

Torres Strait Finfish Fishery Harvest Strategy Meeting: Combined Resource Assessment Group and Working Group Meeting

27-28 June 2019

Rydges Plaza Hotel, Cairns

Draft Meeting Outcomes

Note all meeting papers and records are available on the
PZJA webpage: www.pzja.gov.au



Australian Government

Australian Fisheries Management Authority

Preliminaries

Preliminaries

The combined meeting of the PZJA Torres Strait Finfish Resource Assessment Group (FRAG) and the PZJA Torres Strait Finfish Working Group (FFWG) was opened in prayer by Cr Rocky Stephen at 9.10am. The FRAG Chairperson, Mr David Brewer acknowledged the traditional owners of the land on which the meeting was held. The Chair noted apologies from Mr Andrew Bodsworth (Chair of the FFWG), Mr Andrew Trappett (regular FRAG and FFWG EO), Mr Harry Nona (FRAG industry member), Mr Maluwap Nona (Chair Malu Lamar RNTBC), Mr William Stephen (Ugar industry observer) and Mr Alapasa Panuel (Ugar industry observer).

The Group was advised that AFMA were recording the meeting for the purpose of ensuring an accurate record is produced. The recording is kept secure and is deleted once the final meeting record is published.

The Chair began the meeting by welcoming the members of the Resource Assessment Group and Working Group and the invited industry participants to this combined meeting to continue developing harvest strategies for the Spanish mackerel and reef line (coral trout) fisheries.

The group noted a presentation by the Chair on the roles, procedures and policies of the FRAG and FFWG. The Chair outlined that the focus would be on further developing the details of the harvest strategies, noting the outcomes of the previous industry and CSIRO meeting on 11-12 June 2019.

Declaration of interests

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 conflicts of interest in Commonwealth MACs and RAGs to best protect the integrity of advice, members with grouped interests (industry, science, TSRA) 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).

Table 1. Attendance and declaration of Interests – FRAG and FFWG members

Name and position	Organisation	Declaration of interests
David Brewer, FRAG Chair and FFWG member	Upwelling P/L (David Brewer Consultancy)	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 Collaborator on the Torres Strait Traditional take project Current consultancies with Quandamooka Yoolooburrabee Aboriginal Corporation, Redlands City Council.
Gabrielle Miller, Meeting EO	AFMA	No interest declared
Selina Stoute, AFMA Member	Australian Fisheries Management Authority (AFMA)	Manager of an AFMA employee who is a co-investigator on the Spanish Mackerel stock assessment research project
Allison Runck, TSRA Member	Torres Strait Regional Authority (TSRA)	No pecuniary interests declared, noting that TSRA holds the access rights to the Torres Strait Finfish Fisheries and generates revenue on behalf of Traditional Inhabitants through seasonally leasing access.
Tom Roberts, QDAF Member	Queensland Department of Agriculture and Fisheries	No pecuniary interests. Manager of the East Coast Coral Reef Finfish Fishery and Spanish mackerel Fishery. QDAF member on PZJA forums
Paul Lowatta, FRAG Traditional Inhabitant Member		Masig TIB fisher
Kenny Bedford, FRAG Industry member	TSRA MyPathways	TSRA Advisory Committee TIB licence holder Researcher on the Traditional take project Traditional owner of Erub Director of MyPathways company
Rocky Stephen, FRAG and FFWG Traditional Inhabitant Member	Kos and Abob Fisheries Ugar, Brother Bear Fