels on the sheet with your details (your name and island name), and the catch details (date caught, location caught, total number caught and number recorded).
6. Please place completed sheets in with frozen fish samples when they are freighted to Cairns with Seaswift, or they can also be posted back to: Northern Fisheries Centre using the reply paid envelopes provided to PO Box 5396, Cairns 4870.

Thank you for your assistance.

Progress: data and samples

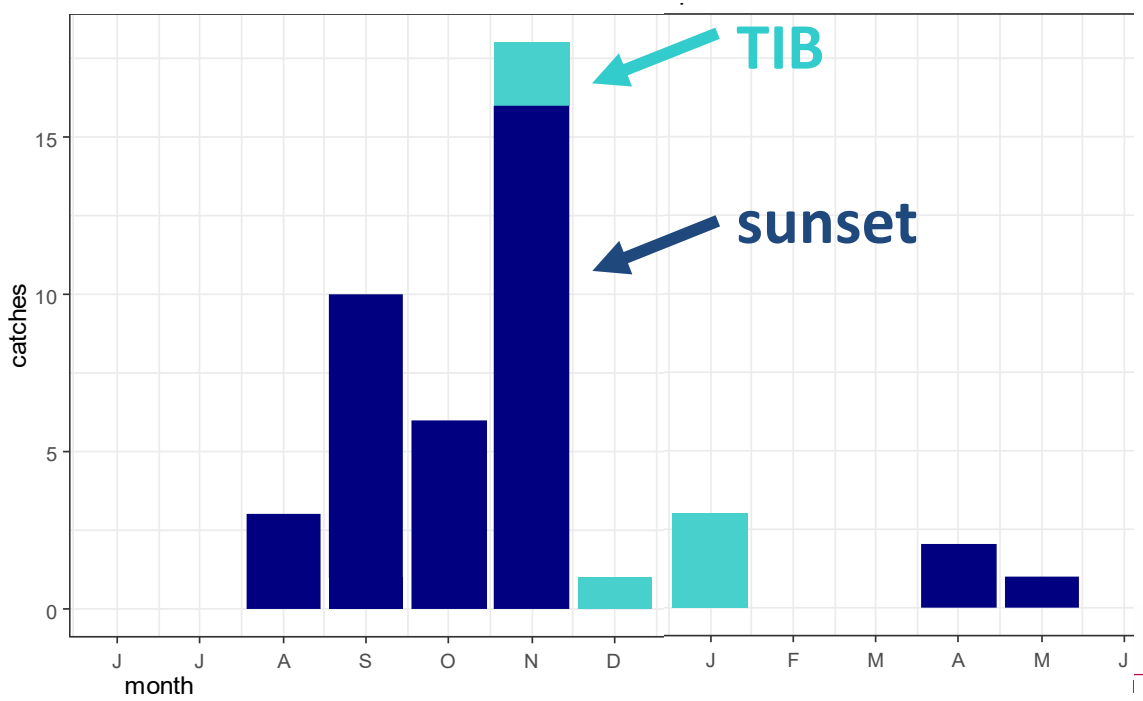






Results

- August 2019 to May 2020
- 1, 592 fish measured from 41 catches/days
- 11 t sampled
- 57 t caught (TIB & sunset) → ~ 20% catch measured



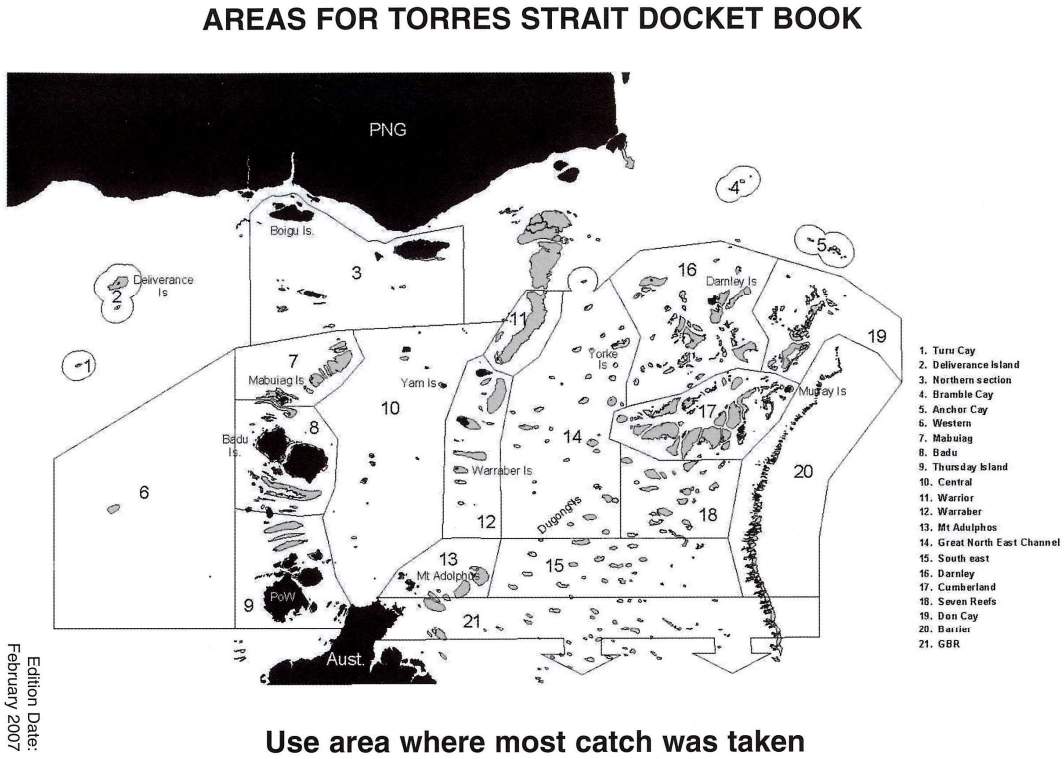
- most samples from sunset boats where most catch taken

Results

Areas sampled

- main fishing grounds (most fish) – 95%
- central and eastern areas (14 and 16) – 5%

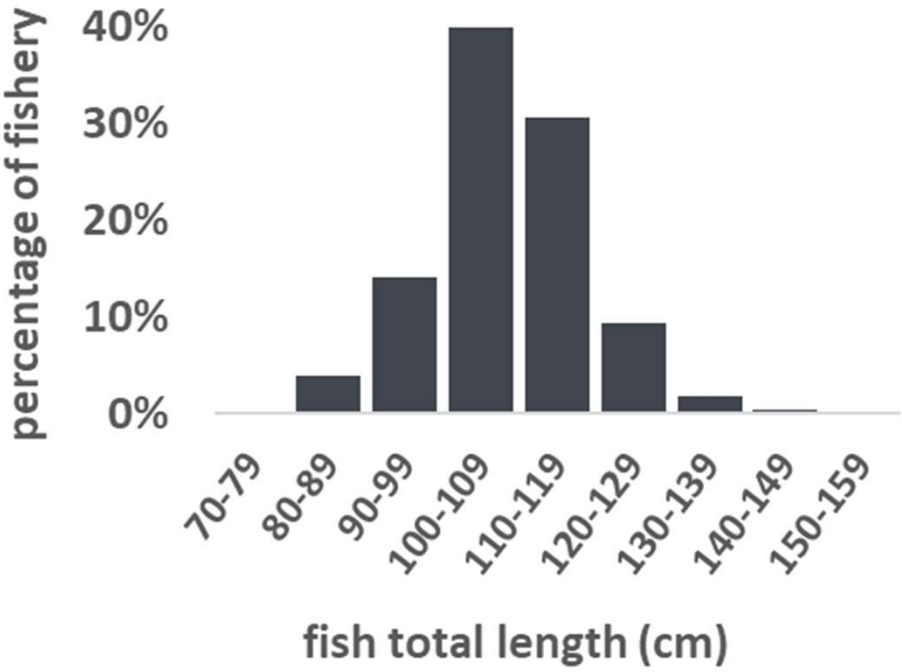
Data type	Area 4 (Bramble Cay)	Area 14	Area 16
Lengths (subsampled)	1,499 (1409)	24 (24)	47 (42)
Catches	34	4	3
Otoliths	198	27	30
Sex data	198	3	29
Genetic samples	103	22	



Results

Fish size

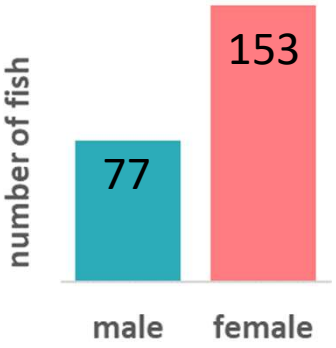
- 77 – 158 cm TL
- Average fish was 108 cm TL
- Fish size very similar between TIB & sunset

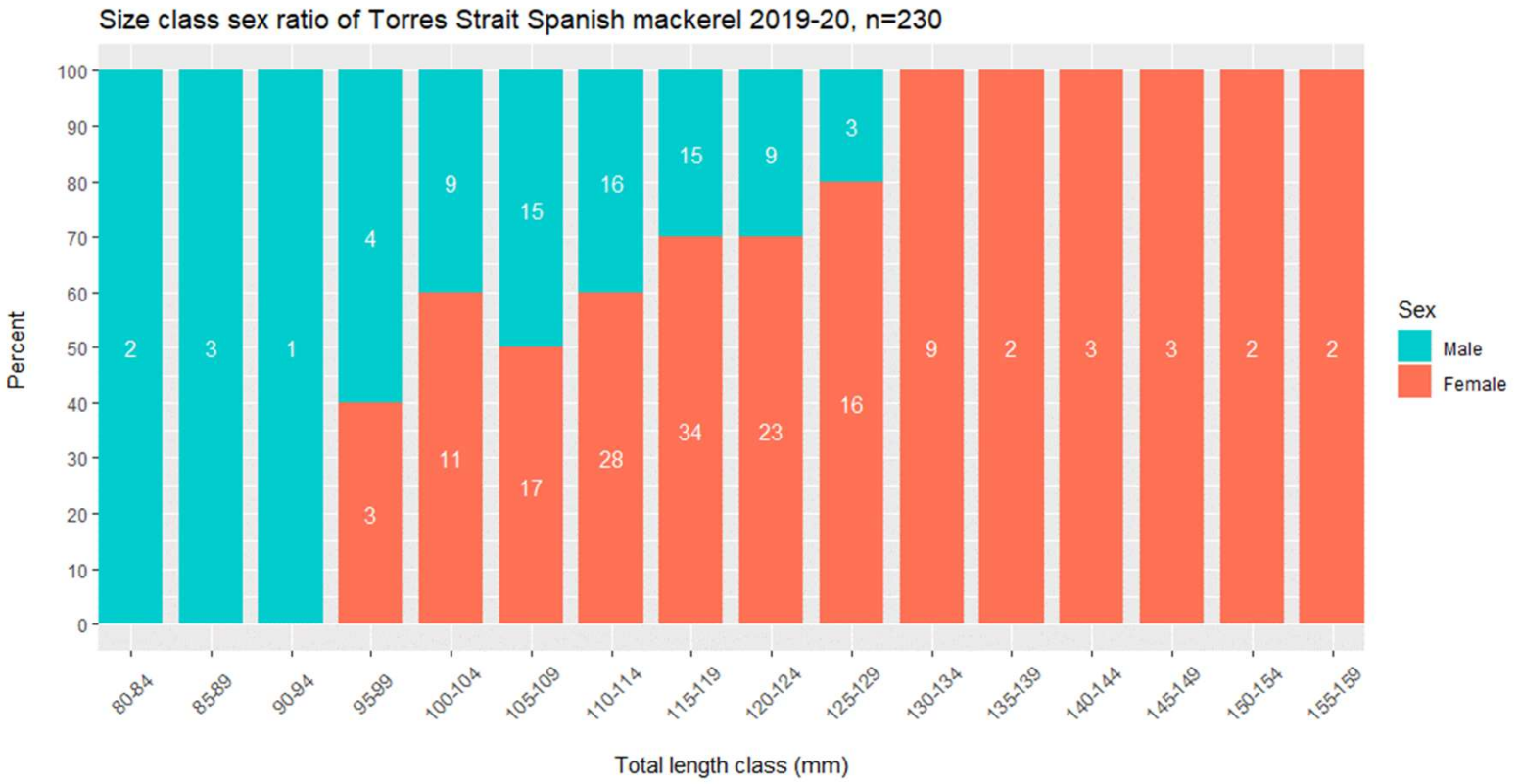


Results

Sex of fish

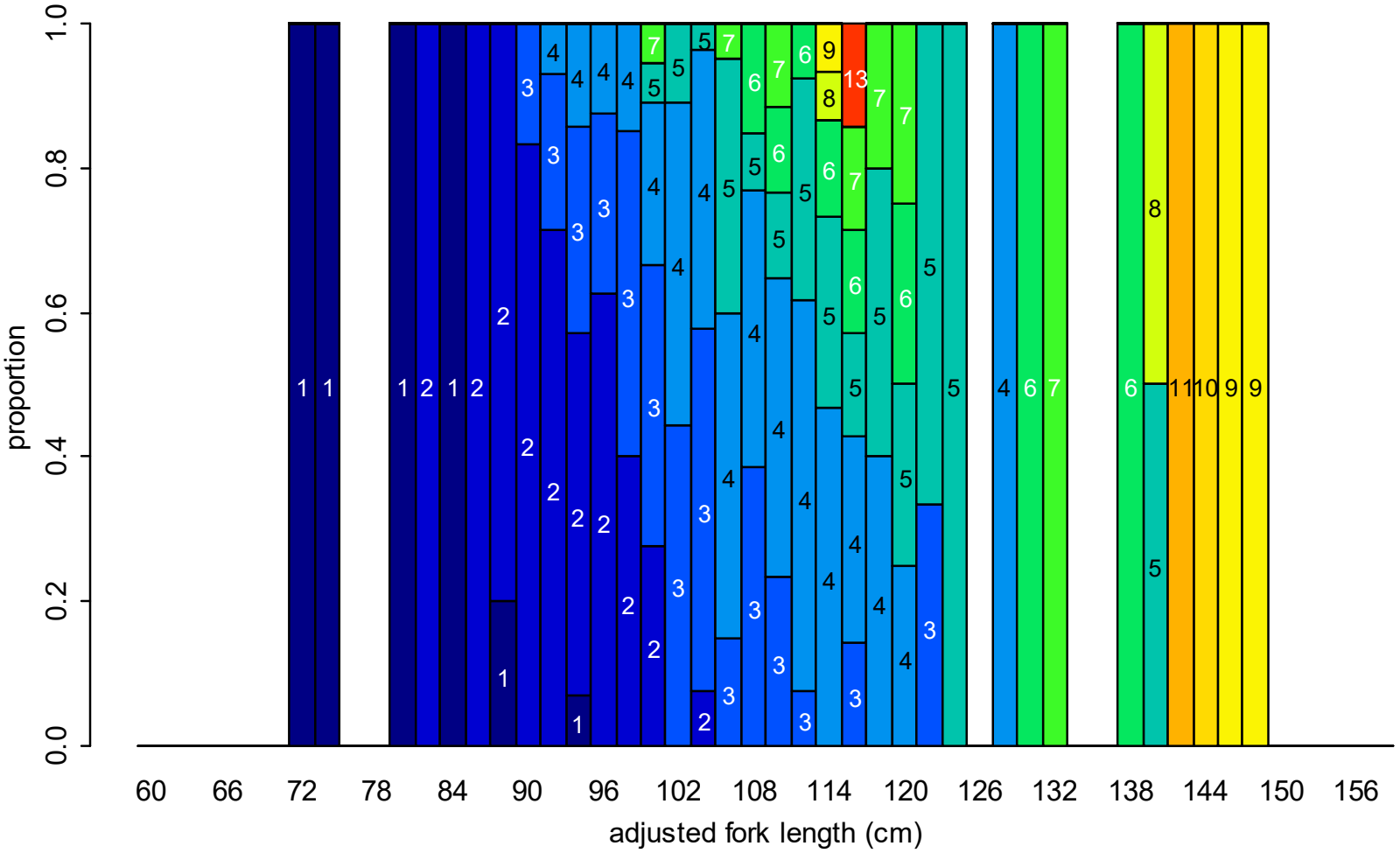
- Small – mostly **MALE**
- Large - mostly **FEMALE**





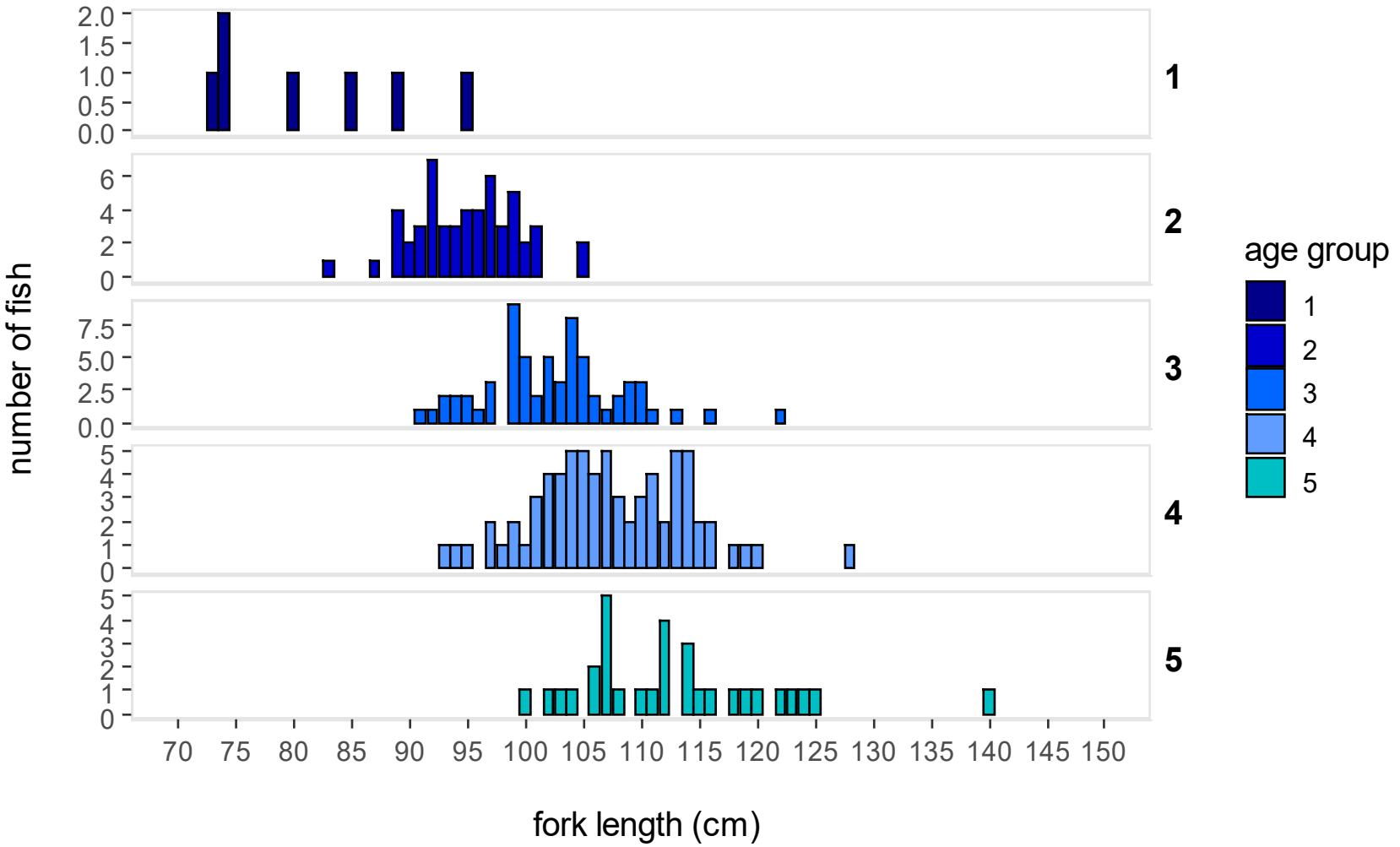
Results

Fish age-length key (ALK)



Results

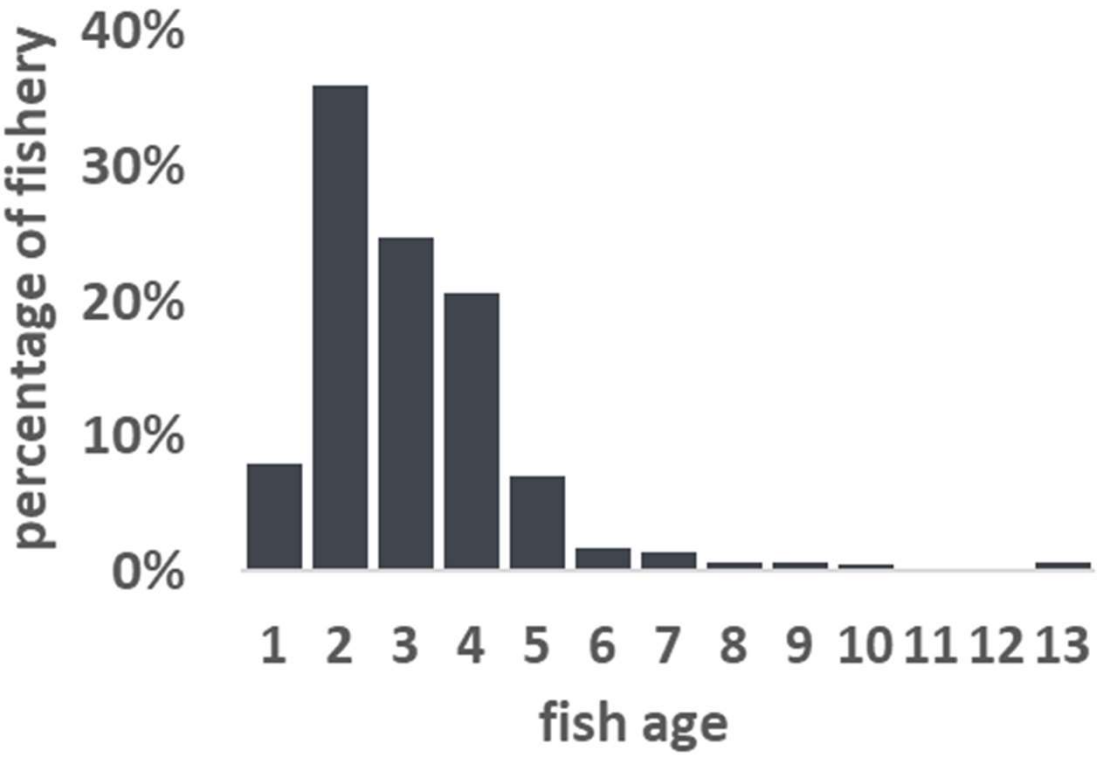
Fish length frequency: age groups 1 - 5



Results

Fish age

- 1 – 13 years old
- oldest fish was caught from Bramble (128cm TL)
- most fish were 2 to 4 years old (83%)
- fish age structures very similar between TIB & sunset



Project species

2019-20

2020-21

2020-21 project

Challenges:

- low fleet size - participation
- late start to sampling, some limit on period to sample
- TIB – largely whole fish – sample collection limitations

Opportunities:

- previous engagement with fishers
- sunset mostly fillet at sea – potential for samples to be collected at sea
- Erub freezer & trainee program

2020-21 project

Sample sizes (realistic)

- coral trout
  - 1000 rep. lengths (5% sampling)
  - ~ 300 otoliths
- Spanish mackerel
  - 20% sampling – 1000 lengths from 30-40 catches
  - otoliths - > 250

Progress: fish samples and data

Sunset fishery

- Sampling kits with sunset fishers
- Samples and length data been collected for SM & CT
- Samples being freighted back to lab in Cairns

TIB fishery

- Sampling from Erub (SM & CT)
- Samples collected from Ugar fishers (SM)

Progress: data and samples

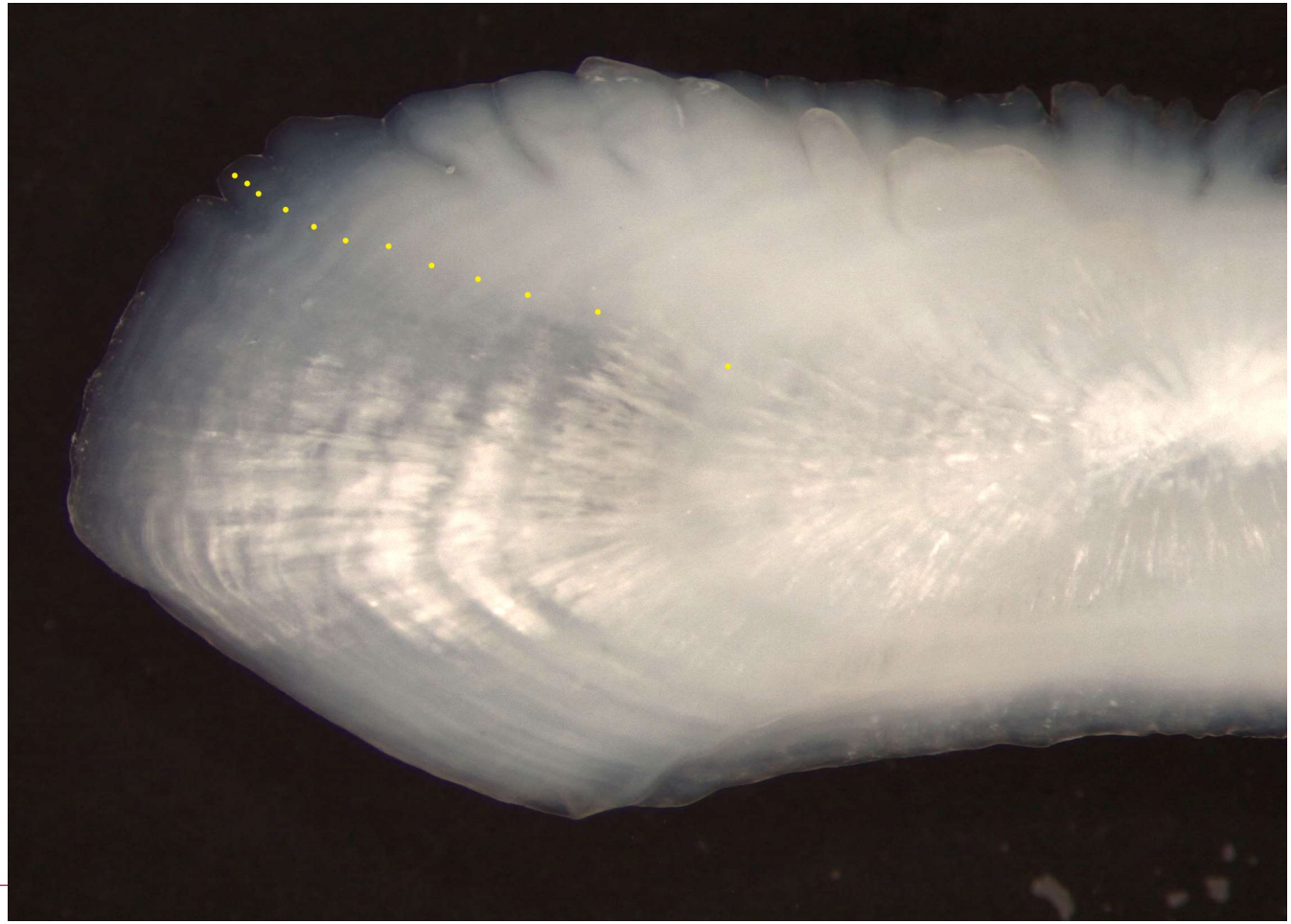
- Lengths measured
- fish frames for length, sex and age data
- genetics samples collected (SM only) for future close-kin project

Progress: samples

- One large SM sampled from Erub
- TL: 157 cm
- Sex: Female

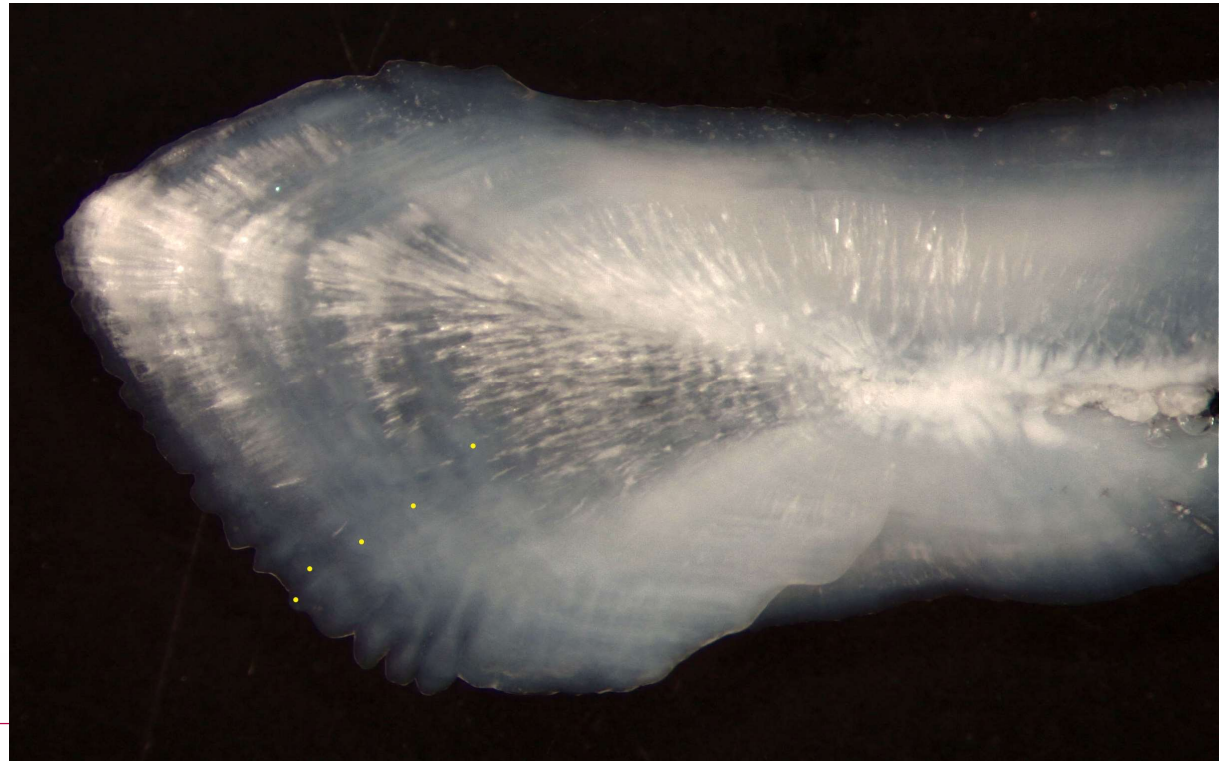
Progress: samples

- One large SM sampled from Erub
- TL: 157 cm
- Sex: Female
- Age: 12



Progress: data and samples

- Another large SM sampled from Erub
- TL: 151 cm
- Sex: Female
- Age: 5 years



Next steps

- Continuation of sampling
- Continued communication with fishers
  - regular contact (phone calls)
  - follow up community visits (Dec, Feb)
- Lab processing of samples (wet lab, blocking of CT)
- Data entry
- Ageing of samples (Feb-Apr 2021)
- Data analysis (Mar/Apr 2021)
- Reporting (June 2021)
- Communication of results (from June 2021)

PZJA Torres Strait Finfish Working Group	Meeting 25 November 2020
WORKING GROUP UPDATES Industry and scientific member updates	Agenda Item No. 2.1 FOR DISCUSSION

RECOMMENDATIONS

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

BACKGROUND

2. Verbal reports will be provided by industry members under this item. The FFWG Chairperson may also welcome a short report from any invited participants from industry at this agenda item.

3. It is important that the Working Group 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 FFWG and FFWG are focused and may more effectively address each issue.

4. FFWG 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.

5. At the last meetings of the FFWG and associated FFRAG, members discussed a range of strategic issues affecting the management and development of Torres Strait fisheries which are summarised below.

Finfish Working Group meeting November 2019

6. The FFWG noted the following general updates from industry members and observers:
   a. Little fishing effort has been occurring in eastern Torres Strait communities due to poor weather over the last seven months but a change in the weather has seen communities resume fishing focusing on Spanish mackerel (Ugar and Erub) with Mer focusing on coral trout.
   b. The Spanish mackerel biological sampling project has been progressing well and visits to engage communities in the research have been well received, particularly hands-on involvement in collecting fisheries data (measuring fish and collecting ear bones for ageing). FFWG noted a good response to the engagement video played during community visits (FFRAG industry members extracting ear bones at QDAF Northern Fisheries Centre Cairns).
   c. Industry members advised that they are encouraging fishers to support the adoption of daily fishing logbooks and that they will continue to seek all available support from government

for community visits with a focus on data to support sustainable fisheries and information flow.

d. Industry advised that Warraber community had a continued interest in pursuing development of a local baitfish industry.

Finfish RAG meeting number 8, 4-5 November 2020 (from the draft meeting record)

7. Industry members provided the following updates to the FFRAG on recent developments within the Torres Strait Finfish Fishery:

   a. Good catches of coral trout and other reef-line species have been taken by Mer fishers over recent weeks with October-November being described as the peak time for finfish catches. It was advised that commercial fishers were in the minority of total fishers catching finfish on Mer, with an estimated assessment thattwo dinghies might go commercially fishing for trout, while up to eight dinghies might go out targeting finfish for subsistence purposes.

   b. It was advised that the Mer community was in discussion about which community group would take responsibility for leasing and running the community freezer when in operation. In addition to the MDW Fishing Company, a new fishing company *Laru Zug Esrisili* attached to the PBC, was in the process being formed.

   c. Erub community freezer (Darnley Deep Seafood) is back in operation and has seen a spike in Spanish mackerel catches over the past few weeks. Three recent barge shipments have left the business taking catch to the mainland to be processed. It was also noted that some coral trout were being exported to China.

   d. With improved weather over recent weeks, two fishing operations have been actively targeting Spanish mackerel at Ugar and are now moving across to targeting coral trout. During recent community visits by AFMA and QDAF, Ugar community members expressed concern than Spanish mackerel being taken for subsistence fishing (40-50 mackerel per week at times) were not being recorded through the Fish Receiver System (which records commercial catch only).

   e. Community members have recently embraced the need for data collection to support their fisheries and have a strong desire to capture traditional harvests of their resources through some kind of user-friendly reporting system. Communities are interested to hear the outcomes of the scoping study investigating options for monitoring traditional take catches being led by Kenny Bedford.

   f. Following the October 2020 Fisheries Summit convened by TSRA, Gudumalalgal communities have been emphasising the need to removing the Western Line Closure. They are keen to seek advice from eastern communities on rigging gear to target finfish ahead of the planned 2021 community freezer openings (Boigu, Saibai, Dauan) under the Waphill traineeships program.

   g. The Masig community are not presently active in commercial fishing for mackerel or trout and are awaiting the community freezer re-opening. Good Spanish mackerel catches have recently been taken for subsistence on Masig.

h. Industry members expressed concern over the upcoming AMSA requirement to have a certificate of survey for commercial vessels and to have appropriate crewing, including the master holding a coxswains licence.

i. Feedback on the recent Torres Strait Finfish Biological Sampling Program (QDAF and AFMA) community visits was positive with the presentation well received by communities and some volunteers being signed up to provide fish frames and length measurement to support the science of their fishery.

8. Science members provided the following update:

- An informal national group of Spanish mackerel managers and scientists from jurisdictions across the top-end of Australia has been formed (WA Fisheries, NT Fisheries, QDAF – Gulf of Carpentaria and Qld East Coast, NSW Fisheries and AFMA – Torres Strait). The group has met twice via video conferencing and is co-chaired by NT Fisheries and AFMA. The group has identified that similar, but not identical, trends in catch rates to Torres Strait do appear to be occurring across the top-end of Australia suggesting that environmental factors might be influencing these fishers. Although in its early stages of analysis, it appears that WA fisheries may have evidence of sea surface temperature anomalies correlating with decreases in catch rates in their data set. It was noted that the committee would continue to meet and updates would be provided to the FFRAG.

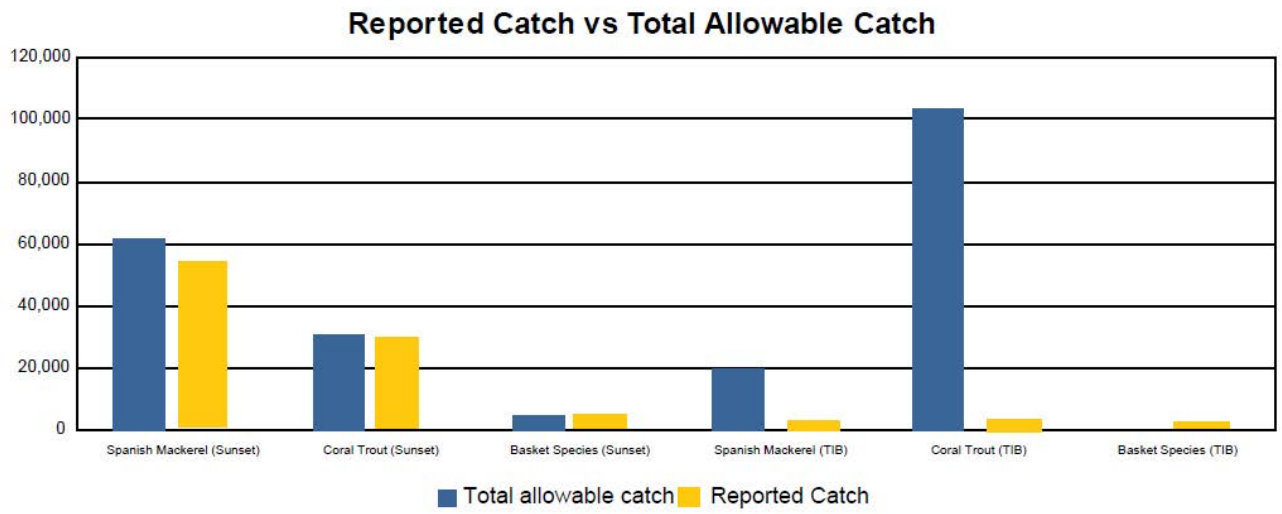
AFMA CATCHWATCH

A REPORT FROM THE AUSTRALIAN FISHERIES MANAGEMENT AUTHORITY

End of 2019-20 Season Report

Torres Strait Finfish Fishery - Data Period 1 July 2019 to 30 June 2020

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



Notes:

^ Catch reported through mandatory TDB02 Catch Disposal Records (CDRs) and does not include any unreported catches or outstanding catches (there is an expected processing delay of 2-3 weeks from when a Fish Receiver completes a CDR and AFMA receives and processes it). TIB sector operates under a competitive total allowable catch. Sunset sector boats have individual vessel catch allowances detailed here: www.afma.gov.au/fisheries-services/concession-holders-conditions

Conversion ratios used to convert back to whole weight are:

	Spanish mackerel	Coral trout	Other reef-line species
Filleted Gilled &	1.61 : 1	2 : 1	2.5 : 1
Gutted	1.05 : 1	1.1 : 1	1.1 : 1

Season date is financial year 1 July to 30 June.

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 *AFV Saint Hillaire* or *AFV Sawfish.*	McPherson pers. comm. AFMA interview Oct 2020.
1957 to 1962	*AFV Winston* 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. AFV Winston reportedly fished two dories for all years active. (*Geoff McPherson holds logbook data for AFV Winston and is reviewing*)	McPherson pers. comm. AFMA interview Oct 2020.
1957 to ~1969	*AFV Trader Horn* 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 AFV Winston 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 "*The Taiwanese Gillnet Fishery in the Gulf of Papua*" in Haines et. al summary of 1985 Port Moresby seminar.

1977-1982	TSSMF Research conducted aboard *AFV Winston*, 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 AFV TRADER HORN.	Kenny Bedford report to FFRAG 7.
1984/1985	*AFV Winston* 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/ *Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific* 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 *FFV Sheng Fu* and *FFV Hwa Si,* 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 Fishery 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	*Torres Strait Finfish Management Plan 2013* 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.

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

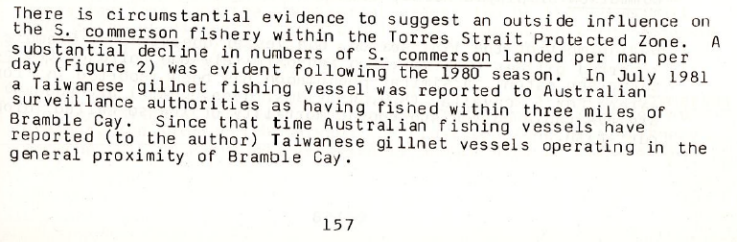
Illegal Unreported and Unregulated (IUU) fishing in Torres Strait

- 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 the that 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.

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

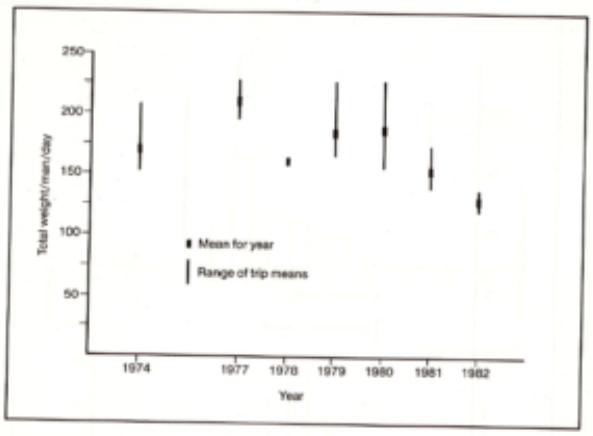

Figure 1. Total live weight of *S. commerson* per man per day on an annual basis (August- December) for one vessel.

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 Working Group	Meeting 25 November 2020
WORKING GROUP UPDATES Government member updates	Agenda Item No. 2.2 FOR NOTING

RECOMMENDATIONS

1. That the Working Group **NOTE:**

    a. AFMA updates detailed below; and

    b. TSRA update provided at the recent FF Resource Assessment Group (FFRAG) meeting on 4-5 November 2020 (from the draft meeting record). Further verbal updates from the TSRA member will be provided at the meeting as required.

BACKGROUND

AFMA update

2. Total catches reported on catch disposal records (completed by Fish Receivers) for the 2019-20 fishing season is reported in the AFMA catch watch report at **Attachment A.**

3. As previously advised, AFMA has submitted a report to the Department of Agriculture, Water and the Environment to a 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-finfish/application-2020

4. 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.

5. AFMA has commenced travelling to all Eastern communities and most Central communities to discuss a range of matters. Of relevance to the Finfish Fishery, Jo Langstreth, Queensland Department Agriculture and Fisheries (QDAF) joined AFMA for meetings at Ugar, Erub and Mer to discuss the biological sampling project.

6. AFMA was invited by TSRA and Community Owned Enterprises to meet with the trainees of the Whaphill Project on Erub (refer to TSRA update below for more information on the Whaphill Project). AFMA took the opportunity to meet with the Trainees during AFMA's visit to Erub on 27-28 October 2020. The initial visit focused on filling out Catch Disposal Records, identifying coral trout down to species level, setting up trainees as registered agents under their host fisher's commercial licences and answering general questions on fisheries management. In future AFMA visits, AFMA will offer to further discuss data collection and support for fishery research projects.

7. 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 (**Attachment B**). A similar exercise will be completed for coral trout, resource permitting.

8. 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.
9. FFWG and RAG members are invited to consider the current draft and if possible, provide advice on any obvious gaps in the information so far compiled. Initial feedback from FFRAG members (meeting 9 4-5 November 2020) on events to add include:
    a. QDAF long-term monitoring program dates;
    b. stock structure work performed by Buckworth and Ovenden;
    c. community freezer dates of operation;
    d. the JCU Island Freezer work; and
    e. attaching the age length key graph which gives a good visual summary of sampling for mackerel over time.

AFMA Compliance

10. AFMA compliance officers have conducted vessel inspections both at sea and in port, monitoring compliance with licensing conditions, log books where applicable and adherence to the FF management plan.
11. AFMA continues to work with fish receivers to ensure appropriate and current licenses are in force and the conditions, particularly accurate recording of species and timely reporting of landings to AFMA through Catch Disposal Records (CDRs).
12. AFMA conduct routine freight hub inspections and consignments coming out of the Torres Strait. Often AFMA will often contact the sender to verify the catch was landed to a licensed fish receiver and request the CDR number for that catch. In the event a consignment of catch cannot be proved to have been landed to a receiver AFMA can seized and dispose of that catch.
13. Overall compliance rates are very good however we remind fishers to ensure their catch is landed directly to a licensed fish receiver and that the fishers retain a copy of the CDR issued by the receiver when the catch is landed.

TSRA update to FFRAG meting 8 on 4-5 November (from the draft meeting record)

14. The FFRAG noted the following updates from the TSRA Member:
    a. An exemption has been granted to industry members from holding a coxswains certification to fish commercially until 2022. TSRA is working on a Marine Pathways program to have all TIB licence holders trained and certified with 200 of the 465 licence holders certified to date.

    b. Building on the findings of the fisheries infrastructure review led by Kenny Bedford, the ‘Waphill’ (many fish) project was formed (co-funded by TSRA and QLD Government), with employment, construction and training outcomes for 14 Torres Strait communities. It was reported that Darnley Deep Seafoods on Erub I were recipients of the initial stage of the Waphill project with 15 trainees recruited. Each trainee is working with a host fisher/mentor on fishing skills, completing their coxswains and a Certificate 1 in business. The project is aiming to have the trainees develop a business and savings plan. They will be able to apply to the TSRA at the end of the program for a grant of up to 50 percent of the cost of their own fishing vessel.

c. The Waphill project has also seen the recruitment of three Erub I freezer based trainees who have completed part of their traineeship with Independent Seafood Producers Pty Ltd Fish Market in Cairns. ISP are also engaged to provide training in communities.

d. The Fisheries Summit convened by TSRA in October had concluded the 2.5 year process \ to deliver on a long-term aspiration to move community-owned assets to a community-owned enterprise. The summit resolved to form the *Zenedth Kes* fishing company from 1 December 2020. The company will be limited by guarantee and registered through ASIC. It will be 100 percent indigenous owned and controlled. It will have 25 members, five from each cluster nation including the Northern Peninsula Area. The initial Board members will be appointed for 12-18 months. The company is designed to be a world class fishing operation with benefits going back to the community. Members will be unpaid. Revenue raised is to go back to communities through a beneficiary process. This has been part of a 70 year journey for communities to take back responsibility and ownership of their fisheries. TSRA will be working with PZJA to transfer licences TSRA currently hold to the *Zendth Kes* fishing company and $1.8M of funds. Finfish Fishery access rights and Beche de mer assets will also be moved. A separate PZJA allocation review process will be undertaken for Tropical Rock Lobster in accordance with the plan of management for that fishery.

ATTACHMENTS

Attachment A. End of season catch watch report for the Torres Strait Finfish Fishery for the for the 2019-20 fishing season.

Attachment B. Management and data history compilation for the Torres Strait Spanish Mackerel Fishery.

PZJA Torres Strait Finfish Fishery Resource Assessment Group

FFRAG Meeting 8

4-5 November 2020
Novotel Oasis, Cairns

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

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Agenda Item 1 – Preliminaries

1.1 Preliminaries

The eighth meeting of the PZJA Torres Strait Finfish Fishery Resource Assessment Group (FFRAG) commenced at 0830 hrs. FFRAG Chairperson, Mr David Brewer, welcomed participants and acknowledged the Traditional Owners of the land on which the meeting was held and acknowledged the elders of the community past, present and those emerging.

Sunset sector Industry Member Tony Vass and QDAF Member Tom Roberts were noted as apologies received. Mr Bedford arrive at 0900 during item 1.3.

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 prior to the meeting. The RAG noted:

- a discussion on the review of the Western Line Closure had been added to the agenda as agenda item 4.2 as requested by an industry member; and
- a discussion on recording non-commercial catches would be added under agenda item 4.1 Review of TSFF Data Needs.

1.3 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 TSRA Finfish Quota Management Committee member Member of Zeneth Kes Fisheries company.

Name and position	Organisation	Declaration of interest
Tenny Elisala. Industry Member	Industry member for Gudumalagal. 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. Member of the Zeneth Kes Fisheries company.
Kenny Bedford, Industry Member	Debe Mekik Le Consultancy	Runs a consultancy business which has delivered projects relevant to Torres Strait fisheries. Board member of Zeneth Kes Fisheries company,
Paul Lowatta, Industry Member.	Industry Member, Mailulagal	TIB industry member, Finfish RAG
Mark Anderson, TSRA Member.	Torres Strait Regional Authority	No personal pecuniary interests. TSRA holds finfish quota in trust on behalf of Traditional inhabitants and administers the annual leasing process to Sunset licence holders to generate revenue.
Michael O'Neill, Scientific Member	Queensland Department of Agriculture and Fisheries	Principal scientist for the current Spanish mackerel stock assessment project. Member of PZJA Finfish RAG and Working Group. Project team member for the Torres Strait (Spanish mackerel, coral trout) biological sampling program.
Ashley Williams, Scientific Member	CSIRO James Cook University	CSIRO employee, general interest in pursuing research in Torres Strait.
Rik Buckworth, Scientific Member	Sea Sense (Consultancy)	Director of Sea Sense Australia Pty Ltd and Aquatic Remote Biopsy Pty Ltd, Adjunct at Charles Darwin University, Honorary Fellow – CSIRO, ex Northern Territory Fisheries employee, AFMA Northern Prawn RAG Scientific Member, Principal Investigator on the Spanish mackerel stock assessment project. Chair of Northern Territory Aquarium Fish Management Advisory Committee. Recent appointment as Chair of NT Research Advisory Committee for FRDC. Interested in participating in research projects for the fishery as a consultant.
Selina Stoute	AFMA member	No interests. Manager of Andrew Trappett who is a co-investigator on two Torres Strait Finfish Fishery funded research projects. From mid November 2020, Mr Trappett will be, taking leave from AFMA to work with QDAF on the Torres Strait Torres Strait (Spanish mackerel, coral trout) biological sampling program.
Andrew Trappett, RAG Executive Officer	Australian Fisheries Management Authority	Co-investigator for AFMA on two TSSAC funded projects for Spanish mackerel stock assessment and biological data collection in a data services and industry liaison role. From mid November 2020 will be, taking leave from AFMA to work with QDAF on the Torres Strait (Spanish mackerel, coral trout) Biological Sampling Program.

Consistent with the Protected Zone Joint Authority Fisheries Management Paper No. 1 (FMP 1), which guides the operation and administration of PZJA consultative forums, the RAG noted the requirement to declare all interests, perceived or real. Each member declared their interest in the fishery as documented in **Table 1** (above). In line with the AFMA standard for declaring potential conflicts of interest in Commonwealth MACs and RAGs to best protect the integrity of advice, members with grouped interests (industry, research, TSRA, AFMA) were sequentially asked to leave the room to allow the remaining RAG members to:

- freely comment on the declared interests
- agree if the interests precluded the members from participating in any discussions and
- agree to any methods to treat the declared interest (e.g. the member provides preliminary input but leaves the room when any advice is formed).

The RAG noted that, in addition to the process under this item, it remained the obligation of all members to update their declarations throughout the meeting as required.

Industry members interests

Members with declared fishing interests in the fishery left the room to enable free discussion of these interests (Tenny Elisala, Rocky Stephen, John Tabo Jr, Paul Lowatta and Mark Anderson[1]). As per previous RAG meetings the remaining members agreed that industry members could be perceived to have individual interests in the outcomes of advice put forward by the RAG. It was noted though that the members were engaged in the meeting to provide industry expertise and knowledge of the industry within their cluster nations. This expertise and knowledge were critical to the meeting provided industry members acted in the interest of the fishery as a whole. The remaining members advised that the industry members should participate in all agenda items and advice being formed. The industry members re-joined the meeting and were advised of the RAG consideration of their interests.

Research interests

Members with declared research interests left the room to enable free discussion of these interests (David Brewer, Rik Buckworth, Michael O'Neill, Ash Williams and Andrew Trappett). The RAG noted that these members could be perceived to have a personal interest in the outcomes of RAG advice relevant to research needs or funding. At the same time the scientific members were appointed to the RAG in recognition of their scientific expertise relevant to the fishery and hence research that might be undertaken. Whilst maintaining an awareness of the need to consider the interest of the fishery when advising on research needs and priorities, in particular, the remaining members agreed the scientific members should participate in all agenda items and advice being formed.

TIB industry members advised that feedback from the recent Fisheries Summit was that there is a strong need for ongoing participation of Traditional Inhabitants in research projects. The strong need for increased communication of science outcomes was also noted. Members with research interests re-joined the RAG and were advised of the RAG consideration of their declared interests.

TSRA interests

Members with interests related to the business of the Torres Strait Regional Authority left the meeting (Mark Anderson, Tenny Elisala, Rocky Stephen, Kenny Bedford). The remaining RAG members discussed the declared interests of the members and participants that had left the room. It was noted that the TSRA had declared their holdings of Sunset licences and revenue generated from leasing these entitlements for the benefit of Traditional inhabitants. It was further noted that

[1] Mr Bedford had not yet arrived at the meeting.

TSRA is investing in fisheries infrastructure, training and employment schemes in line with their functions. Members noted that having responsibility for the leasing program which is designed, in part, to generate revenue and for making fishery development investments, could mean a perceived interest in maximising the available TAC could exist. Consistent with advice from earlier RAGs, it was noted that it is important to maintain an awareness of this potential perceived conflict and ensure members acted in the interest of the fishery. The RAG agreed that TSRA views were important in forming advice to the PZJA and agreed for members with TSRA interests to participate in all agenda items and advice being formed. Members with interests in TSRA business re-joined the meeting and were advised of the RAG consideration of their declared interests.

AFMA interests

Selina Stoute and Andrew Trappett from AFMA left the meeting. The RAG noted AFMAs primary interest in the fishery was managing for sustainable fishing. AFMA members re-joined the meeting and were advised of the RAG consideration of their declared interests.

1.4. Review of action items from previous RAGs

The RAG noted an update from the RAG EO on status of actions as detailed in the agenda paper. It was agreed to remove any items marked 'ongoing' that had become part of business-as-usual work for the Fishery. Further, the RAG requested AFMA review the status classifications of 'ongoing', 'incomplete' and 'in-progress' to ensure they have clear and separate meaning. If not, these classification should be streamlined.

With regard to actions on acquiring climate change knowledge, an industry member queried whether any specific climate change work was occurring in Torres Strait. This was noted in the context of concern that Mer sardines might be disappearing and are a key bait source for trout fishing. AFMA advised that CSIRO have been funded to report on likely climate change impacts on Torres Strait Fisheries based on available information, including to advise on future data needs (what data needs be collected), options to downscale climate change information to the Torres Strait and model outputs for climate change impacts on Torres Strait fisheries. The CSIRO project team recently sought input from PZJA RAG Chairs and Scientific members on the projects' draft report. A final report is due in January 2020 and will be presented to the RAG.

Agenda Item 2 – RAG Updates

2.1 Industry and scientific updates

Industry members provided the following updates to the FFRAG on recent developments within the Torres Strait Finfish Fishery:

- Good catches of coral trout and other reef-line species have been taken by Mer fishers over recent weeks with October-November being described as the peak time for finfish catches. It was advised that commercial fishers were in the minority of total fishers catching finfish on Mer, with an estimated assessment thattwo dinghies might go commercially fishing for trout, while up to eight dinghies might go out targeting finfish for subsistence purposes.
- It was advised that the Mer community was in discussion about which community group would take responsibility for leasing and running the community freezer when in operation. In addition to the MDW Fishing Company, a new fishing company *Laru Zug Esrisili* attached to the PBC, was in the process being formed.
- Erub I community freezer (Darnley Deep Seafood) is back in operation and has seen a spike in Spanish mackerel catches over the past few weeks. Three recent barge shipments have left the business taking catch to the mainland to be processed. It was also noted that some coral trout were being exported to China.

- With improved weather over recent weeks, two fishing operations have been actively targeting Spanish mackerel at Ugar and are now moving across to targeting coral trout. During recent community visits by AFMA and QDAF, Ugar community members expressed concern than Spanish mackerel being taken for subsistence fishing (40-50 mackerel per week at times) were not being recorded through the Fish Receiver System (which records commercial catch only).
- Community members have recently embraced the need for data collection to support their fisheries and have a strong desire to capture traditional harvests of their resources through some kind of user-friendly reporting system. Communities are interested to hear the outcomes of the scoping study investigating options for monitoring traditional take catches being led by Kenny Bedford.
- Following the October 2020 Fisheries Summit convened by TSRA, Gudumalalgal communities have been emphasising the need to removing the Western Line Closure. They are keen to seek advice from eastern communities on rigging gear to target finfish ahead of the planned 2021 community freezer openings (Boigu, Saibai, Dauan) under the Waphill traineeships program.
- The Masig community are not presently active in commercial fishing for mackerel or trout and are awaiting the community freezer re-opening. Good Spanish mackerel catches have recently been taken for subsistence on Masig.
- Industry members expressed concern over the upcoming AMSA requirement to have a certificate of survey for commercial vessels and to have appropriate crewing, including the master holding a coxswains licence.
- Feedback on the recent Torres Strait Finfish Biological Sampling Program (QDAF and AFMA) community visits was positive with the presentation well received by communities and some volunteers being signed up to provide fish frames and length measurement to support the science of their fishery.

Science members provided the following update:

- An informal national group of Spanish mackerel managers and scientists from jurisdictions across the top-end of Australia has been formed (WA Fisheries, NT Fisheries, QDAF – Gulf of Carpentaria and Qld East Coast, NSW Fisheries and AFMA – Torres Strait). The group has met twice via video conferencing and is co-chaired by NT Fisheries and AFMA. The group has identified that similar, but not identical, trends in catch rates to Torres Strait do appear to be occurring across the top-end of Australia suggesting that environmental factors might be influencing these fishers. Although in its early stages of analysis, it appears that WA fisheries may have evidence of sea surface temperature anomalies correlating with decreases in catch rates in their data set. It was noted that the committee would continue to meet and updates would be provided to the FFRAG.

2.2 TSRA update

The FFRAG noted the following updates from the TSRA Member:

- An exemption has been granted to industry members from holding a coxswains certification to fish commercially until 2022. TSRA is working on a Marine Pathways program to have all TIB licence holders trained and certified with 200 of the 465 licence holders certified to date.
- Building on the findings of the fisheries infrastructure review led by Kenny Bedford, the ‘Waphill’ (many fish) project was formed (co-funded by TSRA and QLD Government), with employment, construction and training outcomes for 14 Torres Strait communities. It was reported that Darnley Deep Seafoods on Erub I were recipients of the initial stage of the Waphill project with 15 trainees recruited. Each trainee is working with a host fisher/mentor

on fishing skills, completing their coxswains and a Certificate 1 in business. The project is aiming to have the trainees develop a business and savings plan. They will be able to apply to the TSRA at the end of the program for a grant of up to 50 percent of the cost of their own fishing vessel.

- The Waphill project has also seen the recruitment of three Erub I freezer based trainees who have completed part of their traineeship with Independent Seafood Producers Pty Ltd Fish Market in Cairns. ISP are also engaged to provide training in communities.
- The Fisheries Summit convened by TSRA in October had concluded the 2.5 year process \ to deliver on a long-term aspiration to move community-owned assets to a community-owned enterprise. The summit resolved to form the *Zenedth Kes* fishing company from 1 December 2020. The company will be limited by guarantee and registered through ASIC. It will be 100 percent indigenous owned and controlled. It will have 25 members, five from each cluster nation including the Northern Peninsula Area. The initial Board members will be appointed for 12-18 months. The company is designed to be a world class fishing operation with benefits going back to the community. Members will be unpaid. Revenue raised is to go back to communities through a beneficiary process. This has been part of a 70 year journey for communities to take back responsibility and ownership of their fisheries. TSRA will be working with PZJA to transfer licences TSRA currently hold to the *Zendth Kes* fishing company and $1.8M of funds. Finfish Fishery access rights and Beche De Mer assets will also be moved. A separate PZJA allocation review process will be undertaken for Tropical Rock Lobster in accordance with the plan of management for that fishery.

2.3 AFMA update

The FFRAG noted the agenda paper from AFMA and the following additional updates:

- Good catch reporting of finfish is being received by AFMA through the Fish Receiver System. Recent community visits (October and November 2020) have been able to provide feedback on the data, and it is agreed to by participants that the data represents a good picture of harvests from around Torres Strait.
- AFMA has recently visited the Erub I Freezer to support new trainees engaged under the Whaphill project. The initial visit focused on filling out Catch Disposal Records, identifying trout down to species level, setting up trainees as registered agents under their host fisher's commercial licences and answering general questions on fisheries management. AFMA advised follow up visits were planned and could further discuss data collection and support for fishery research projects.

Agenda Item 3 – Stock assessments and RBC advice

3.1 Updated Spanish mackerel stock assessment 2020

The FFRAG reviewed a presentation on Spanish mackerel stock assessment and model predictions (**Attachment A**). The presentation reported results up to the 2019-2020 fishing year, including information to review good analysis fits to all model data inputs. The RAG noted advice that, with newly available data, the model results now show an increase in catch rates and modelled recruitment. As a result, the model shows that the abundance (spawning biomass) of Torres Strait Spanish mackerel has increased since the last assessment performed in 2019.

The stock assessment

The RAG noted:

a) that the stock assessment was based on the same annual age structured model (referred to as the 1940 model) as the last 2019 assessment, which uses all available harvest, catch rate data and fish age-frequency data. The update to this model included an additional year of harvest data (fishing year 2019-20) and an additional eight years of age-frequency data (this includes historical[2] age-frequency data);

b) that treatments to all data inputs into the assessment were applied in line with recommendations from FFRAG 7 (data meeting 8 October 2019). This included advice on reconstructing a catch history for the fishery prior to 1989, including harvests for Illegal, Unreported and Unregulated foreign fishing, treating standardised catch rates (tender data to be excluded, fishing power to be included) and advice on using all newly available fish age-frequency data as inputs;

c) in line with FFRAG recommendations, nine specific agreed model analyses were performed rather than the 35 model scenarios run for the previous 2019 stock assessment update (summary table at **Attachment C**). Six of these model runs were for the 1940 model and three model runs were for the alternative exploratory model referred to as the 1989 model;

d) the exploratory 1989 model was developed and investigated by the project team in line with recommendations from FFRAG7. The purpose of this investigation was to examine whether the model would be informative if it only included data from the time when compulsory Sunset logbook data reporting commenced. That was from 1989;

e) confidence intervals were calculated to show the uncertainty of each analysis over 1000 simulated model runs. This was achievable in this assessment round, partly because more time was available due to the reduced number of model scenario runs requested.

Having considered the results of the 1989 model and advice from all scientific members, the RAG agreed that the 1989 model remained exploratory but worthy of further development overtime (refer to more detail below on the 1989 model). The RAG agreed that the 1940 model run provided the most reliable assessment of the stock and an acceptable basis to evaluate the status of the stock and to calculate a Recommended Biological Catch (RBC) for the 2021-22 fishing season.

The stock assessment results

Based on the six agreed 1940 model runs, the RAG noted that the results of the updated 2020 stock assessment show:

a) The estimated 2019-20 median spawning biomass of Torres Strait Spanish mackerel was 30% (B_{30}), ranging between 26% (B_{26}) and 35% (B_{35}), of unfished biomass in 1940 (B_0). This represents a seven percent increase from the 2019 estimated spawning biomass for 2018-19 of 23 (B_{23}) percent (ranging between 14-37%) of unfished biomass in 1940 (B_0);

[2] Newly available age-length data for analysis included: 1974-75, 1978-79, 1983-84, 1998-99, 1999-00, 2004-05, 2005-06 along with the new year of data from 2019-20 season.

b) None of the median biomass estimates from the six model scenarios were below the agreed limit reference point (B_{LIM} is defined as 20% of the 1940 biomass level (0.2 x B_0)) although the lower confidence intervals of some model runs were below B_{LIM};

c) Unlike the declining trend since 2009-10, the standardised catch rate (number of fish per operation day) of legal-sized Spanish mackerel, using logbook data from Sunset fishing operations, increased in 2019-20 (a statistically significant increase);

d) Age-frequency data now available from 2019-20, shows estimates of recruitment have returned to around the average;

e) Recent fishing pressure is not exceeding F_{MSY} (the harvest rate for Maximum Sustainable Yield (MSY) from the stock). This means overfishing is not occurring.

RAG considerations

a) **1989 exploratory model**: From previous assessments, it was noted that results were dependent on the estimated annual harvests prior to 1989. This pre-1989 harvest data was estimated from a mix of historical fisher and Queensland fish board reports, plus a level of assumed Illegal, Unregulated and Unreported Taiwanese gillnet harvests. FFRAG suggested that the project team investigate the exclusion the pre-1989 harvest data, to test if the model could function with just the modern data set (1989 to present).

   The project team performed this work and advised that the 1989 model runs were not able to produce consistent and meaningful results without some prior information being set in the model. The analyses highlighted a need to define bounds on the pre-1989 harvest rates, and results were influenced to whether the pre-1989 age length data were included.

   The RAG agreed that 1989 model was a good approach in principle but has limited value at this time and requires further development. The project team advised that further development work was required on the model settings prior to 1989 (these are known as the 'prior' terms).

   It was advised that when model aspects and settings are clearer, the RAG might expect to see more consistent comparisons between the 1989 and 1940 models. Only then and after FFRAG review, should this alternate model be included in the range of results used to set a median RBC.

b) **'Paper' fish**: The project team reminded the RAG of the initial examination carried out in 2019 into the effect of possible over reporting of Sunset catch, ahead of the 2007 industry buyout. The 2019 stock assessment tested certain high points in the harvest data series. It was reported that adjusting the high points down had little effect on the outputs of the model biomass trends (see 2019 FFRAG power point report).

c) **Hyper-stability in catch rates**: The project team advised that historical catch rates are not stable, but varies overtime with an evident pattern. This suggests that hyper-stability may not be an overpowering factor in the available data, and that increases in fishing power are considered each year. Nevertheless, noting that the fishery mostly targets the Bramble Cay spawning aggregation, the RAG agreed that further investigation is still warranted into this issue;

d) **Retrospective analyses**: The project team noted RAG advice that performing retrospective analyses, whereby the model works backwards through time in a stepwise manner to test how the model performs, will be a powerful tool for examining how well the model performs. The

team advised that this has not yet been actioned but would attempt to include this analysis in the final report;

e) **Environmental factors**: The RAG noted advice from the project team that environmental factors have not been incorporated into the assessment for FFRAG 8. The RAG agreed that this work remained a high priority to understand the factors for consideration in RBC settings.

3.2 Spanish mackerel RBC for 2021-22

Selecting an appropriate RBC calculation method

To guide advice on an RBC for the 2021-22 fishing season, noting there is no agreed harvest strategy in place for the Torres Strait Finfish Fishery, the FFRAG considered a range of RBC calculations. These are described in **Table 2** and outlined below.

In forming their RBC advice, the FFRAG:

a) considered five different constant (non hockey-stick) harvest rates applied to the six results from the 1940-model. Each level of harvest rate related to building the stock to different target reference points (F_{MSY} through to F_{60});

b) agreed to forecast the stock biomass to the 2021-22 fishing season based on an assumed level of harvest in 2020-21 (55 t = 39 t sunset, 4 t TIB harvest (based on the mean of the past three TIB fishing seasons), 10 t subsistence, 2 t recreational and 0 t for charter catches) and assuming average recruitment occurring. Therefore the RAG discounted approaches based on the 2019-20 estimate of biomass (Table 2, Approaches 7, 8, 9, 10 and 11);

c) agreed to assume average, rather than depressed recruitment in future fish population risk-projections. Unlike the findings from last stock assessment, the most recent recruitment deviations for each of the model runs were all positive (**Attachment C**). The RAG therefore agreed there was insufficient basis to assume below average recruitment in the future projections. Therefore the RAG discounted all approaches that assumed reduced recruitment (Table 2, Column 5);

d) reviewed fish population projections to evaluate risk to the stock. Consistent with the 2019 approach used by the RAG, it was agreed to consider how many years in a model run and simulation the stock would drop below the limit reference point (B_{20} or 20% of the unfished spawning biomass level in 1940) during a 12 year-time period (three times the age of full sexual maturity)[3]. The RAG agreed, in line with the *Commonwealth Harvest Strategy Policy,* that if more than 10% of model runs (based on over 1000 simulations), dropped the stock below B_{LIM} that this would represent unacceptable risk to the stock. Therefore the RAG discounted approaches which represented unacceptable risk to the stock (Table 2, Approach 1 Constant F_{MSY} and Approach 2, Constant F_{40});

e) considered industry member advice at the meeting and the principles recommended by industry for developing a harvest strategy for the fishery to be conservative by '*hastening slowly'* and by '*banking'* fish if the biomass is increasing. A summary of the guiding

[3] The RAG reviewed and agreed to the rationale of the 12-year timeframe being three times the full age of maturity i.e., based on age-length information by four years of age most fish are fully mature and contributing to the stock.

principles is in **Attachment D** (as tabled at FFRAG 5). Therefore the RAG discounted Approach 3 (Constant F_{48}) with an RBC calculation of 112 t as this represented too great of an increase in RBC over the 2019-20, 71 t RBC level. Likewise, the RAG discounted Approach 5 (constant F_{60}) with an RBC calculation of 75 t as it offered little increase from the current season 71 t RBC noting that the assessment outcomes did suggest an increase in RBC was warranted based on improvements in CPUE and modelled recruitment;

f) noting that 75 t RBC (constant F_{60}) was considered too low, and 112 t RBC (Constant F_{48}) was considered too high the RAG requested the project team to present a compromise approach of an RBC based on the mean point between F48 and F60. This approach (Table 2, Approach 6) would represent an RBC of 94 t;

g) reviewed fish population projections for 105 t and 94 t harvests to evaluate the likelihood of the stock building to B_{48} over the 12 year projected time period (three times the average age of sexual maturity) projection graphs considered are at **Attachment E**;

h) The RAG considered B_{48} or B_{50} to be a sensible interim target reference point, noting that B_{48} is the default proxy for B_{MEY} when no economic data are available (under the *Commonwealth Harvest Strategy Policy)*. B_{MEY} measures the biomass of fish to yield the sustainable maximum-economic-yield (MEY) from the stock. B_{MEY} also relates to the long-term aspirational target reference point of B_{60} recommended by industry under the harvest strategy work completed to date (see **Attachment D**).

i) The RAG noted that only one of the six 1940-model runs would be reaching the reference point of B_{48} (with a constant harvest of 105 tonnes) after 12 years. Therefore, the RAG discounted the approach labelled 4 (Constant F_{50}) as although the harvest poses acceptable risk to the stock, this level of harvest will likely not build the stock to the interim B_{48} target reference point within 12 years. However, the constant harvest of 94 t did build the stock to B_{48} by 12 years.

RBC advice

In line with the agreed RBC calculation method described above of removing less appropriate RBC options (summarised in Table 2 below), **the RAG recommended** a 94 tonne RBC for Spanish mackerel for the 2021-22 season. The RAG agreed that this RBC:

a) is based on the application of a constant harvest rate equivalent to the mean point between F48 and F60 to the estimated biomass in the 2020-21 fishing season;

b) would build the stock on average to the interim target reference point (for F_{48}) within a reasonable timeframe of 12 years (three times the age of sexual maturity) and assuming average recruitment to be occurring (**Attachment E**);

c) poses an acceptable low risk of the stock falling below the limit reference point (less than 10% of model runs and simulations dropping the stock below 20% of unfished spawning stock biomass in 1940); and

d) reflects the preference of industry members to have a harvest strategy that is balance and careful by '*hastening slowly'* by '*banking'* fish if the biomass is increasing.

Table 2. Summary of options presented to the FFRAG as outputs from the 1940 model runs in the 2020 Spanish mackerel stock assessment update. Yellow highlighted approaches were those considered by the RAG as potentially appropriate RBCs for recommendation.

No.	Name of RBC approach	Biomass year for the RBC calculation	% runs below S_{20} over 12 years and 6 analyses		Median
	1940-model		Assuming average recruitment	Assuming reduced recruitment	2021-22 RBC (tonnes)
1	Constant F_{MSY}	2021-22	12%	24%	146
2	Constant F_{40}	2021-22	12%	23%	145
3	**Constant F_{48}**	**2021-22**	**9%**	15%	**112**
4	**Constant F_{50}**	**2021-22**	**8%**	13%	**105**
5	**Constant F_{60}**	**2021-22**	**7%**	9%	**75**
6	**Mean of F_{48} and F_{60}**	**2021-22**	**8%**	N/A	**94**
7	Constant F_{MSY}	2019-20	8%	12%	99
8	Constant F_{40}	2019-20	8%	12%	97
9	Constant F_{48}	2019-20	7%	9%	77
10	Constant F_{50}	2019-20	7%	9%	73
11	Constant F_{60}	2019-20	6%	8%	53

RAG consideration: Forecasting an RBC for the fishing season ahead

The FFRAG noted advice from the project team that a lag existed between when the data was available to support the model (30 June 2020), when the stock assessment was considered (November 2020) and when the RBC takes effect on the stock (2021-22 fishing season). AFMA advised that common practice in other AFMA managed fisheries to address this issue was to set an RBC based on what the stock was predicted to be a year in advance of when data was available, and to assume the full TAC was to be taken along with average recruitment occurring in the intervening year. It was noted that this was the general approach but RAGs would deviate from it if evidence existed to do so.

The project team advised that outputs from the stock assessment model had been prepared as an option that would assume that the 2019-20 fishing season had proceeded with average recruitment (based on the stock recruitment curve), removing natural mortality and removing predicted fishing mortality (55 t, 39 t sunset harvest, 4 t TIB harvest (based on the mean of the past three TIB seasons), 10 t subsistence, 2 t of recreational and 0 t of charter catches). Based on this additional year of information the model can produce a forecast for the level of biomass and RBC for 2021-22.

The RAG noted project team advice that, as Spanish mackerel recruits need two years of growth before they enter the fishery, the assumed recruitment within the forecast period will have very little effect on the constant F RBC outputs.

Estimating non-commercial catches

The Finfish RAG reviewed the available information to support estimates of non-commercial

catches available to the PZJA in setting a Total Allowable Catch from the RBC. The RAG noted advice from Dr O'Neill and the Chairperson that the QDAF recreational fishing for 2019-20 had concluded however, the survey did not sample the Torres Strait to form a meaningful estimate of recreational catches for the region.

The RAG noted that 10,000 kg of catch estimated for subsistence catch by Traditional inhabitants, at 7.3 kg average weight per fish (based on the most recent biological sampling), would represent 1400 fish from all communities. This roughly translates to an average take of a few hundred fish from each Torres Strait community per year. Applying the same average weight, the previously assumed two tonne catch[4] for recreational fishing represented around 280 fish.

Industry members and the TSRA member considered that both the subsistence and recreational estimates were a likely underestimate for the coming season.

- The TSRA member advised that, based on consultation on the Waphill trainee project, fishers in eastern communities are reportedly catching good numbers of Spanish mackerel for subsistence. The TSRA member has been advised by fishers that Spanish mackerel is not being sold due to the current lack of infrastructure.

- Industry members advised that along with having periods of good catches, many eskies of frozen Spanish mackerel are regularly shipped south to friends and family and are also used as barter/trade in communities. By way of example, industry members advised that within one community over the last three weeks, around eight boats have been fishing twice daily and landing 5-7 Spanish mackerel each fishing session per boat.

- Industry members were of the view that the recreational boat numbers have increased over time, with a lot more contractors resident in Torres Strait taking boats out to communities to fish in their spare time.

- Industry members advised that along with the rollout of fisheries infrastructure in the near future there is a likelihood that with more fishers commercially targeting mackerel, more catch will be retained also for subsistence.

The RAG discussed the potential for recent observations to cause bias in the perception of seasonal trends, noting earlier advice from industry that there had been limited fishing most of the year due to poor weather. An industry member also commented that Spanish mackerel was not a preferred subsistence species with communities preferring species like Siganids (rabbitfishes) instead. However, on balance, the RAG accepted member advice that the previous estimates were likely an underestimate and, in line with the objectives of the Treaty, traditional fishing needed to be protected and have priority over harvesting for commercial purposes.

The RAG recommended increasing non-commercial catch estimates for Spanish mackerel for calculating TACs for the 2021-22 season (that is reducing the RBC by the total estimate to derive the TAC). Increases were recommended from 10 tonnes for subsistence to 15 tonnes and from 2 tonnes for recreational to 5 tonnes. Consistent with previous years, the RAG agreed that charter fishing catches were likely to be minimal and accepted AFMA advice that Australia and PNG were unlikely to enter into catch sharing arrangement under the Treaty in 2021-22 fishing season. Both were subsequently left unchanged for the 2021-22 fishing season.

[4] The Spanish mackerel stock assessment team advised that the model used the 2013 point estimate of 2 t for recreational sector harvest with error bars ranging from 2-4 t (the model alternates between 2, 3 or 4 tonnes).

Agenda item 3.3 Coral trout recommended biological catch

The RAG recommended maintaining the coral trout RBC at 135 t for the 2021-22 season noting:

a) catches remain low in the fishery (catches for the 2018-19 fishing season were 34.3 tonnes);

b) the preliminary stock assessment undertaken in 2019 indicated that the stock biomass is likely to be high (the preliminary stock assessment estimated the biomass to be around 80 percent of estimate virgin biomass (B_0), with all of the model estimates of spawning biomass being above B_{65});

c) although there is the potential for catches with further fisheries infrastructure development under TSRA funded programs, industry members did not forecast significant increases by 2021-22 fishing season; and

d) it was not a priority at this time to estimate catches taken outside the fishery. However, the RAG recommended that AFMA under work next year to support RAG consideration of likely catches ahead of the following fishing season.

The RAG re-iterated that the data priority for the fishery remained as, improving the accuracy of catch and effort data (for example reporting catches by species rather than a basket of the four trout species) and biological sampling.

Noting that the fishery has remained under-utilised for some time, the TSRA member sought RAG advice on what information is needed to support a more accurate/reliable stock assessment which could then be used to adjust the TAC. The RAG noted that the research priorities to address gaps in the preliminary stock assessment were identified by the RAG in 2019. The priorities being to undertake further habitat mapping work, analyse the mid-90s CSIRO dive survey data, improve catch and effort data from TIB fishers and collect fishery independent data, such as an underwater survey and/or biological sampling.

The RAG noted previous advice that there a significant advantage to undertaking a fishery independent dive survey of abundance prior to any significant fishing pressure being applied. Such a survey would act as a baseline to measure the potential productivity of the fishery.

RAG consideration – likely industry development

An industry member advised that there will likely be increased interest in coral trout fishing with further infrastructure development in Torres Strait as more community freezers commence operations. It was reported that the Erub I Freezer (Darnley Deep Seafood) was back in operation with good demand for both fillet and whole trout being shipped to Cairns and then exported to China. An industry member from Mer advised that fishers were fishing trout and processing through a small scale private freezing operation to supply mainland buyers for good profit.

It was further noted that the *Seaswift* freight company was investigating installing recirculating live tanks to their Torres Strait cargo vessels. This would allow live trout and reef-fish to be sent to Cairns and other ports from Torres Strait. If cost-effective, this could support industry growth into the live trade market.

The RAG noted advice from TSRA Finfish Quota Management Committee members present at the RAG that there was little interest from Queensland east coast operators leasing access to the Torres Strait Reef Line Fishery. This was noted as likely being due to the cheap lease price on the

east coast line fishery, operators there focusing on live trout trips and the readily available quota in that fishery. With low Torres Strait Spanish mackerel quota in 2020-21 it was noted that there was some increased interest in leasing trout by Sunset licence holders that mainly target mackerel. It was noted that the healthy level of the trout stock and large available TAC would represent an opportunity for the new *Zenedth Kes* fishing company to lease trout and grow the company should there be interest in leasing or fishing within the TIB sector.

The RAG reiterated its support for the Torres Strait Fish Receiver System and the work AFMA was doing in communities to encourage fishers to report trout catches down to species level rather than as a basket. It was noted that the species-split issue posed a challenge for management and science. Further, it was noted that as trout grow to the larger sizes they turn into males, meaning they contribute less to the spawning biomass, which represents another challenge for management as the fishery develops.

Agenda Item 4 – Management

Agenda item 4.1 Logbook review TSF01

The RAG noted an update from the AFMA EO on the data presently collected through the AFMA *TSF01 Torres Strait Finfish Fishery Daily Fishing Logbook.* AFMA outlined a number of issues identified by the RAG over time to improve the quality of catch and effort data coming from Sunset fishers. The RAG noted that this agenda item was to get general advice from the RAG ahead of some succinct project work with industry members in 2021 with a view to implementing a new logbook for the 2021-22 season.

It was noted that advice was sought on tactical changes to TSF01 to improve data from the Sunset sector as well as broader changes that might facilitate adoption by TIB sector fishers, noting that it is not mandatory for these fishers to complete a daily fishing logbook at this time.

The RAG agreed with the general principle that both Sunset and TIB sectors should be completing the same daily fishing logbook.

Logbooks changes recommended to improve Sunset sector catch and effort data:

Dory driver name
The RAG supported the AFMA suggestion to modify TSF01 to have a clear "*first name and surname*" field for dory driver name noting advice from the Spanish mackerel project team that analysing older historic dory driver data has been unsuccessful due to unclear data; e.g. dory driver name can be recorded as 'James', 'Jim', 'Jimmy' and cause confusion.

Shark depredation
The RAG supported modifying TSF01 to quantify the impact on catch rates over time from shark taking catch from lines (shark depredation). The RAG noted that industry have raised shark depredation as an issue that could be affecting the interpretation of catch rates. It was noted that Western Australian Fisheries have changed their logbook to ask fishers to record "*how many fish did you lose to sharks in this fishing operation?*" RAG members suggested that this part of the logbook should be a simple box where fishers should write the number of fish lost to shark depredation. The instructions should make it clear for fishers to write a zero when no interaction occurred and to not leave this field blank.

Tender data including location for both Spanish mackerel and coral trout

The RAG supported modifying TSF01 to better collect finer scale information about where fishing occurred for both Spanish mackerel and trout operations. It was noted that, for coral trout, it is important to know the number of reefs visited per fishing session.

The RAG noted that TSF01 records the location for where a primary boat is operating per fishing day and records catch taken per dory for Spanish mackerel. The RAG noted that Spanish mackerel dories generally operate nearby to the primary vessel meaning that the location of fishing operation is generally well recorded. However, for coral trout, the RAG noted advice that tenders in this fishery may travel over a wider range and visit a number of coral reefs in a fishing session meaning the location of fishing effort was poorly captured in TSF01.

Industry members advised of a concern that Sunset fishing tenders may be fishing inside the 10nm radial closures (while the primary is anchored outside) around eastern communities and collecting finer scale fishing effort data may help address this risk.

Michael O'Neill advised that, in the Queensland East Coast Spanish mackerel fishery, the data needs include the hours fished per day and the number of sites fished within a zone. It was advised that QDAF is investigating whether Vessel Monitoring Systems (VMS) fitted to dories can be used to meet this data need rather than changing their logbooks. Research is being done on how VMS data can be integrated into the stock assessment model to get information about fishing operations and where they occurred.

Fish weights: logbooks vs. CDRs

The RAG support AFMA working to update their systems to automatically link the Finfish logbook and Catch Disposal Record (CDR) data through a 'Trip ID' or fishing event. This would make is more time efficient to link the CDRs with verified weights with the numbers fish caught per trip.

The RAG noted that a data need for the fishery is to be able to link each fishing event in the daily fishing logbook to the corresponding CDR to best determine the average weight per fish landed. The RAG noted that generally, weights recorded in Daily Fishing Logbooks are back-deck estimates with CDRs completed in port on accurate scales are being used to verify these logbook weights. The RAG noted that CDRs are used by AFMA to deduct catches from catch holdings, not daily fishing logbooks.

The RAG noted that the reef-line portion of the logbook had data fields for 'number' and 'weight' of fish. It was noted that the mackerel section only requires fishers to record the numbers of fish and average weight/number of cartons. The RAG suggested working with industry to understand their practices for estimating or weighing fish at sea and how this varies between reef-line and mackerel fishers.

Species splits for trout

The RAG supported amending TSF01 to remove the percentage species splits estimates for coral trout and have fishers record each species individually line by line including number and kilogram.

RAG members reiterated concerns that a challenge for science and management in the reef-line fishery was the fishery catching a basket of four coral trout species and not recording them at species level. The RAG noted that fishers at present could report a basket of trout (e.g. 100 kg) and provide a percentage split to estimate the number of common, bar-cheek, blue-spot and passionfruit (e.g. 85 % common, 15 % bar-cheek).

Spatial reporting – including TIB fishers

The RAG supported redesigning the logbook, if appropriate, to help make it more user friendly for both Sunset and TIB sector fishers to fill out. The suggestion was made that have one page represent a single fishing day might make the logbook less cluttered and easier for new fishers to fill out.

RAG science members supported the extra effort fishers are going to through the FRS Catch Disposal Records (TDB02) to volunteer the broad area fished, noting the reporting zones are very large in the CDR book. However, it was advised that, to best support stock assessments, a finer scale measure of where fishing effort occurred would be needed from TIB fishers, particularly for trout, which are known to be generally found in only a small area of reef.

The RAG noted concerns from TIB industry members that reporting an exact location fished is not traditional practice within communities and was a part of Traditional Knowledge and needed to be respected. Industry members advised that this would be a challenging issue as fishers want to volunteer data to help their fishery science and management but do not want their Traditional Knowledge released to outsiders.

RAG members advised that the key to help adoption will be education, awareness and engagement with industry around the firm confidentiality requirements of the daily fishing logbook program. It was noted that, while a CDR is filled out by both a fisher and fish receiver, the daily fishing logbook is confidential and is sent straight to AFMA where it is housed securely. AFMA advised that strict information disclosure rules are in place to protect the commercially sensitive nature of these data; where data from a single fisher should never be able to be discerned from looking at any data publication.

The RAG noted advice from TIB fishers to AFMA that recording latitude and longitude co-ordinates would be another challenge in adopting daily fishing logbooks. The RAG considered the AFMA suggestion that fishers (TIB and Sunset) could be given the simpler option to report location fished as an 11 x 11km square 'hill-grid' with a grid and then a site recorded within this grid (noting the logic of these were that a hill-grid was 1/10th of a degree of longitude and equated to 6 x 6 nm). RAG members noted that the hill-grid system would be well suited to Spanish mackerel and might be suitable for coral trout based on reef site fidelity, noting sub-populations tend to stay on a single reef with some reefs spanning more than one hill-grids. It was noted that this could be further explored with industry during project work and consultation.

Non-commercial fishing data needs for the fishery

RAG industry member Kenny Bedford provide the RAG with an update on the AFMA funded project *Developing an approach for measuring non-commercial fishing in Torres Strait.* The RAG noted that RAG Chairperson David Brewer was a co-investigator on the project alongside their colleague Dr Tim Skewes.

Mr Bedford advised that a clear shift within industry was apparent over recent years with communities embracing the need for data collection and stewardship including the need for data to support their fisheries. This includes a growing sense of responsibility for all natural resources including non-commercial species such as rabbitfish.

The project is reflecting on past strategies to collect non-commercial catch data that have not been successful, as well as focusing on the stakeholder needs for such data. It was advised that there is a need for a 'critical mass' within a community to support a system given it is a shared responsibility. The project is focused on recommending a straightforward method to collect these important data with a draft report near completion.

The project is likely to recommend an education campaign to help communities understand why the collection of these data is important especially as part of an ecosystem based management system rather than considering a single species at a time.

Recognising that collecting data on non-commercial catches is a key issue for the fishery, the RAG recommended that 2021 rounds of community visits and any consultation by AFMA/TSRA should add communicating the outcomes of the non-commercial catch project to the agenda to help communities' understanding.

4.2 Western line closure

The RAG noted an update from AFMA on the status of the Western Line Closure review as outlined in the agenda paper. Industry members advised that a clear outcome of the October 2020 fisheries summit was industry support for the removal of the reef-line closure for the fishery north of Numar Reef. This was recommended to provide economic opportunities for Dauan and Boigu communities to enter the reef-line fishery and target inshore species such as Barramundi and jewfish, but also crab, mussels, garfish, mackerel and coral trout. Retaining the closure south of Numar Reef was considered to be a compromise that would remove interaction of the reef-line fishery with the Tropical Rock Lobster fishery in mid-western Torres Strait communities.

The RAG noted the following risks and considerations with lifting the northern part of the closure:

- *General uncertainty on the nature and extent of fishing expected once the closure is removed*. Industry members advised that around 6 operators per community in Gudumalalgal (Boigu, Dauan, Saibai) were interested and able to fish in the finfish fishery. Species of interest are Barramundi, jewfish, garfish, ‘zarum’ and coral trout

- *Impacts on traditional fishing*: The RAG noted that commercial fishing in and around the relatively small near shore habitats may impact traditional fishing catch rates and sought advice from industry members on the likely interaction between the two sectors (commercial and traditional). Industry member advice was that the impact could be managed as it would likely be a relatively small number of fishers working commercially per community.

- *IUU incentives:* It was noted that the opening may have impacts on incentives for Illegal, Unregulated and Unreported fishing, with jewfish swim bladder being a particularly valuable commodity. Dr O’Neill advised that, on the Queensland East Coast, jewfish have proven to be a challenging species to manage with substantial management actions in place to regulate both commercial and recreational fishing for the vulnerable species.

- *Potential targeting of less productive species*: Dr O’Neill advised that, due to netting impacts, another inshore species - King Threadfin Salmon - were also in a vulnerable position at present due to overfishing.

- *Shared stocks with PNG*: Noting the proximity of Gudumalalgal communities to identified key PNG spawning habitat for Barramundi and likely connectivity between the stocks, the RAG noted that AFMA will need to work closely with the PNG National Fisheries Authority on proposed changes. The PZJA will also need to consider obligations under the Treaty alongside any proposed changes to Australian management arrangements for Barramundi. The RAG noted that under the Torres Strait Treaty commercial fishing for Barramundi is limited to only Australian Traditional Inhabitants and only in the Torres Strait within a

defined area surrounding six islands within the 'top-hat' of the Protected Zone. Under the Treaty PNG retain the right to fish Barramundi in the waters surrounding these communities within the top-hat.

- *Gillnetting in PNG:* The RAG noted AFMA advice previously tabled in the FFWG by PNG NFA, that fishers in PNG Western Province have had issues with their catch rates using gillnets to target Barramundi and jewfish. As a result PNG NFA have investigated whether fishers can effectively move to line fishing with lures.

- *Community freezer:* An industry member advised that the infrastructure review had suggested a small portable freezer would best be suited to support these communities in the short term during the opening. It was advised that this could be a low risk, cost-effective investment as it could be relocated should the infrastructure not have sufficient usage.

- *Fishery independent survey:* RAG science members advised that a fishery independent stock survey would be the ideal science to understand the finfish stocks in this area noting though that this is an expensive option.

The FFRAG supported the suggestion that a targeted round of consultation occurs in Gudumalulgal to discuss the following three options with communities to support opening the reef-line fishery in this area:

Option	Detail
1: Opening with data collection and monitoring	Noting that it would likely only be a few fishers from each community active in the short term, the fishery could be opened with an agreed obligation from these fishers to contribute to monitoring. Monitoring will help form an understanding of what the fishery might look like (who is fishing where, what species, fishing effort) with annual review. The RAG suggested the following options for monitoring to be discussed with communities: ▪ CDRs (fish receiver system) status quo arrangement ▪ Daily Fishing Logbooks ▪ Onboard scientific observers (catch comp, bycatch, discards, TEPs, invasive fish species) ▪ Port sampling for biological sampling / verification (potential indicator for future decision rules).
2: Survey before opening	Fishery Independent Survey before opening to inform what the fishery stock is (standing stock biomass), noting that it is good to assess natural mortality while the stocks are relatively unfished.
3: Adaptive management	Run an adaptive management approach which could allow fishing in a part of the fishery. AFMA/RAG are able to then consider the results/risks and apply the learnings to the rest of the fishery (smaller scale experiment first, low level fishing ahead of heavier fishing).

Plan of action

AFMA advised that they would engage top-western community members through upcoming community consultations. AFMA advised they could give information for communities to consider and seek their views on:

- aspirations for the fishery – community expectations on what the fishery will look like (number of operators, location, targeted species);
- likely impacts on subsistence fishing;

- likely high risks associated with targeting jewfish;
- data needs – monitoring that would be possible against indicators to support how the fishery is responding to fishing; and
- the need to review the opening after one year to check whether enough data has been captured to feel safe and continue the opening.

AFMA noted the request from industry Tenny Elisala and the offer from industry members Cr. Rocky Stephen and John Tabo to support the Top-Western consultation with lessons learned from the beche-de-mer Harvest Strategy and eastern community advice.

Fishery history – Torres Strait Spanish mackerel fishery

The RAG noted the management history document AFMA has drafted for the Spanish mackerel fishery. Members noted that the document is intended to be a 'living document' that is updated through time. The RAG agreed for members to consider the document in more detail out-of-session and provide comment to AFMA. Initial feedback from members on events to add include:

a) QDAF long-term monitoring program dates;
b) stock structure work performed by Buckworth and Ovenden;
c) community freezer dates of operation;
d) the JCU Island Freezer work; and
e) attaching the age length key graph which gives a good visual summary of sampling for mackerel over time.

Agenda Item 5 – Research

5.1 Update: Outcomes of the TSSAC meeting

The AFMA member provided an update the outcomes of the TSSAC meeting on 2 November 2020. The AFMA member advised that TSSAC had supported the four finfish fishery research scopes (biological sampling, Spanish mackerel stock assessment, alternate index of abundance and development of harvest strategy). The TSSAC did so noting that the expected AFMA budget would not cover the total costs of projects needed to address all four scopes. The TSSAC noted that AFMA and TSRA would continuing to pursue options to increase available research funding and noted TSRA would be able to better assess their available budget following the appointment of new TSRA Board in February 2021. The four finfish fishery scopes will be included in the public call for research funding proposals for the 2021/22 financial year.

5.2 Update: Coral trout and Spanish mackerel biological sampling

The RAG noted 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. A copy of the presentation is provided at **Attachment F**. The RAG thanked Ms Langstreth for the successful sampling program in 2019/20 fishing season and welcomed industry advice on how supportive communities are of the project.

Agenda Item 6 – Other business

6.1 Other business

No other items of business nominated or discussed.

6.2 Next meeting and meeting close

The RAG noted the meeting schedule and priorities outlined in the agenda item paper. The RAG noted that the meeting schedule may vary if further research projects are commissioned for the Fishery in 2021-22. In particular, finalising a harvest strategy for the fishery will require additional RAG/industry workshops. In closing the meeting the chair and industry members thanked the outgoing executive officer, Andrew Trappett, for his years of excellent service and dedication to the RAG and Torres Strait fisheries.

Meeting closed at 1630 hrs Thursday 5 November 2020

Attachments

Attachment A: FFRAG 8 agenda as adopted.

Attachment B: Spanish mackerel 2020 stock assessment presentation

Attachment C: Table of 2020 stock assessment model runs, advice from FFRAG 7.

Attachment D: 94 and 105 t projections of biomass from the 2020 Spanish mackerel stock assessment model.

Attachment E: Draft Harvest Strategy advice from industry as proposed at two harvest strategy workshops in 2019.

Attachment F: Presentation on the Torres Strait Finfish Biological Sampling Program, Jo Langstreth, QDAF.

Attachment A: FFRAG B Meeting agenda as adopted

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

Attachment C: FFRAG 7 advice on agreed model runs to be used in the 2020 Spanish mackerel stock assessment

Table 1. Analyses/ model runs agreed by FFRAG 7 to be used in the 2020 Spanish mackerel stock assessment. Values highlighted in yellow reflect out of session changes to the natural mortality rate values based on findings by the project team.

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

Attachment D: Further detail on Spanish mackerel RBC projections

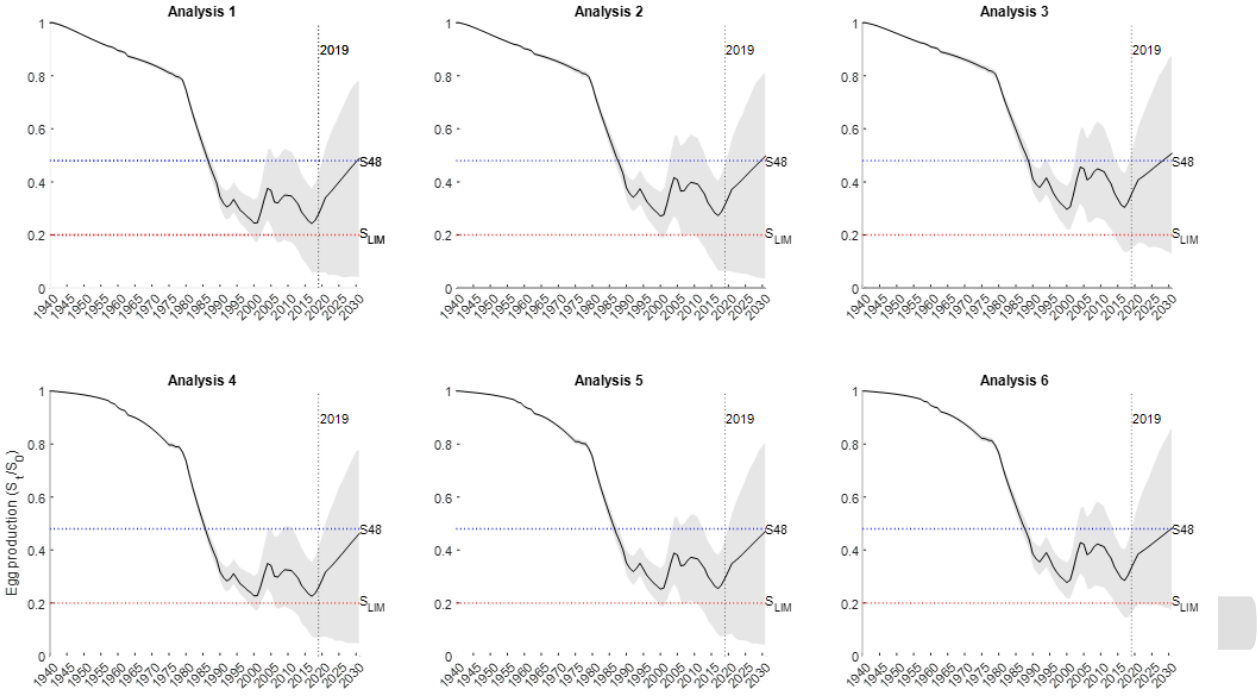


Figure 1. Stock projections for a constant harvest of **94 t** over the next 12 years, note that in all six model runs the stock is projected to be at, or very close to, the target reference point of **F48**.

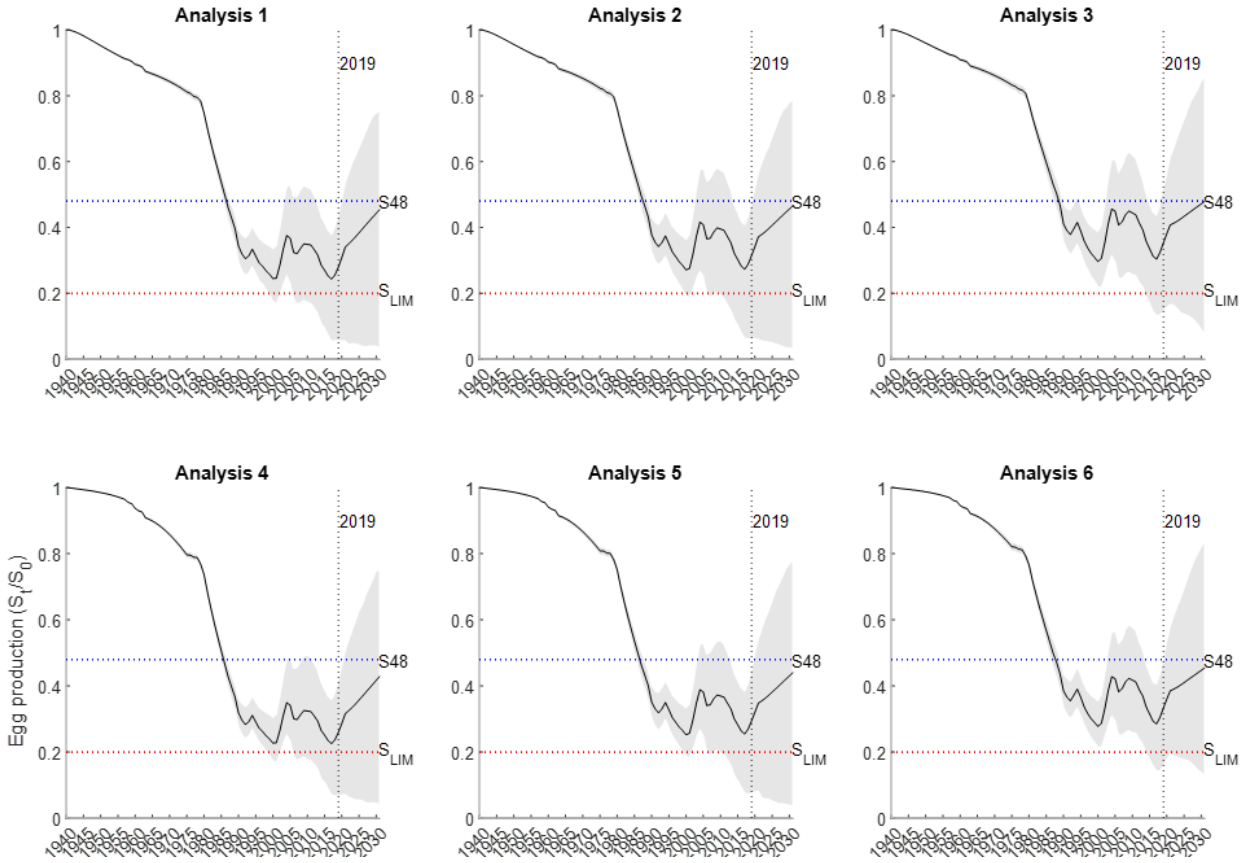


Figure 2. Stock projections for a constant harvest of 105 **t** over the next 12 years, note that although the stock will be building in a positive direction only one of the six model runs is predicted to build the stock to the target reference point of B48 within 12 years.

Attachment E Status of Spanish mackerel draft harvest strategy components.

Guiding principles and key fishery attributes – factors that helped shape the development of the Harvest Strategy	
Recommended	Consistent with the Commonwealth Fisheries Harvest Strategy Policy and Guidelines (HSP, 2018). This is consistent with objectives of the *Torres Strait Fisheries Act 1984* (the Act).
	Have regard for Traditional knowledge and the ability of communities to manage fishery resources locally, through acknowledging and incorporating customary and traditional laws, recognising; Malo Ra Gelar, Gudumalulgal Sabe, Maluailgal Sabe, Kulkalgal Sabe.
	Recognise commercial fishing by Traditional inhabitants is important for local employment, economic development and for the passing down of traditional knowledge and cultural lore. Enough fish needs to be left in the water for fishers to make money and to protect the traditional way of life, livelihoods and cultural values.
	TACs should vary according to stock status (up and down): • If biomass decreases be cautious. Stock is not to go below the limit; • If biomass is increasing be conservative; 'bank' fish.
	Having regard for the current stock size (B_{31}) and that B_{60} is not quickly achieved (possibly greater than 12 years) without significant reductions in catch which may in turn cause significant economic and social impacts on the Fishery, a shorter-term target reference point is first required.
	Torres Strait Spanish mackerel stock are assumed separate from other regional stocks. They do not mix with the Queensland East Coast and the Gulf of Carpentaria stocks (see Buckworth et al. 2007 and Newman et al. 2009).
	There is potential for variations in availability and abundance of Spanish mackerel, due to their movement, schooling and aggregation patterns for feeding and spawning.

	Spanish mackerel are a shared resource important for subsistence, commercial, traditional, charter and recreational sectors.
Outstanding	None identified at this time. Subject to any further FFRAG and Working Group advice

Operational objectives What we want the harvest strategy to achieve.	
Recommended	Maintain the stock at (on average), or return to, a target biomass point (B_{TARG}) equal to a stock size that aims to protect the traditional way and life and livelihood of traditional inhabitants and is biologically and economically acceptable.
	Maintain stocks above the limit biomass level (B_{LIM}), or an appropriate proxy, at least 90 percent of the time.
	Reduce fishing levels if a stock is below B_{TARG} but above B_{LIM}.
	Implement rebuilding strategies, if the stock moves below B_{LIM}.
Outstanding	None identified at this time. Subject to any further FFRAG and Working Group advice

Indicators Indicators provide information on the state of the stock and how the stock is doing against agreed reference points (reference points are addressed below and are a specified level of these indicators)	
Recommended	Biomass – Catch and effort data from daily fishing logbooks is used as a proxy for abundance in the stock assessment model which is used to calculate biomass of the stock as a proportion of unfished biomass (B_0).

Outstanding (1)	Fishing mortality (B) based indicators. The stock assessment model can estimate a level of F to move the stock towards the target. There was some consideration from the FFRAG of using an F-based indicator in the harvest strategy. Advice is sought from the FFRAG on whether there is value in further exploring this as an option.

Reference points A reference point is a specified level of an indicator used as a basis for managing a stock or fishery. Reference points will generally be based on indicators of either the total or spawning stock size (biomass) or the amount of harvest (fishing mortality). Reference points show where we want (target) and don't want (limit) the stock levels in the fishery to be.		
Recommended	Unfished biomass (B_0) = B_{1940} = 100%.	The year 1940 is considered the start of the commercial operations in the Fishery. The unfished biomass B0 therefore is the model-estimate of spawning stock biomass in 1940.
	Short-term target (B_{TARG}) reference point = B_{48}	B_{48}[5] is the default target (a proxy for B_{MEY} - biomass at maximum economic yield) in the Commonwealth HS Policy and the project team advise that B48 is less than BMEY.
	Limit reference point (B_{LIM}) = B_{20}	B_{LIM} is the spawning biomass level below which the ecological risk to the stock is unacceptable and the stock is defined as 'overfished'. This is an agreed level which we do not want the stock to fall below. B_{20} is the default limit proxy in the Commonwealth HS Policy[6].

[5] Comm HSP: The target reference point for key commercial fish stocks is the stock biomass required to produce maximum economic yield from the fishery (BMEY). For multispecies fisheries, the biomass target level for individual stocks may vary in order to achieve overall maximum economic yield from the fishery. In cases where stock-specific BMEY is unknown or not estimated, a proxy of 0.48 times the unfished biomass, or 1.2 times the biomass at maximum sustainable yield (BMSY), should be used. Where BMSY is unknown or poorly estimated, a proxy of 0.4 times unfished biomass should be used. Alternative target proxies may be applied provided they can be demonstrated to be compliant with the policy objective.

[6] Comm HSP: All stocks must be maintained above their biomass limit reference point (BLIM) at least 90 percent of the time. Where information to support selection of a stock-specific limit reference point is not available, a proxy of 0.2 times unfished biomass should be used.

Outstanding (2)	B_{48} is less than B_{MEY}	The HS project team advise the current target of B_{48} is less than B_{MEY}. FFRAG discussion and advice on this calculation is required to ensure a common and clear understanding.
Outstanding (3)	Long term B TARG = B_{60}	Advice from the HS project team and RAG scientific members is sought on the suitability of B60 in comparison to other target biomass levels above B_{MSY} having regard for the biology of the species and performance of the HS in meeting its objectives. Stakeholders have recommended that the HS ensures enough fish are left in the water to support commercial fishing but also protect the traditional way of life and livelihoods of traditional inhabitants. Advice to date is that a higher target biomass level (referring to 60%), would increase catch rates and improve profits in the fishery over other lower reference points, such as B_{48}. Having regard for any advice from the HS project team advice is sought however, RAG advice on the suitability of of B_{60} against other possible higher target biomass levels. There are likely to be trade-offs between medium-term returns from the fishery (significantly reduced TAC) and longer-term returns (more fish in the water meaning less cost to catch and therefore higher returns. Also there would be more fish in the water for other users). Quantitative analysis and/or evidence from comparable fisheries is sought to enable more evidence based advice and decision making on the longer-term target.

Decision Rules (*also called Harvest Control Rules*) These rules are designed to maintain and/or return the stock to the target reference point.		
Recommended	If stock falls below the limit reference point (B_{LIM}).	The Fishery is closed (all commercial fishing for Spanish mackerel is to cease) and subject to a rebuilding strategy. The nature of the rebuilding strategy will be determined on the basis of the stock assessment (to be applied immediately) and the rate of recovery (i.e. number of years to achieve a biomass greater than B_{LIM}).

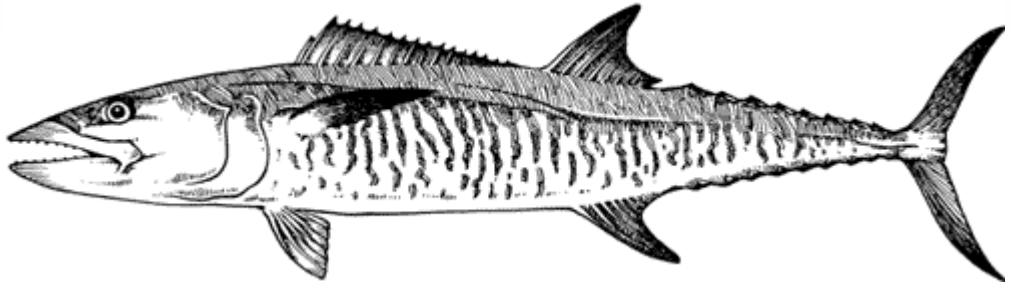
	Re-opening the Fishery[7]	Following closure of the Fishery, the Fishery can only be re-opened when a stock assessment determines the Fishery to be above the biomass limit reference point.
Outstanding (4)	If the stock is above the limit reference point but below the target reference point.	The RBC is to be set at level that allows for the stock to build towards the target. Importantly the decision rule can be designed to build the stock at different rates (e.g. the number of years for the stock to build to the target reference point or the rate of building near the target or limit). An outstanding action has been for the FFRAG to consider scenarios with multiple timeframes to build the stock to reach B_{48}. Specifically to examine a 12 year recovery time (equivalent to 3 times the average age of maturity) and explore 10 and 8 year recovery periods as alternatives. Having regard for any advice from the HS project team, advice is sought from the RAG on appropriate building rates to incorporate into the HS decision rules and/or a work plan for examining options noting scenarios will be examined and presented by the Spanish mackerel stock assessment team (*AFMA funded project 2019/0831*) as part of the next stock assessment update to be presented at the FFRAG planned for 27-28 November 2019.
Outstanding (5)	If stock is overfished (below B_{LIM})	Consistent with the Commonwealth HS policy the FFRAG and FFWG have recommended that commercial fishing for Spanish mackerel should cease if the stock falls below B_{LIM}. Further FFRAG discussion and advice is now sought to consider additional decision rules and actions required to guide rebuilding and to trigger any necessary reviews of the HS, noting the HS should be designed to avoid the stock breaching the limit.

[7] Comm HSP: Once a stock has been rebuilt to above the limit reference point with a reasonable level of certainty, it may be appropriate to recommence targeted fishing in line with its harvest strategy, which will continue to rebuild the stock towards its target reference point.

		FFRAG are to note and discuss the HS policy requirements to be included in the Spanish Mackerel HS if the stock falls below B_{LIM}: a) that targeted commercial fishing for Spanish mackerel will cease, b) a rebuilding strategy will be developed to build the stock above B_{LIM} with a reasonable level of certainty. c) If B_{LIM} is breached while the fishery is operating in line with HS, the HS must be reviewed. FFRAG to provide advice on: a) A process to understand how the stock has rebuilt above B_{LIM} with certainty in the absence of commercial fishing e.g. model projections. b) whether a decision rule with a lower level of fishing pressure would be appropriate if the stock is above but close to B_{LIM}.
Outstanding (6)	Utilisation related Decision Rules (desired fishing intensity) noting a fishery may have indicators and reference points including spawning stock size (biomass) or the amount of harvest (F or fishing mortality i.e. utilisation of the resource).	Decision rules have yet not been established for harvest related performance metrics such as future 'target' catches or 'target' catch rates desired by industry per primary vessel or per TIB dory day. Given that limited catch and effort data has only recently become available from TIB sector, the HS focus has been on agreeing biomass based reference points and decision rules. Additionally at the last FFRAG/FFWG meeting with regard to considering various longer-term target biomass reference points, industry expressed a strong preference for management to focus on building the biomass back to BTARG in the coming years, before exploring any other scenarios. FFRAG are asked to confirm this approach and consider how future decision rules may incorporate increased growth of the TIB sector.
Outstanding (7)	Precautionary increases to total allowable catches.	Stakeholders recommended that if the stock assessment outcomes suggested increases in the TACs, these increases should only occur slowly through some kind of change limiting rule, noting that an increased TAC would likely not affect the TIB sector with a low present

		level of utilisation. Stakeholder advised a preference for 'banking' these fish to contribute to the biomass and future catch rates rather than harvesting this extra stock. At the last FFRAG/WG meeting a number of challenges were identified with applying a change limiting rule for possible TAC increases. Instead the RAG/WG placed priority on examining different building rate scenarios which may achieve this desired precautionary outcome. FFRAG are asked to confirm this approach and provide advice on how to progress change-limiting rules if necessary.

Monitoring and assessment cycle	
Recommended	Based on the most recent estimate of the stock status (0.31 times unfished biomass) and declining biomass (and CPUE) trend, a stock assessment should be performed annually until the biomass is estimated to be above B_{40}.
Outstanding (8)	Subject to any further advice from the HS project team, FFRAG advice is sought on: a. An appropriate assessment cycle when the stock is above B_{40} and/or methods for evaluating future assessment cycles. b. Likely data needs to support monitoring stock performance under the Strategy over time, noting that some biological data is to be sampled in 2019 and 2020 as a snapshot to augment our understanding and assessment of the stock but no monitoring program advice has been developed or presented to date. c. Standard procedures for applying the decision rules to the stock assessment outcomes and any other minimum stock assessment scenarios and/or sensitivities that should be examined e.g. to support 2019-20 season TAC setting the FFRAG (meeting 4) used a methodology of selecting the median of a range of plausible stock assessment scenarios to recognise a range of uncertainty.



Torres Strait

Scomberomorus commerson

Spanish mackerel

The 2020 stock assessment

WG meeting, November 2020

Summary current and target indicators

Indicator	Median results
Current 2019-2020 spawning biomass/unfished biomass	30 per cent
Limit spawning biomass / unfished biomass	20 per cent
Potential MSY from the B_{2021} exploitable biomass	146 tonnes
Harvest tonnes taken in 2019-2020 (all fishing sectors)	69 tonnes
Recommended Biological Catch (RBC) for 2020-2021	71 tonnes

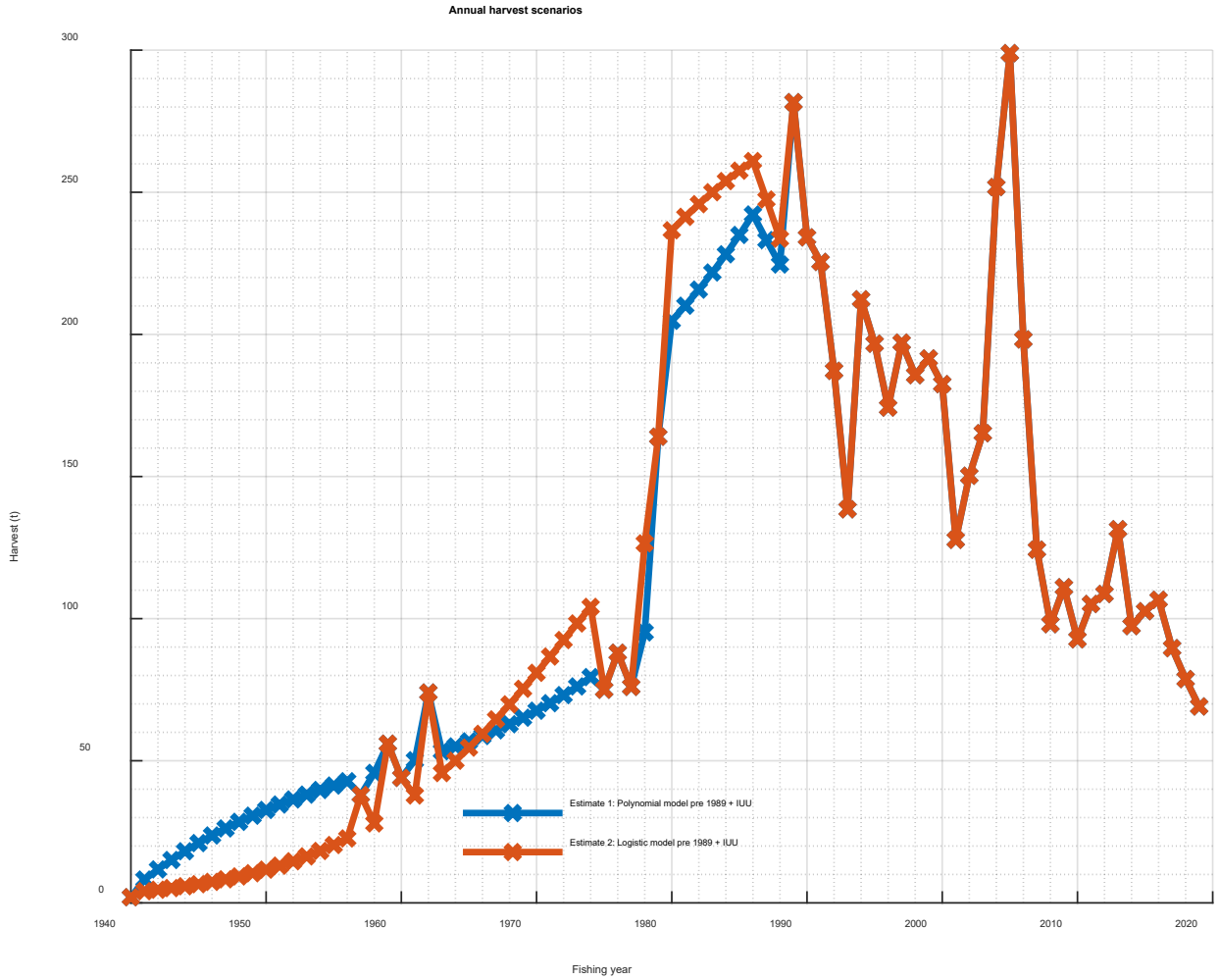
Summary current and target indicators

Indicator	Median results
Potential F_{48} harvest from the B_{2021} exploitable biomass	112 tonnes
Potential F_{50} harvest from the B_{2021} exploitable biomass	105 tonnes
Average between F_{48} and F_{60}	94 tonnes
Potential F_{60} harvest from the B_{2021} exploitable biomass	75 tonnes

Summary points

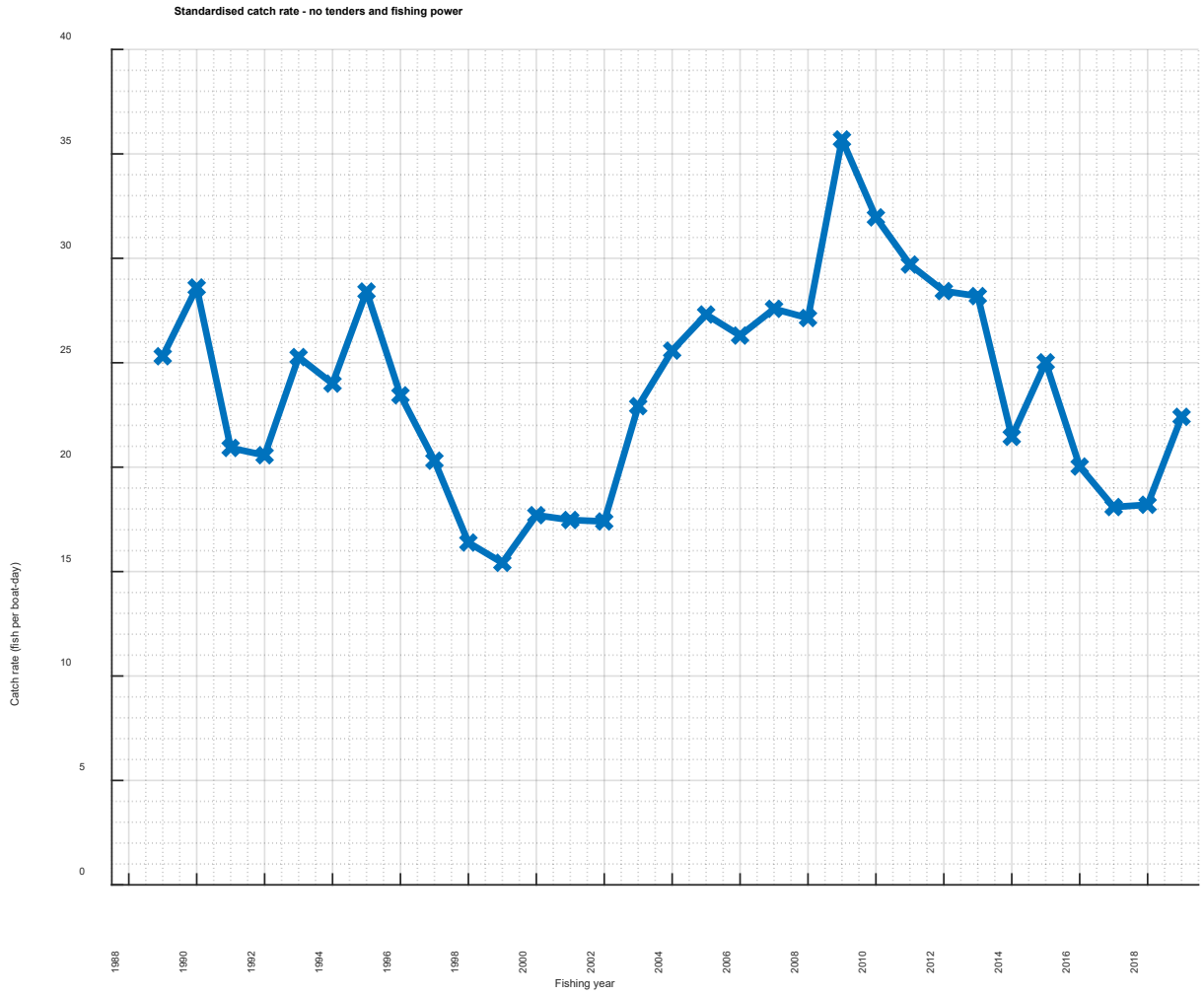
- Catch rates have **increased.**
- New fish age frequency data.
- Biomass results are **higher** compared to last year.
- RBCs forecast for the 2021-22 season.

Estimated harvests (all fishing sectors)

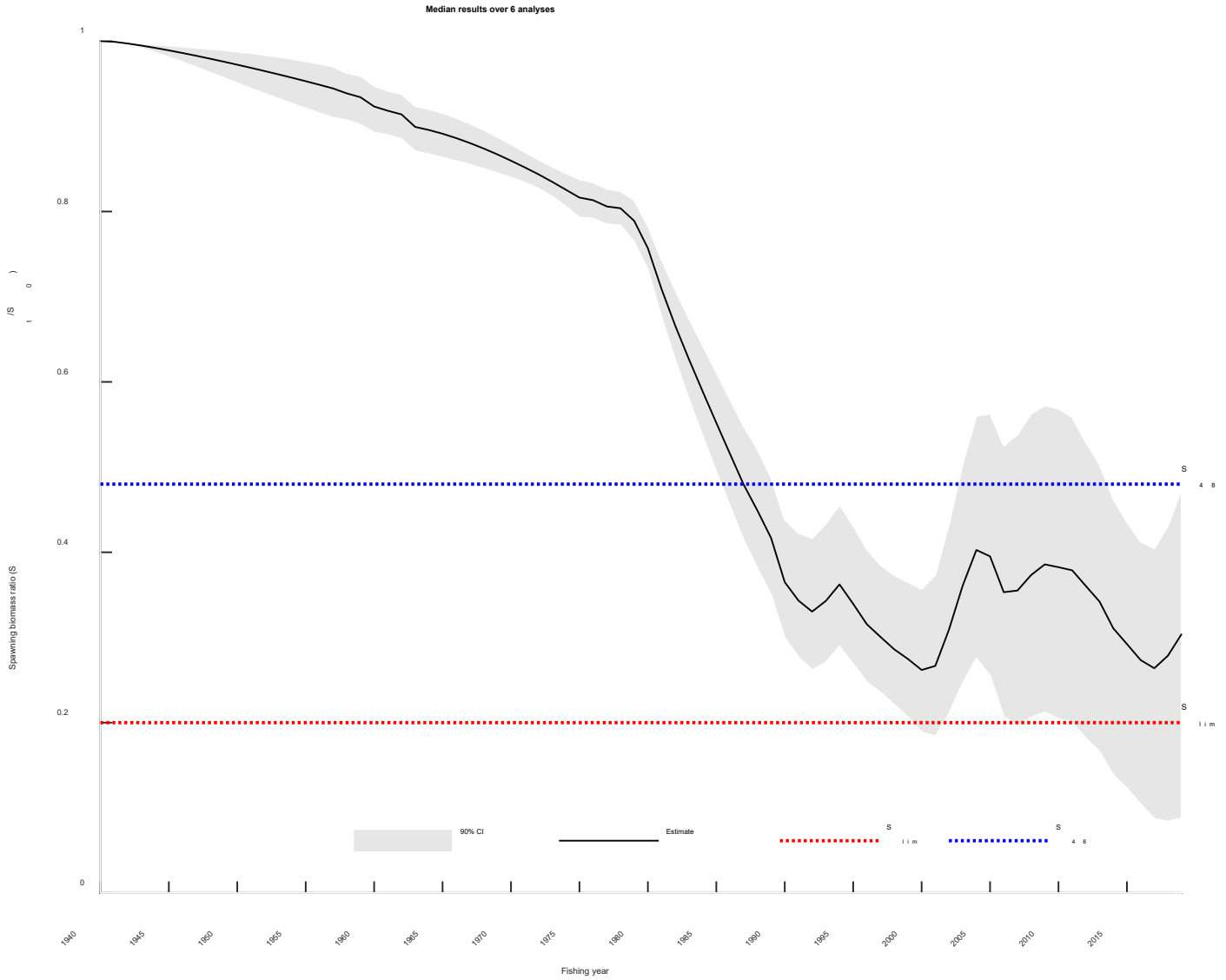


Standardised catch rates

SM02 and TSF01 logbooks; CIs ≈ ± 2 fish



Spawning biomass (egg) ratios



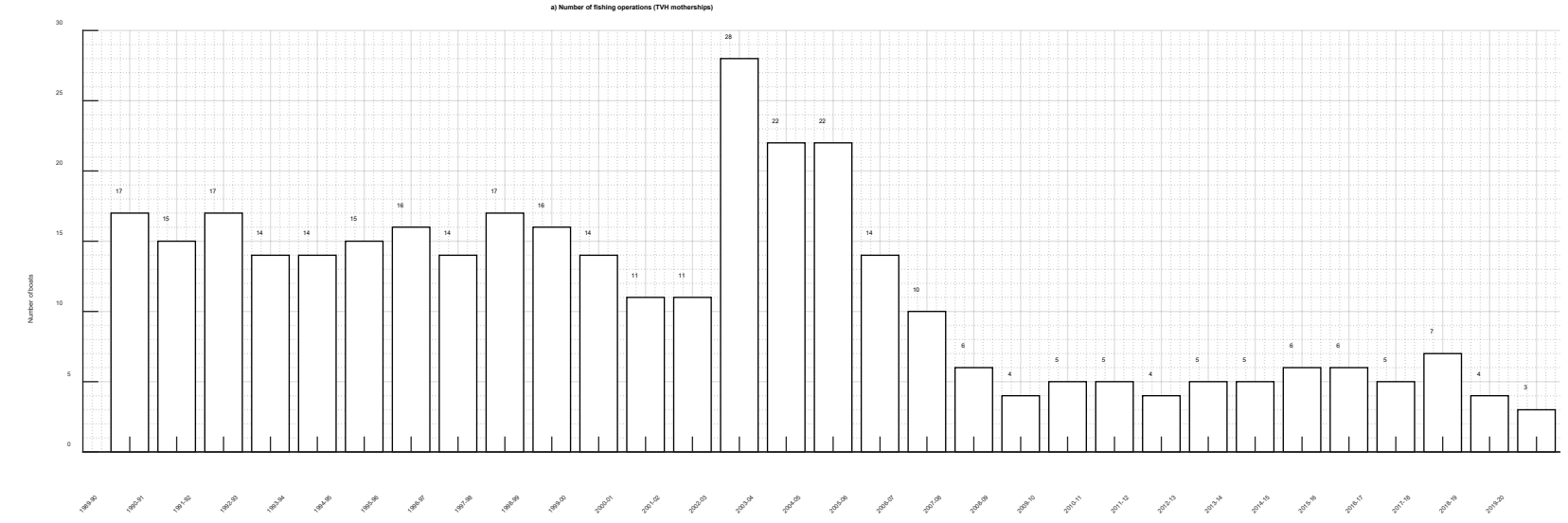
Summary of potential RBC's for all fishing sectors

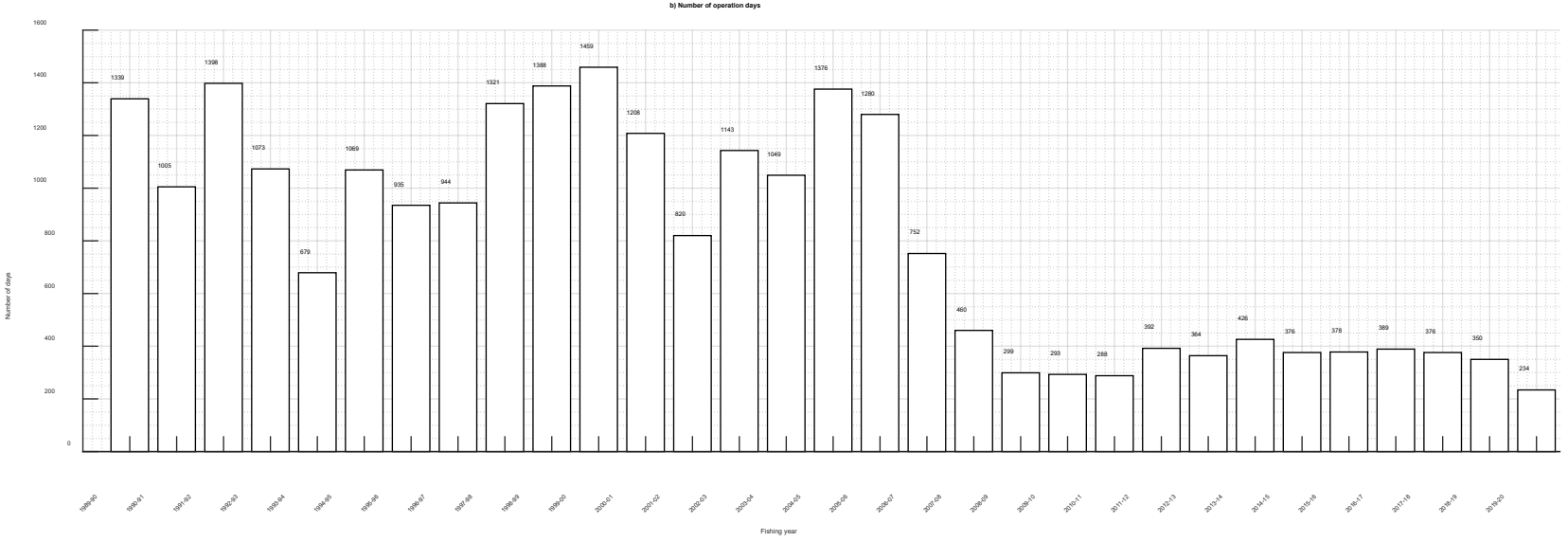
No.	Name of RBC approach 1940-model	Biomass year for the RBC calculation	% of simulations below S_{20} over 12 years and 6 analyses Assuming average recruitment, and the constant RBC	Median 2021-22 RBC tonnes Over 6 analyses
1	Constant F_{MSY}	2021-22	**12%**	**146**
2	Constant F_{40}	2021-22	**12%**	**145**
3	Constant F_{48}	2021-22	**9%**	**112**
4	Constant F_{50}	2021-22	**8%**	**105**
5	Average of F_{48} and F_{60}	2021-22	**8%**	**94**
6	Constant F_{60}	2021-22	**7%**	**75**

End

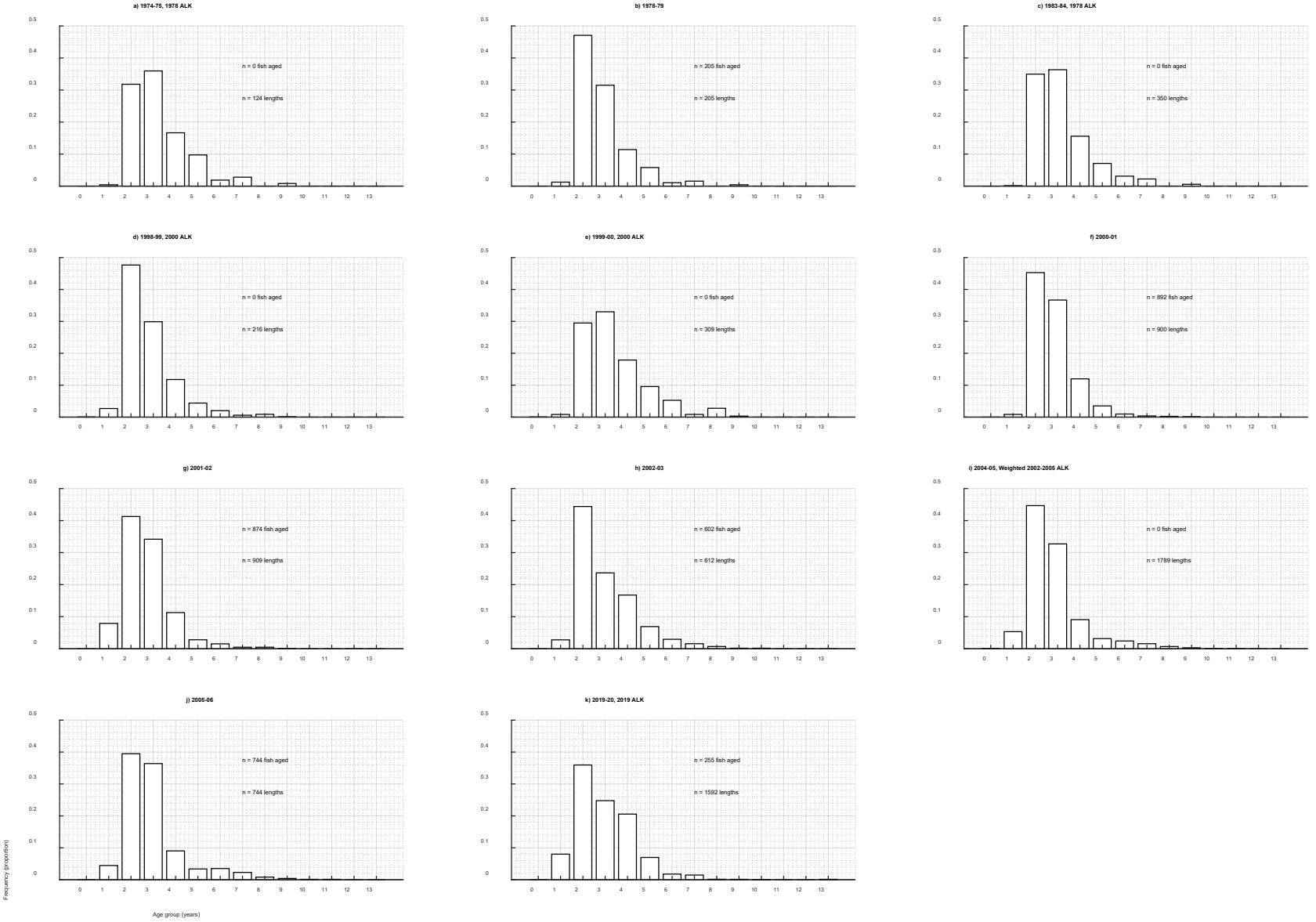
Supplementary slides

Sunset nominal effort by fishing year

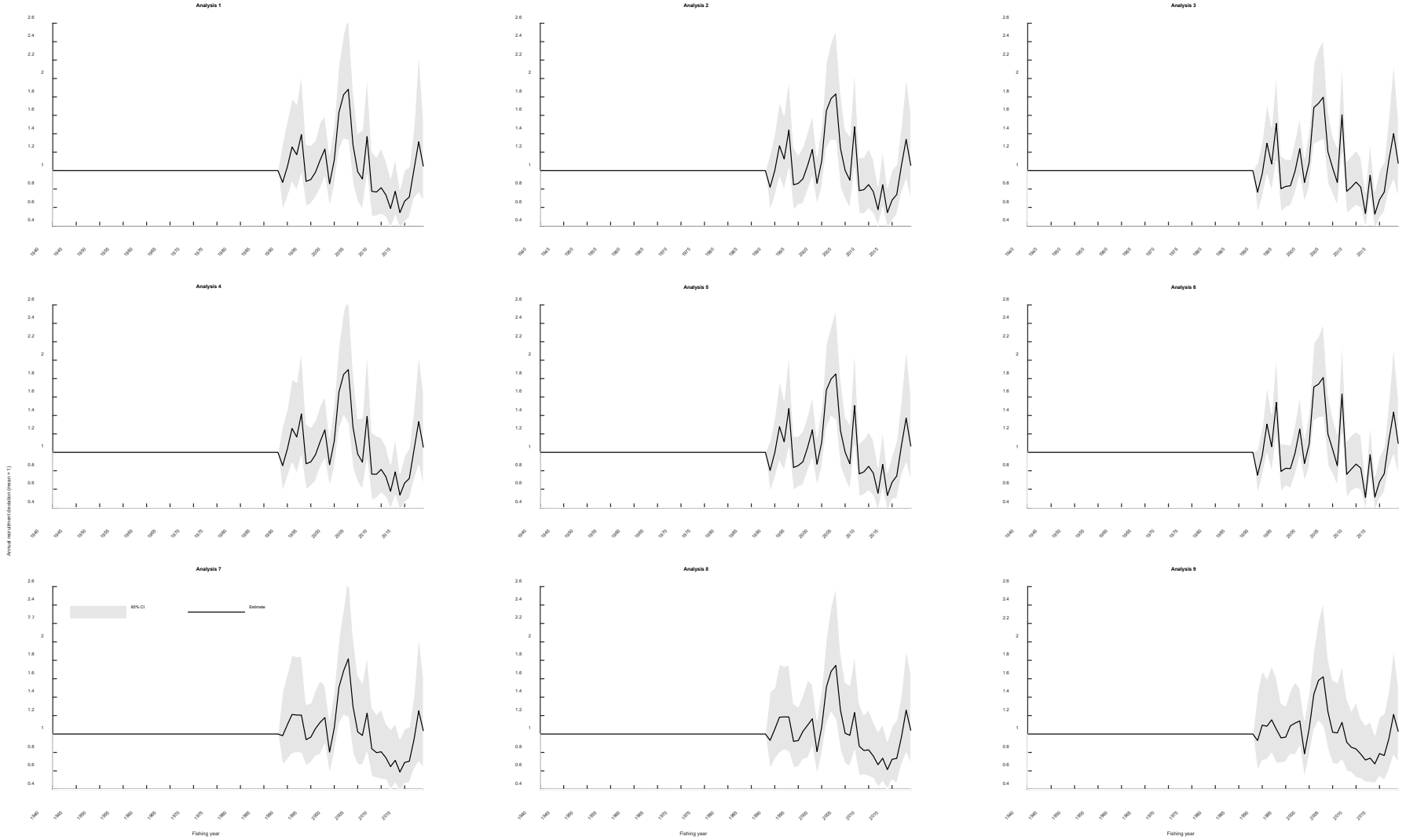




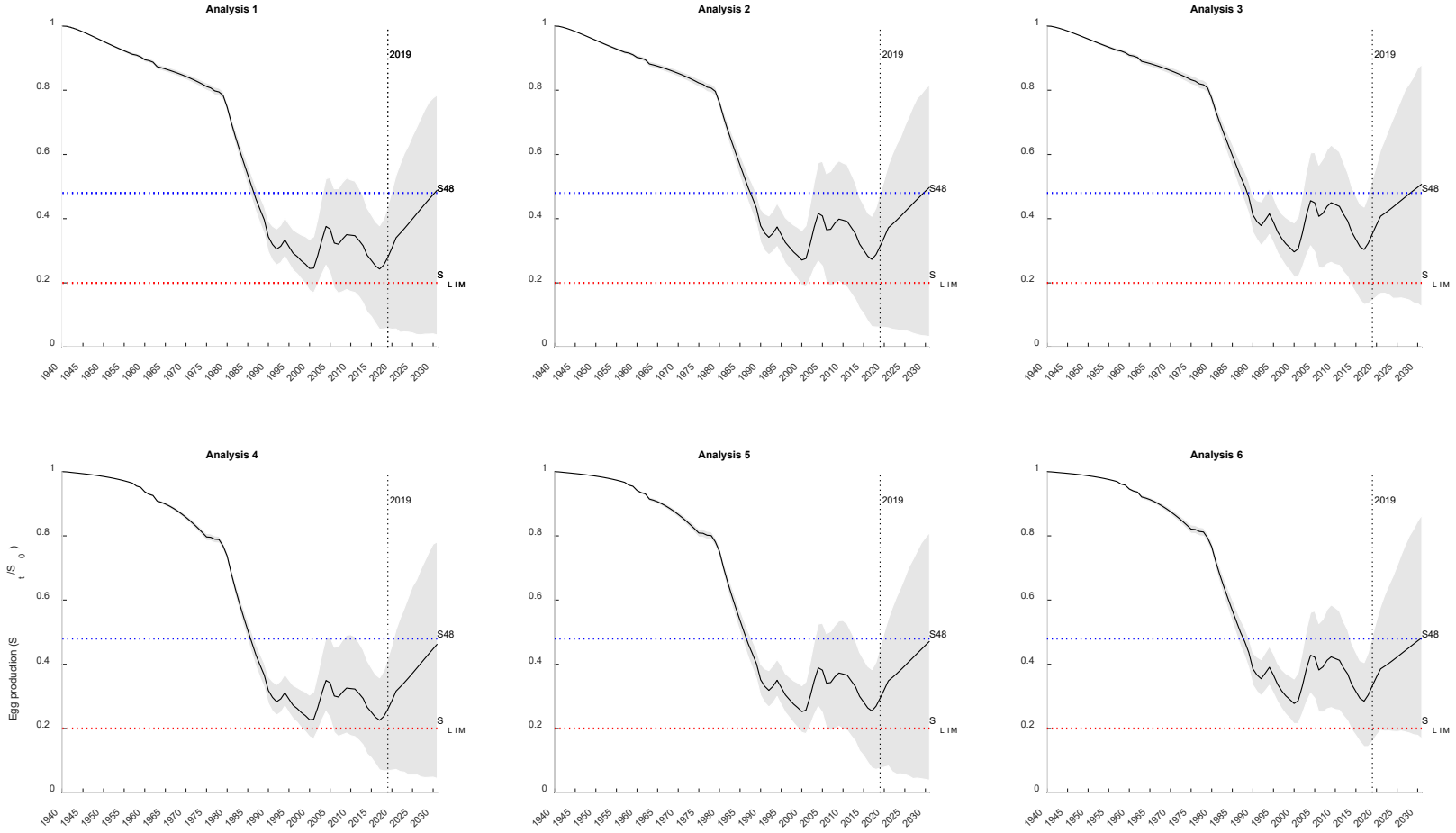
Fish age frequencies



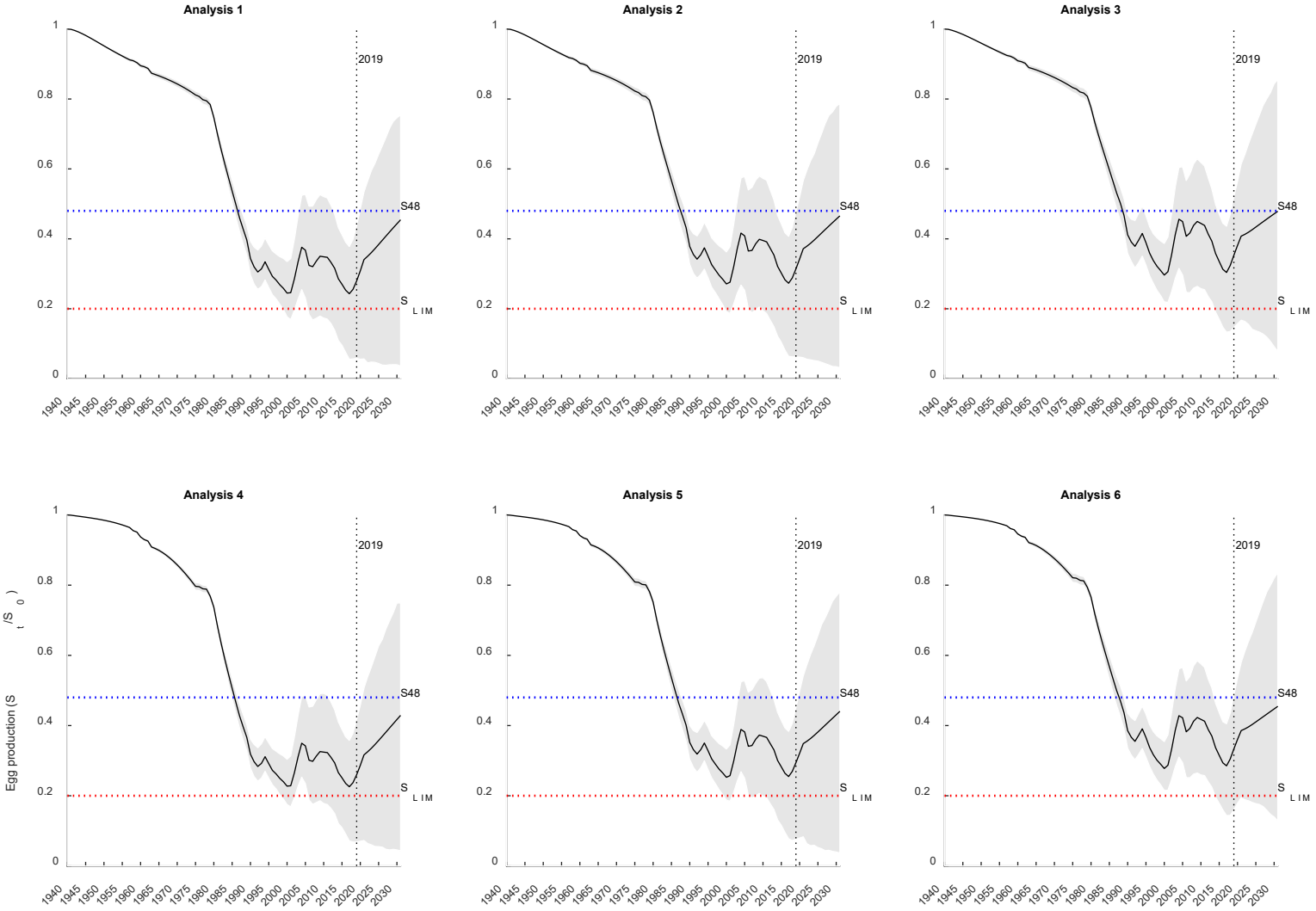
Recruitment deviations



Spawning biomass forecast for the 94 t RBC



Spawning biomass forecast for the 105 t RBC



Attachment C. FFRAG 5 (31 Oct – 1 Nov 2019) review of draft Spanish mackerel harvest strategy components

Guiding principles and key fishery attributes – factors that helped shape the development of the Harvest Strategy		**RAG Comments**
Recommended	Consistent with the Commonwealth Fisheries Harvest Strategy Policy and Guidelines (HSP, 2018). This is consistent with objectives of the *Torres Strait Fisheries Act 1984* (the Act).	AGREED
	Have regard for traditional knowledge and the ability of communities to manage fishery resources locally, through acknowledging and incorporating customary and traditional laws, recognising; Malo Ra Gelar, Gudumalulgal Sabe, Maluailgal Sabe, Kulkalgal Sabe.	AGREED AFMA queried whether the Kaurareg nation was included in this statement. Traditional Owners present advised that Maluailgal Sabe law reference includes the inner western communities.
	Recognise commercial fishing by traditional inhabitants is important for local employment, economic development and for the passing down of traditional knowledge and cultural lore. Enough fish need to be left in the water for future fishers to make money and to protect the traditional way of life, livelihoods and cultural values. Spanish mackerel are a shared resource important for subsistence, commercial, traditional, charter and recreational sectors. Shared stock under the Torres Strait Treaty with PNG, stock to be shared if PNG nominate to do so.	AGREED - with minor change. RAG suggested that the word 'future' is added to reference sustainability.
	TACs should vary according to stock status (up and down): • If biomass decreases be cautious. Stock is not to go below the limit;	RAG noted that 'banking' fish was challenging to capture in the decision rules of a harvest strategy with stocks generally building towards a target reference point in a prescribed way based on assessment outcomes.

	• If biomass is increasing be conservative; 'bank' fish.	RAG noted that the prescription for this in-principle objective from traditional owners was in regard to when the stock was increasing, to not necessarily increase the TAC but possibly only after a trend/consecutive years of increasing stock. . RAG also advised that this approach and wording should also consider the level of certainty and precaution underlying future decision making. RAG suggested that this wording required greater clarity in the final harvest strategy but the spirit of the objective was understood and would likely only apply to the fishery when the stock has eventually build above the Target Reference Point and increases in TACs (via a potential fish-down of the stock to B Target by increasing harvests) are suggested by the assessment estimate of biomass. It was considered that clear decision rules to implement this stakeholder desire would need to be developed with stakeholders, potentially as the Strategy is reviewed over time.
	Having regard for the current stock size (B_{31}) and that B_{60} is not quickly achieved (possibly greater than 12 years) without significant reductions in catch which may in turn cause significant economic and social impacts on the Fishery, a shorter-term target reference point is first required.	AGREED. FFRAG noted that the Strategy has a focus on the immediate future of the fishery given present stock condition. It was noted that a 94 t RBC is not conservative and balances sustainability with socio-economic impacts; and that a 94 t RBC based on present biomass (31 per cent of unfished) might take 17 years to build to the B48 target reference point.
	Torres Strait Spanish mackerel stock are assumed separate from other regional stocks. They ~~do not mix~~ have limited mixing with the	AGREED minor wording change to reflect limited mixing with adjacent stocks.

	Queensland East Coast and the Gulf of Carpentaria stocks (see Buckworth et al. 2007 and Newman et al. 2009).	
	There is potential for variations in availability and abundance of Spanish mackerel in the Fishery, due to their movement, schooling and aggregation patterns for feeding and spawning, recruitment and mortality.	AGREED with minor wording additions
	Spanish mackerel are a shared resource important for subsistence, commercial, traditional, charter and recreational sectors.	AGREED - Minor wording additions to acknowledge shared stock with PNG under the Torres Strait Treaty. and agreed to move this point to higher up in the table to give it higher precedence.
Outstanding	None identified at this time. Subject to any further FFRAG and Working Group advice	(none).

Operational objectives What we want the harvest strategy to achieve.		**RAG comments**
Recommended	Maintain the stock at (on average), or return to, a target biomass point (B_{TARG}) equal to a stock size that aims to protect the traditional way and life and livelihood of traditional inhabitants and is biologically and economically acceptable.	AGREED
	Maintain stocks above the limit biomass level (B_{LIM}), or an appropriate proxy, at least 90 per cent of the time.	AGREED
	Reduce fishing levels if a stock is below B_{TARG} but above B_{LIM}.	AGREED
	Implement rebuilding strategies, if the stock moves below B_{LIM}.	AGREED - considered further below in the context of decision rules if B LIM triggered.
Outstanding	None identified at this time. Subject to any further FFRAG and Working Group advice	FFRAG agreed with the operational objectives captured by the draft Harvest Strategy.

Indicators Indicators provide information on the state of the stock and how the stock is doing against agreed reference points (reference points are addressed below and are a specified level of these indicators)		**RAG Comments**
Recommended	Biomass – Catch and effort data from daily fishing logbooks is used as a proxy for abundance in the stock assessment model which is used to calculate biomass of the stock as a proportion of unfished biomass (B_0).	(not considered by FFRAG 5)
Outstanding (1)	Fishing mortality (B) based indicators. The stock assessment model can estimate a level of F to move the stock towards the target. There was some consideration from the FFRAG of using an F-based indicator in the harvest strategy. Advice is sought from the FFRAG on whether there is value in further exploring this as an option.	(not considered by FFRAG 5)

Reference points A reference point is a specified level of an indicator used as a basis for managing a stock or fishery. Reference points will generally be based on indicators of either the total or spawning stock size (biomass) or the amount of harvest (fishing mortality). Reference points show where we want (target) and don't want (limit) the stock levels in the fishery to be.			**RAG Comments**
Recommended	Unfished biomass (B_0) = B_{1940} = 100%.	The year 1940 is considered the start of the commercial operations in the Fishery. The unfished biomass B0 therefore is the model-estimate of spawning stock biomass in 1940.	AGREED
	Target (B_{TARG}) reference point = B_{48}	B_{48}[1] is the default target (a proxy for B_{MEY} - biomass at maximum economic yield) in the Commonwealth HS Policy ~~and the project team advise that B48 is less than BMEY.~~	AGREED with B48 as target reference point and removal of line as B48 is known to be less than B MEY.
	Limit reference point (B_{LIM}) = B_{20}	B_{LIM} is the spawning biomass level below which the ecological risk to the stock is unacceptable and the stock is defined as 'overfished'. This is an agreed level which we do not want the stock to fall below. B_{20} is the default limit proxy in the Commonwealth HS Policy[2].	AGREED

[1] Comm HSP: The target reference point for key commercial fish stocks is the stock biomass required to produce maximum economic yield from the fishery (BMEY). For multispecies fisheries, the biomass target level for individual stocks may vary in order to achieve overall maximum economic yield from the fishery. In cases where stock-specific BMEY is unknown or not estimated, a proxy of 0.48 times the unfished biomass, or 1.2 times the biomass at maximum sustainable yield (BMSY), should be used. Where BMSY is unknown or poorly estimated, a proxy of 0.4 times unfished biomass should be used. Alternative target proxies may be applied provided they can be demonstrated to be compliant with the policy objective.

[2] Comm HSP: All stocks must be maintained above their biomass limit reference point (BLIM) at least 90 per cent of the time. Where information to support selection of a stock-specific limit reference point is not available, a proxy of 0.2 times unfished biomass should be used.

Outstanding (2)	B_{48} is less than B_{MEY}	~~The HS project team advise the current target of B_{48} is less than B_{MEY}.~~ FFRAG discussion and advice on this calculation is required to ensure a common and clear understanding.	FFRAG supported the B48 target reference point and outlined the following rationale for adopting this value. FFRAG noted that the most recent assessment update was estimating B MSY for the stock as being close to the Commonwealth Harvest Strategy Policy of B40 which is a commonly accepted indicator in fisheries as a target reference point for maintaining a level of biomass (not catches) focused on maximising sustainable harvest (yield) from the fishery. Noting identified uncertainty in our data and stock assessment model there is a need to be precautionary and apply a 'buffer'. Traditional owners have also advised an objective for the fishery is to have a target biomass level that supports good catch rates. For these two reasons, a multiplier is applied to set the target biomass at a higher level than B MSY. It was noted in other fisheries this may be considered as a B MEY target reference point or proxy (to maximise economics from harvest taken) but in this fishery, B MEY is unable to be calculated without reliable price data from catches. The RAG agreed that a 20 per cent buffer would be applied to B MSY in order to set B TARG (1.2 times B MSY of B40 = B48), though consideration (based on QDAF experience) was given to alternative multipliers given work undertaken by Pascoe et al. to estimate the best proxy economic target reference point in data-poor fisheries. FFRAG considered comparisons of costs to revenue ratios and appropriate multipliers from the

			research but noted that the examples were not comparable with the Torres Strait Finfish Fishery. It was noted that a desktop study could be funded to calculate this optimum B MSY: B MEY point noting that setting a biomass level that is high will trade off available harvest and the number of boats active in the fishery.
Outstanding (3)	Long term B TARG = B_{60}	Advice from the HS project team and RAG scientific members is sought on the suitability of B60 as a long-term B TARG, in comparison to other target biomass levels above B_{MSY} having regard for the biology of the species and performance of the Strategy in meeting its objectives. Stakeholders have recommended that the Strategy ensures enough fish are left in the water to support commercial fishing but also protect the traditional way of life and livelihoods of traditional inhabitants. Advice to date is that a higher target biomass level (referring to 60%), would increase catch rates and improve profits in the fishery over other lower reference points, such as B_{48}. Having regard for any advice from the HS project team advice is sought however, RAG advice on the suitability of B_{60} against other possible higher target biomass levels. There are likely to be trade-offs between medium-term returns from the fishery (significantly reduced TAC) and longer-term returns (more fish in the water meaning less cost to catch and therefore higher returns. Also there would be more fish in the water for other users).	FFRAG agreed that B60 should not be included as part of the final harvest strategy and was aspirational only at this stage in the fisheries development. FFRAG are supportive of a future research project to determine what the optimum biomass for the fishery might be, noting, while aspirational, a value as high as B60 would likely trade off available catches and might limit the number of boats that could feasibly fish. FFRAG agreed that future research could focus on developing an optimum biomass in line with future reviews of the Strategy.

		Quantitative analysis and/or evidence from comparable fisheries is sought to enable more evidence-based advice and decision making on the longer-term target.	

Decision Rules (*also called Harvest Control Rules*) These rules are designed to maintain and/or return the stock to the target reference point.			**RAG comments**
Recommended	If stock falls below the limit reference point (B_{LIM}).	The Fishery is closed (all commercial fishing for Spanish mackerel is to cease) and subject to a rebuilding strategy. The nature of the rebuilding strategy will be determined on the basis of the stock assessment (to be applied immediately) and the rate of recovery (i.e. number of years to achieve a biomass greater than B_{LIM}).	AGREED FFRAG noted that before the biomass dropped below B20 the RBCs would be very small to move the stock away from this point.
	Re-opening the Fishery[3]	Following closure of the Fishery, the Fishery can only be re-opened when a stock assessment determines the Fishery to be above the biomass limit reference point.	AGREED
Outstanding (4)	If the stock is above the limit reference point but below the target reference point.	The RBC is to be set at level that allows for the stock to build towards the target. Importantly the decision rule can be designed to build the stock at different rates (e.g. the number of years for the stock to build to the target reference point or the rate of building near the target or limit). An outstanding action has been for the FFRAG to consider scenarios with multiple timeframes to build the stock to reach B_{48}. Specifically to examine a 12 year	FFRAG noted that the best way to build the stock to target was to reduce harvests but this approach needs to be balanced against socio-economic impacts when setting TACs based on the current state of the stock and the risk of losing long-term CPUE data sets from the fishery. Noted that as the fishery is open-access for TIB and with extra infrastructure coming online to support participation and potential low seasons in

[3] Comm HSP: Once a stock has been rebuilt to above the limit reference point with a reasonable level of certainty, it may be appropriate to recommence targeted fishing in line with its harvest strategy, which will continue to rebuild the stock towards its target reference point.

		recovery time (equivalent to 3 times the average age of maturity) and explore 10 and 8 year recovery periods as alternatives. Having regard for any advice from the HS project team, advice is sought from the RAG on appropriate building rates to incorporate into the HS decision rules and/or a work plan for examining options noting scenarios will be examined and presented by the Spanish mackerel stock assessment team (*AFMA funded project 2019/0831*) as part of the next stock assessment update to be presented at the FFRAG planned for 27-28 November 2019.	TRL/BDM there may be increasing fishing pressure which may impact building rates in the fishery. FFRAG noted that if the harvest control rules were applied at present with the stock currently at B31 to build the stock to B48 a harvest rate of approximately 9% would be recommended. The RBC for B31 would be 63t if strictly applied and the RBC once the stock reaches B48 would be 129t (an 18% harvest rate). However, during building to the BTARG the RBC should increase each year as the stock moves closer to BTARG. FFRAG noted the proposal to examine building rates of 8, 10, 12 year timeframes and what these would mean for the fishery (catches and catch rates). It was noted that the logic supporting a particular value as a building timeframe came from the harvest strategy policy and only applied (in the older HS Policy version) to when a stock was below B LIM. FFRAG noted that the funded mackerel assessment project would have building timeframes (forward projections) as a standard output and that FFRAG 6 could examine these rates in the context of the assessment update.
Outstanding (5)	If stock is overfished (below B_{LIM})	Consistent with the Commonwealth HS policy the FFRAG and FFWG have recommended that commercial fishing for Spanish mackerel should cease if the stock falls below B_{LIM}. Further FFRAG discussion and advice is now sought to consider additional decision rules and	FFRAG confirmed that under the HS targeted fishing will cease for mackerel if the estimate of biomass shows the level of the stock is below B LIM and a FFRAG will have a key role in developing a rebuilding strategy should this occur

		actions required to guide rebuilding and to trigger any necessary reviews of the HS, noting the HS should be designed to avoid the stock breaching the limit. FFRAG are to note and discuss the HS policy requirements to be included in the Spanish Mackerel HS if the stock falls below $B_{LIM:}$ a) that targeted commercial fishing for Spanish mackerel will cease b) a rebuilding strategy will be developed to build the stock above B_{LIM} with a reasonable level of certainty c) if B_{LIM} is breached while the fishery is operating in line with HS, the HS must be reviewed. FFRAG to provide advice on: a) A process to understand how the stock has rebuilt above B_{LIM} with certainty in the absence of commercial fishing e.g. model projections. b) whether a decision rule with a lower level of fishing pressure would be appropriate if the stock is above but close to B_{LIM}.	(in line with Commonwealth Harvest Strategy Policy). FFRAG noted that four years would likely be the minimum possible recovery time (based on biology of the animal) to rebuild the stock back above B LIM and the existing model could be used to forecast how the stock would respond with zero catches if closed to commercial fishing.
Outstanding (6)	Utilisation related Decision Rules (desired fishing intensity) noting a fishery may have indicators and	Decision rules have yet not been established for harvest related performance metrics such as future 'target' catches or 'target' catch rates desired by industry per primary vessel or per TIB dory day. Given that limited catch and effort data has only recently become available from TIB sector, the HS focus has been on agreeing biomass based reference points and decision rules. Additionally, at the last FFRAG/FFWG meeting with regard to considering various longer-term target biomass reference points, industry expressed a strong preference	(not discussed)

	reference points including spawning stock size (biomass) or the amount of harvest (F or fishing mortality i.e. utilisation of the resource).	for management to focus on building the biomass back to BTARG in the coming years, before exploring any other scenarios. FFRAG are asked to confirm this approach and consider how future decision rules may incorporate increased growth of the TIB sector.	
Outstanding (7)	Precautionary increases to total allowable catches.	Stakeholders recommended that if the stock assessment outcomes suggested increases in the TACs, these increases should only occur slowly through some kind of change limiting rule, noting that an increased TAC would likely not affect the TIB sector with the low present level of utilisation. Stakeholder advised a preference for 'banking' these fish to contribute to the biomass and future catch rates rather than harvesting this extra stock. At the last FFRAG/WG meeting a number of challenges were identified with applying a change limiting rule for possible TAC increases. Instead the RAG/WG placed priority on examining different building rate scenarios which may achieve this desired precautionary outcome. FFRAG are asked to confirm this approach and provide advice on how to progress change-limiting rules if necessary.	Not specifically discussed by the RAG. However, at other items it was considered that focus would need to be on building the stock to B40 and development of harvest control rules in future to address this stakeholder desire when biomass is proven to be above B TARG.

Monitoring and assessment cycle		RAG comments
Recommended	Based on the most recent estimate of the stock status (0.31 times unfished biomass) and declining biomass (and CPUE) trend, a stock assessment should be performed annually until the biomass is estimated to be above B_{40}.	AGREED.
Outstanding (8	Subject to any further advice from the HS project team, FFRAG advice is sought on: a) An appropriate assessment cycle when the stock is above B40 and/or methods for evaluating future assessment cycles. b) Likely data needs to support monitoring stock performance under the Strategy over time, noting that some biological data is to be sampled in 2019 and 2020 as a snapshot to augment our understanding and assessment of the stock but no monitoring program advice has been developed or presented to date. c) Standard procedures for applying the decision rules to the stock assessment outcomes, and, any other minimum stock assessment scenarios, and/or, sensitivities that should be examined to support 2019-20 season TAC setting (e.g. FFRAG 4 used a methodology of selecting the median of a range of plausible stock assessment scenarios to recognise a range of uncertainty).	FFRAG noted that although other options balancing risk and cost might be considered, given the decline in catch rates, transitional nature of the fishery, lack of fishery independent monitoring and suggestions of environmental influences on the fishery, there is a strong rationale to conduct yearly stock assessments for Spanish mackerel. FFRAG considered that examining CPUE in intervening years between full assessments (as an alternative) would be possible as an indicator of stock health but running a full assessment using the model would be more cost effective - given that running CPUE standardisations alone does require time and resources and the accepted full model can be run. FFRAG recommended that until MSE testing had been conducted, and the stock could be demonstrated to be at or above B40 (as a B MSY proxy), yearly stock assessments are required. QDAF advised that conducting assessments over the next two years will be semi-automated and hence, it will not be unreasonable to run annually, provided data supply is consistent (i.e. just inputting new seasons catch and effort data).

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
TOTAL ALLOWABLE CATCH ADVICE Spanish mackerel 2021-22 fishing season	Agenda Item No. 3.1 For discussion and advice

RECOMMENDATIONS

1. That the Working Group:

   a. **CONSIDER** Finfish Resource Assessment (FFRAG) advice on the outcomes of the latest stock assessment and recommendation for a Recommend Biological Catch (RBC) of 94 tonne for Spanish mackerel for the 2021-22 season;

   b. **CONSIDER** advice from the FFRAG on best estimates of catch likely to be taken outside of the commercial fishery to support calculating the TAC for the 2021-22 season (that is reducing the RBC by the total estimate to derive the TAC):

      - 15 tonnes for subsistence (traditional fishing/kai kai);
      - 5 tonnes for recreational to 5 tonnes; and
      - 0 tonnes for charter fishing and PNG catch sharing.

   c. **NOTE** FFRAG/WG and industry advice to date on components and the guiding principles and key fishery attributes to help shape the development of a harvest strategy; and

   d. **DISCUSS** and **PROVIDE ADVICE** on an appropriate notional Total Allowable Catch for the Torres Strait Finfish Fishery Spanish mackerel stock for the 2020-21 fishing season.

KEY ISSUES

2. The FFWG is being asked to provide advice on the notional TAC to be set for the Torres Strait Finfish Fishery to manage commercial catches for the 2021-22 fishing season beginning 1 July 2021.

3. Consistent with the Australian Government's harvest strategy policy, TACs should take into account all sources of fishing mortality on the stock. That is catches taken outside the commercial fishery. These other sources of mortality might be discards, subsistence (kai-kai) take, recreational or charter sector catches for which data may be available or estimates may be agreed. FFWG should review previous estimates of other sources of mortality (see Background section below), advice from the FFRAG and any additional information from members.

4. At its meeting on 4-5 November 2020 (meeting 8) the FFRAG considered the latest stock assessment for Spanish mackerel and agreed on an RBC for the 2021-22 fishing season and best estimates of catches outside the fishery. The RAG advice is detailed below and the draft meeting record (cleared by the Chair and with members for comment until 20 November 2020) is at **Attachment A**. At the meeting the Scientific member will provide a summary of the stock assessment outcomes (**Attachment B**).

5. A harvest strategy is yet to be finalised for the Finfish Fishery. However key components of a future harvest strategy including guiding principles and key fishery attributes to help shape the development of a harvest strategy have been recommended FFRAG/WG and industry over a series of workshops. A summary of the advice and outstanding components of the draft harvest is provided at **Attachment C** (considered at FFRAG meeting 5, 31 Oct – 1 Nov 2019.

FFRAG RBC advice for the 2021-20 fishing season (from the draft meeting record)

The stock assessment results

6. Based on the six agreed 1940 model runs, the RAG noted that the results of the updated 2020 stock assessment show:

   a) The estimated 2019-20 median spawning biomass of Torres Strait Spanish mackerel was 30% (B_{30}), ranging between 26% (B_{26}) and 35% (B_{35}), of unfished biomass in 1940 (B_0). This represents a seven percent increase from the 2019 estimated spawning biomass for 2018-19 of 23 (B_{23}) percent (ranging between 14-37%) of unfished biomass in 1940 (B_0);

   b) None of the median biomass estimates from the six model scenarios were below the agreed limit reference point (B_{LIM} is defined as 20% of the 1940 biomass level (0.2 x B_0)) although the lower confidence intervals of some model runs were below B_{LIM};

   c) Unlike the declining trend since 2009-10, the standardised catch rate (number of fish per operation day) of legal-sized Spanish mackerel, using logbook data from Sunset fishing operations, increased in 2019-20 (a statistically significant increase);

   d) Age-frequency data now available from 2019-20, shows estimates of recruitment have returned to around the average;

   e) Recent fishing pressure is not exceeding F_{MSY} (the harvest rate for Maximum Sustainable Yield (MSY) from the stock). This means overfishing is not occurring.

Selecting an appropriate RBC calculation method

7. To guide advice on an RBC for the 2021-22 fishing season, noting there is no agreed harvest strategy in place for the Torres Strait Finfish Fishery, the FFRAG considered a range of RBC calculations. These are described in **Table 1** and outlined below.

8. In forming their RBC advice, the FFRAG:

   a) considered five different constant (non hockey-stick) harvest rates applied to the six results from the 1940-model. Each level of harvest rate related to building the stock to different target reference points (F_{MSY} through to F_{60});

   b) agreed to forecast the stock biomass to the 2021-22 fishing season based on an assumed level of harvest in 2020-21 (55 t = 39 t sunset, 4 t TIB harvest (based on the mean of the past three TIB fishing seasons), 10 t subsistence, 2 t recreational and 0 t for charter catches) and assuming average recruitment occurring. Therefore the RAG discounted

approaches based on the 2019-20 estimate of biomass (**Table 1**, Approaches 7, 8, 9, 10 and 11);

c) agreed to assume average, rather than depressed recruitment in future fish population risk-projections. Unlike the findings from last stock assessment, the most recent recruitment deviations for each of the model runs were all positive. The RAG therefore agreed there was insufficient basis to assume below average recruitment in the future projections. Therefore the RAG discounted all approaches that assumed reduced recruitment (**Table 1**, Column 5);

d) reviewed fish population projections to evaluate risk to the stock. Consistent with the 2019 approach used by the RAG, it was agreed to consider how many years in a model run and simulation the stock would drop below the limit reference point (B_{20} or 20% of the unfished spawning biomass level in 1940) during a 12 year-time period (three times the age of full sexual maturity)[1]. The RAG agreed, in line with the *Commonwealth Harvest Strategy Policy,* that if more than 10% of model runs (based on over 1000 simulations), dropped the stock below B_{LIM} that this would represent unacceptable risk to the stock. Therefore the RAG discounted approaches which represented unacceptable risk to the stock (**Table 1**, Approach 1 Constant F_{MSY} and Approach 2, Constant F_{40});

e) considered industry member advice at the meeting and the principles recommended by industry for developing a harvest strategy for the fishery to be conservative by '*hastening slowly'* and by '*banking'* fish if the biomass is increasing. A summary of the guiding principles is in **Attachment B** (as tabled and commented on at FFRAG 5). Therefore the RAG discounted Approach 3 (Constant F_{48}) with an RBC calculation of 112 t as this represented too great of an increase in RBC over the 2019-20, 71 t RBC level. Likewise, the RAG discounted Approach 5 (constant F_{60}) with an RBC calculation of 75 t as it offered little increase from the current season 71 t RBC noting that the assessment outcomes did suggest an increase in RBC was warranted based on improvements in CPUE and modelled recruitment;

f) noting that 75 t RBC (constant F_{60}) was considered too low, and 112 t RBC (Constant F_{48}) was considered too high the RAG requested the project team to present a compromise approach of an RBC based on the mean point between F48 and F60. This approach (**Table 1,** Approach 6) would represent an RBC of 94 t;

g) reviewed fish population projections for 105 t and 94 t harvests to evaluate the likelihood of the stock building to B_{48} over the 12 year projected time period (three times the average age of sexual maturity);

h) The RAG considered B_{48} or B_{50} to be a sensible interim target reference point, noting that B_{48} is the default proxy for B_{MEY} when no economic data are available (under the *Commonwealth Harvest Strategy Policy)*. B_{MEY} measures the biomass of fish to yield the sustainable maximum-economic-yield (MEY) from the stock. B_{MEY} also relates to the long-term aspirational target reference point of B_{60} recommended by industry under the harvest strategy work completed to date.

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[1] The RAG reviewed and agreed to the rationale of the 12-year timeframe being three times the full age of maturity i.e., based on age-length information by four years of age most fish are fully mature and contributing to the stock.

i) The RAG noted that only one of the six 1940-model runs would be reaching the reference point of B_{48} (with a constant harvest of 105 tonnes) after 12 years. Therefore, the RAG discounted the approach labelled 4 (Constant F_{50}) as although the harvest poses acceptable risk to the stock, this level of harvest will likely not build the stock to the interim B_{48} target reference point within 12 years. However, the constant harvest of 94 t did build the stock to B_{48} by 12 years.

RBC advice

9. In line with the agreed RBC calculation method described above of removing less appropriate RBC options (summarised in **Table 1** below), the RAG recommended a 94 tonne RBC for Spanish mackerel for the 2021-22 season. The RAG agreed that this RBC:

a) is based on the application of a constant harvest rate equivalent to the mean point between F48 and F60 to the estimated biomass in the 2020-21 fishing season;

b) would build the stock on average to the interim target reference point (for F_{48}) within a reasonable timeframe of 12 years (three times the age of sexual maturity) and assuming average recruitment to be occurring;

c) poses an acceptable low risk of the stock falling below the limit reference point (less than 10% of model runs and simulations dropping the stock below 20% of unfished spawning stock biomass in 1940); and

d) reflects the preference of industry members to have a harvest strategy that is balance and careful by '*hastening slowly'* by '*banking'* fish if the biomass is increasing.

Table 1. Summary of options presented to the FFRAG as outputs from the 1940 model runs in the 2020 Spanish mackerel stock assessment update. Yellow highlighted approaches were those considered by the RAG as potentially appropriate RBCs for recommendation.

No.	Name of RBC approach	Biomass year for the RBC calculation	% runs below S_{20} over 12 years and 6 analyses		Median
	1940-model		Assuming average recruitment	Assuming reduced recruitment	2021-22 RBC (tonnes)
1	Constant F_{MSY}	2021-22	12%	24%	146
2	Constant F_{40}	2021-22	12%	23%	145
3	**Constant F_{48}**	**2021-22**	**9%**	15%	**112**
4	**Constant F_{50}**	**2021-22**	**8%**	13%	**105**
5	**Constant F_{60}**	**2021-22**	**7%**	9%	**75**
6	**Mean of F_{48} and F_{60}**	**2021-22**	**8%**	N/A	**94**
7	Constant F_{MSY}	2019-20	8%	12%	99
8	Constant F_{40}	2019-20	8%	12%	97

9	Constant F_{48}	2019-20	7%	9%	77
10	Constant F_{50}	2019-20	7%	9%	73
11	Constant F_{60}	2019-20	6%	8%	53

Estimating non-commercial catches

10. The Finfish RAG reviewed the available information to support estimates of non-commercial catches available to the PZJA in setting a Total Allowable Catch from the RBC. The RAG noted advice from Dr O'Neill and the Chairperson that the QDAF recreational fishing for 2019-20 had concluded however, the survey did not sample the Torres Strait to form a meaningful estimate of recreational catches for the region.

11. The RAG noted that 10,000 kg of catch estimated for subsistence catch by Traditional inhabitants, at 7.3 kg average weight per fish (based on the most recent biological sampling), would represent 1400 fish from all communities. This roughly translates to an average take of a few hundred fish from each Torres Strait community per year. Applying the same average weight, the previously assumed two tonne catch[2] for recreational fishing represented around 280 fish.

12. Industry members and the TSRA member considered that both the subsistence and recreational estimates were a likely underestimate for the coming season.

    - The TSRA member advised that, based on consultation on the Waphill trainee project, fishers in eastern communities are reportedly catching good numbers of Spanish mackerel for subsistence. The TSRA member has been advised by fishers that Spanish mackerel is not being sold due to the current lack of infrastructure.

    - Industry members advised that along with having periods of good catches, many eskies of frozen Spanish mackerel are regularly shipped south to friends and family and are also used as barter/trade in communities. By way of example, industry members advised that within one community over the last three weeks, around eight boats have been fishing twice daily and landing 5-7 Spanish mackerel each fishing session per boat.

    - Industry members were of the view that the recreational boat numbers have increased over time, with a lot more contractors resident in Torres Strait taking boats out to communities to fish in their spare time.

    - Industry members advised that along with the rollout of fisheries infrastructure in the near future there is a likelihood that with more fishers commercially targeting mackerel, more catch will be retained also for subsistence.

13. The RAG discussed the potential for recent observations to cause bias in the perception of seasonal trends, noting earlier advice from industry that there had been limited fishing most of the year due to poor weather. An industry member also commented that Spanish mackerel

[2] The Spanish mackerel stock assessment team advised that the model used the 2013 point estimate of 2 t for recreational sector harvest with error bars ranging from 2-4 t (the model alternates between 2, 3 or 4 tonnes).

was not a preferred subsistence species with communities preferring species like Siganids (rabbitfishes) instead. However, on balance, the RAG accepted member advice that the previous estimates were likely an underestimate and, in line with the objectives of the Treaty, traditional fishing needed to be protected and have priority over harvesting for commercial purposes.

14. The RAG recommended increasing non-commercial catch estimates for Spanish mackerel for calculating TACs for the 2021-22 season (that is reducing the RBC by the total estimate to derive the TAC). Increases were recommended from 10 tonnes for subsistence to 15 tonnes and from 2 tonnes for recreational to 5 tonnes. Consistent with previous years, the RAG agreed that charter fishing catches were likely to be minimal and accepted AFMA advice that Australia and PNG were unlikely to enter into catch sharing arrangement under the Treaty in 2021-22 fishing season. Both were subsequently left unchanged for the 2021-22 fishing season. **Table 2** provides a summary of the RAG advice.

Table 2. FFRAG 8 (4-5 November 2020) 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	15	Based on data from *Busilacchi 2013* this includes total of catch estimates for Mer, Masig and Erub Islands. The FWG agreed in July 2016 that the catch figures from the *Busilacchi 2008* 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. At FFRAG meeting 4, 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. At FFRAG meeting 8, the RAG accepted advice from industry members and the TSRA member that estimate should be increased to 15 tonnes to account for anecdotal information that 10 tonnes would be an underestimate.
Recreational	5	Previously the RAG advised that based on QDAF survey (2013) which included TS, 2 tonnes was appropriate. At FFRAG meeting 8, the RAG agreed to recommend the estimate be increased to 2 tonnes having regard for accepted industry member advice that the recreational boat numbers have increased over time, with a lot more contractors resident in Torres Strait taking boats out to communities to fish in their spare time. Following FFRAG meeting 8, QDAF advised AFMA that under the 2019-20 Queensland stat-wide recreational fishing survey, there were only 7 catch records from 2 people on 4 fishing days in Region B (Torres Strait). There was only one record of a coral trout and none for Spanish mackerel.
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. The 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.

BACKGROUND

15. For the 2020-21 fishing season the FFWG agreed to recommend a Spanish mackerel TAC of 59 tonnes for the 2020-21 season (based on an RBC of 71 tonnes minus a total estimated catch outside the Fishery of 12 tonnes (10 t for traditional/subsistence fishing and 2 t for recreational fishing). A summary of TAC changes since 2008 is provided in **Table 3** below.

16. In making its TAC recommendation for the 2020-21 fishing season the FFWG:

    a) noted biomass has been estimated to be declining since 2009-10; i.e. the standardised catch rate of legal-sized Spanish mackerel (the abundance index), using logbook data from sunset fishing operations, had declined since 2009-10. Standardised catch rates have reached levels comparable to periods where total fishery harvests were significantly higher and did not substantially differ in 2018-19 to the last assessment using data up to 2017-18;

    b) noted the results of the stock assessment update suggesting the estimated median 2018-19 biomass was 23 per cent (ranging between 14% to 37% (B14 and B37) of unfished biomass (B0) estimated in 1940-1941 and that this value is close to the default *Commonwealth Fisheries Harvest Strategy Policy: Framework for applying an evidence-based approach to setting harvest levels in Commonwealth Fisheries* (June 2018) (harvest strategy policy) limit reference point of 20 per cent of unfished biomass. Although still in development, the FFRAG and FFWG have recommended B20 as the limit reference point for the Spanish mackerel;

    c) noted FFRAG advice that overfishing is unlikely to be occurring meaning the biomass decline is likely associated with factors, other than fishing pressure, such as broader environmental factors driving below average recruitment;

    d) noted the FFRAG advice to consider applying a constant harvest rate of either F 40 or F 48 (i.e harvest rates that build the stock to either B 40 or B 48) based on the current exploitable biomass rather that applying a Maximum Sustainable Yield (FMSY) harvest rates based on the need for precaution as the estimated level of biomass approaches the limit reference point;

    e) supported the FFRAG approach to assume below average recruitment scenarios in assessing stock projections for a range of harvest control rules and agreed that this an appropriate risk-management strategy given the proximity of the stock to the limit reference point;

    f) noted FFRAG advice that risk associated with either an RBC of 56 or 71 tonnes of the stock falling below the limit reference point (B20) is consistent with the harvest strategy policy. An RBC of 71 tonnes has slightly higher risk but is still within accepted risk thresholds under the harvest strategy policy;

g) noted advice from the FFRAG that the best estimates of catches taken outside the commercial Fishery remain unchanged since the last season and supported the use of the same estimates noting that the members also had no new information.

h) agreed that based on best available information, the recommended TAC seeks to:

- ensure the sustainability of the stock by allowing for the stock to build and avoiding unacceptable risk of the stock falling below the limit reference point;
- minimise potential economic and social impacts such as the potential loss of available fisheries expertise (that can be shared with TIB fishers) from sunset licence holders and/or impacts on supply chain/market dynamics (although the likelihood of the latter occurring were considered low); and
- minimise impacts on the CPUE data series that may occur as a result of a reduced TAC and hence less sunset licensed vessels fishing for Spanish Mackerel; also noting application of new data is expected in the next stock assessment.

Table 3. Summary advice on past Spanish mackerel Total Allowable Catches

Season	***RBC***	***TAC***	***Summary***
2020-21	71 t	59 t	RBC of 71 t, minus 12 t deduction (10 t subsistence, 2 t recreational take). Agreed by PZJA 20 January 2019.
2019-20	94 t	82 t	RBC of 94 t, minus 12 t deduction (10 t subsistence, 2 t recreational take). Agreed by PZJA 1 April 2019.
2018-19	125 t	115 t	RBC of 125 t, minus 10 t subsistence.
2017-18	125 t	132 t	RBC of 125 t recommended. PZJA Standing Committee agreed that a maximum estimated Spanish mackerel commercial catch of 132 tonnes (comprising proposed sunset leasing of 110 t and estimated TIB catches of 22 t) should be implemented. PZJA SC agreed that in the absence of new or updated information future catches should be managed in line with the RBC of 125t.
2008-09 to 2016-17	-	187.7 t	TAC was based on average annual commercial catches (TIB and Sunset sectors) between 2001-2005

ATTACHMENTS

Attachment A Draft FFRAG meeting record, meeting 8 4-5 November 2020 (cleared by the Chair and with members for comment until 20 November 2020).

Attachment B Spanish mackerel 2020 stock assessment presentation, Dr Michael O'Neill, Queensland Department of Agriculture and Fisheries.

Attachment C A summary of advice and outstanding components of the draft harvest as considered at FFRAG meeting 5, 31 Oct – 1 Nov 2019.

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
TOTAL ALLOWABLE CATCHE ADVICE Coral trout 2021-22 fishing season	Agenda Item No. 3.2 For discussion and advice

RECOMMENDATIONS

1. That the Working Group:

    a. **CONSIDER** advice from the Finfish Resource Assessment (FFRAG) recommending to maintain the coral trout RBC at 135 t for the 2021-22 season;

    b. **CONSIDER** advice from the FFRAG that it was not a priority at this time to estimate catches likely to be taken outside the fishery. However, the RAG recommended that AFMA undertake work next year to support RAG consideration of likely catches ahead of the following fishing season; and

    c. **DISCUSS** and **PROVIDE ADVICE** on an appropriate notional Total Allowable Catch for the Torres Strait Finfish Fishery Coral trout stock for the 2020-21 fishing season.

KEY ISSUES

2. The FFWG is being asked to provide advice on the notional TAC to be set for the Torres Strait Finfish Fishery to manage commercial catches for the 2020-21 fishing season beginning 1 July 2020.

3. At its meeting on 4-5 November 2020 (meeting 8) the FFRAG recommended maintaining the coral trout RBC at 135 t for the 2021-22 season noting (from the draft meeting record):

    a) catches remain low in the fishery (catches for the 2018-19 fishing season were 34.3 tonnes);

    b) the preliminary stock assessment undertaken in 2019 indicated that the stock biomass is likely to be high (the preliminary stock assessment estimated the biomass to be around 80 percent of estimate virgin biomass (B_0), with all of the model estimates of spawning biomass being above B_{65});

    c) although there is the potential for catches with further fisheries infrastructure development under TSRA funded programs, industry members did not forecast significant increases by 2021-22 fishing season; and

    d) it was not a priority at this time to estimate catches taken outside the fishery. However, the RAG recommended that AFMA under work next year to support RAG consideration of likely catches ahead of the following fishing season.

4. At its meeting the RAG re-iterated that the data priority for the fishery remained as, improving the accuracy of catch and effort data (for example reporting catches by species rather than a basket of the four trout species) and biological sampling.

5. Noting that the fishery has remained under-utilised for some time, the TSRA member sought RAG advice on what information is needed to support a more accurate/reliable stock assessment which could then be used to adjust the TAC. The RAG noted that the research priorities to address gaps in the preliminary stock assessment were identified by the RAG in 2019. The priorities being to undertake further habitat mapping work, analyse the mid-90s CSIRO dive survey data, improve catch and effort data from TIB fishers and collect fishery independent data, such as an underwater survey and/or biological sampling.

6. The RAG noted previous advice that there a significant advantage to undertaking a fishery independent dive survey of abundance prior to any significant fishing pressure being applied. Such a survey would act as a baseline to measure the potential productivity of the fishery.

BACKGROUND

7. Catch levels in the 2020-21 season remained low 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.

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

   - the results of the preliminary stock assessment presented for the previous fishing season (2018/19), which indicated that the stock biomass is likely to be high (the preliminary stock assessment estimated biomass to be around 80 percent (B80) of estimated virgin biomass with all of the model estimates of spawning biomass being above B65);

   - continued low levels of reported catches (less than 20 tonnes (17.3 t) was reportedly taken in 2018/19 fishing season by sunset licensees and TIB combined); and

   - there is no new information to justify (or guide) a changed management approach.

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

Preliminary 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 University of Queensland 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 2019 preliminary stock assessment, the status of the coral trout stock has been evaluated against the results of Management Strategy Evaluation (MSE) work using data up to 2004 (Williams et al. 2007, Williams, Little & Begg 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.

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
MANAGEMENT Review of Western Line Closure	Agenda Item 4.1 FOR ADVICE

RECOMMENDATIONS

That the Working Group:

1. **NOTE** previous Working Group advice and from the FFRAG 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. **NOTE** further advice from the FFRAG (meeting 8) 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; and

3. **DISCUSS** and **PROVIDE ADVICE** on AFMA's intention to undertake further targeted consultation with Gudamalalgal communities, in partnership with nominated industry members of the RAG (Tenny Elisala, Cr Rock Stephen and John Tabo) to:
   a) further understand the nature and extent of likely fishing effort in the short-term and longer-term industry aspirations and potential impacts on traditional fishing;
   b) outline the risks with targeting jewfish – a species vulnerable to depletion; and
   c) discuss with fishers the different management approaches for developing the fishery including:
      - opening with data collection and monitoring obligations and a review schedule for assessing whether the opening should continue
      - undertaking a resource survey before opening (noting funding would need to be sourced for this research); and
      - taking an adaptive management approach whereby fishing is allowed in part of the fishery as a means to examine likely impacts and the nature of fishing (noting this option is likely least viable given the small area under consideration)

KEY ISSUES

4. 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.
5. 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 **Attachment A**.
6. 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.
7. 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.

8. Noting the advice from Traditional Inhabitant members of the FFWG to open the closure north of Turnagain Island (meeting 29 November 2019) (or Numar Reef as recommended by participants as the recent Fisheries Summit convened by TSRA), AFMA sought further advice from FFRAG (meeting 8) on:

   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.

9. Having regard for the RAG advice, the purpose of AFMA undertaking further targeted consultation with Gudamalalgal communities, in partnership with nominated industry members of the RAG (Tenny Elisala, Cr Rock Stephen and John Tabo) is to:

   a) further understand the nature and extent of likely fishing effort in the short-term and longer-term industry aspirations and potential impacts on traditional fishing;

   b) outline the risks with targeting jewfish – a species vulnerable to depletion; and

   c) discuss with fishers the different management approaches for developing the fishery including:

      - opening with data collection and monitoring obligations and a review schedule for assessing whether the opening should continue
      - undertaking a resource survey before opening (noting funding would need to be sourced for this research); and
      - taking an adaptive management approach whereby fishing is allowed in part of the fishery as a means to examine likely impacts and the nature of fishing (noting this option is likely least viable given the small area under consideration)

BACKGROUND

10. At its meeting the RAG (meeting 8) noted the following risks and considerations with lifting the northern part of the closure:

    a. *General uncertainty on the nature and extent of fishing expected once the closure is removed*. Industry members advised that around 6 operators per community in Gudumalalgal (Boigu, Dauan, Saibai) were interested and able to fish in the finfish fishery. Species of interest are Barramundi, jewfish, garfish, ‘zarum’ and coral trout

    b. *Impacts on traditional fishing*: The RAG noted that commercial fishing in and around the relatively small near shore habitats may impact traditional fishing catch rates and sought advice from industry members on the likely interaction between the two sectors

(commercial and traditional). Industry member advice was that the impact could be managed as it would likely be a relatively small number of fishers working commercially per community.

c. *IUU incentives:* It was noted that the opening may have impacts on incentives for Illegal, Unregulated and Unreported fishing, with jewfish swim bladder being a particularly valuable commodity. Dr O'Neill advised that, on the Queensland East Coast, jewfish have proven to be a challenging species to manage with substantial management actions in place to regulate both commercial and recreational fishing for the vulnerable species.

d. *Potential targeting of less productive species*: Dr O'Neill advised that, due to netting impacts, another inshore species - King Threadfin Salmon - were also in a vulnerable position at present due to overfishing.

e. *Shared stocks with PNG*: Noting the proximity of Gudumalalgal communities to identified key PNG spawning habitat for Barramundi and likely connectivity between the stocks, the RAG noted that AFMA will need to work closely with the PNG National Fisheries Authority on proposed changes. The PZJA will also need to consider obligations under the Treaty alongside any proposed changes to Australian management arrangements for Barramundi. The RAG noted that under the Torres Strait Treaty commercial fishing for Barramundi is limited to only Australian Traditional Inhabitants and only in the Torres Strait within a defined area surrounding six islands within the 'top-hat' of the Protected Zone. Under the Treaty PNG retain the right to fish Barramundi in the waters surrounding these communities within the top-hat.

f. *Gillnetting in PNG:* The RAG noted AFMA advice previously tabled in the FFWG by PNG NFA, that fishers in PNG Western Province have had issues with their catch rates using gillnets to target Barramundi and jewfish. As a result PNG NFA have investigated whether fishers can effectively move to line fishing with lures.

g. *Community freezer:* An industry member advised that the infrastructure review had suggested a small portable freezer would best be suited to support these communities in the short term during the opening. It was advised that this could be a low risk, cost-effective investment as it could be relocated should the infrastructure not have sufficient usage.

h. *Fishery independent survey:* RAG science members advised that a fishery independent stock survey would be the ideal science to understand the finfish stocks in this area noting though that this is an expensive option.

11. The RAG provided guidance on potential management approaches (see draft FFRAG meeting record at Agenda Item 3.1, Attachment A).

Attachment A. Summary of PZJA advisory committee consideration and advice on public consultation outcomes on removing the Western line Closure.

1. 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 summary of community views and concerns raised during public community visits, 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 Meeting 6, 27-28 November 2019, Agenda item 4.1 Western line closure review. Meeting record extract.

2. 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.

3. 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.

4. 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**.**

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.	
FFRAG advice	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.

	To quantify these interactions and then assess possible fishing impacts there are at least two options: • 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. 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.
If the Closure is removed, what impact would it have on the TAC (up or down?)	
FFRAG advice	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.
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.	
FFRAG advice	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 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).

5. 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:

a. 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.
b. 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.
c. 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.
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.

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

6. 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).

7. 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.

8. 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;

9. 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.

10. 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.

11. The AFMA member also supported this approach noting both advice from communities and advice from the FFRAG. 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.

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

13. 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.

14. 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.

15. 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.

16. 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.

17. 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).

18. 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.

19. 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.

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
MANAGEMENT Management priorities	Agenda Item 4.2 For discussion and advice

RECOMMENDATIONS

1. That the Working Group **DISCUSS** and **PROVIDE ADVICE** on management priorities for the Finfish Fishery in 2021-22.

KEY ISSUES

2. FFWG advice is being sought on recommended management priorities for the 2021-22 financial year. AFMA seeks advice from each Working Group on priorities to ensure management resources are effectively focused.

3. AFMA has proposed the following management priorities for consideration by the Working Group:

   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;

   c. Supporting the PZJA's consideration of quota unit allocation options. As previously advised at FFWG meeting on 29 November 2019, the PZJA agreed (meeting on 19 November 2019) in principle that the review of Tropical Rock Lobster traditional inhabitant quota unit allocation be undertaken by an Independent Allocation Advisory Panel, directed the PZJA Standing Committee to provide draft Terms of Reference for an IAAP, including its membership and process. The PZJA agreed for the review to also consider quota unit allocation options for the Finfish Fishery. The timeline for progressing this work has been delayed largely due to COVID 19 related disruptions but is expected to resume next year.

   d. Formalising total allowable catches for the Finfish fishery. As previously considered by the FWG, Spanish mackerel and coral trout catches by the sunset sector are regulated through licence conditions. There are no catch limit conditions placed on the Traditional Inhabitant Boat sector. A plan of management is in place for the Finfish Fishery. Under the *Torres Strait Finfish Fishery Management Plan 2013* (the Plan) TACs may only be determined by the PZJA following the allocation of quota units (or units of fishing capacity). The plan allows for the allocation of quota units however this has not yet been undertaken (see above). At its meeting on 20 March 2018 the FFWG

supported implementing enforceable TACs by way of licence conditions comprising individual catch limits on sunset licence holders and a competitive catch limit on all TIB licences. Subject to the timing of (c) above further consideration of adopting this approach as an interim measure is recommended.

e. 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.

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
RESEARCH UPDATES	Agenda Item 5.1 For NOTING

RECOMMENDATIONS

1. That the Finfish Working Group **NOTE** outcomes of Torres Strait Scientific Advisory Committee (TSSAC) meeting on 2 November 2020.

KEY ISSUES

2. 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.
3. On 20 October 2020 AFMA sought comments from both RAG and Working Group members on draft scopes written by AFMA. The draft scopes circulated for comment are at **Attachment A**.
4. At its meeting on 2 November the TSSAC supported the four finfish fishery research scopes. The TSSAC did so noting that the expected AFMA budget would not cover the total costs of projects needed to address all four scopes. The TSSAC noted that AFMA and TSRA would continuing to pursue options to increase available research funding and noted TSRA would be able to better assess their available budget following the appointment of new TSRA Board in February 2021. The four finfish fishery scopes will be included in the public call for research funding proposals for the 2021/22 financial year.

5.1 Attachment A Draft research scopes for Finfish Fishery priorities recommended by the FFRAG on 8 October 2020 (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 B40.

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 feasibly 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.

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
OTHER BUSINESS	Agenda Item No. 6.1 FOR NOTING

RECOMMENDATION

1. That the Working Group **NOMINATE** any additional items of business for the meeting.

PZJA Torres Strait Finfish Fishery Working Group	Meeting 25 November 2020
OTHER BUISNESS Date and venue for next meeting	Agenda Item 6.2 For discussion and advice

RECOMMENDATIONS

1. That the Working Group **DISCUSS** and **PROVIDE ADVICE** on the proposed meeting schedule for 2021.

KEY ISSUES

2. A proposed meeting schedule, together with key items for discussions is provided in **Table 1.** Amendments to the meeting schedule may be required subject to the approval of new research projects, in particular if further work to develop the harvest strategy is approved.

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

Date	Group	Key agenda items
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.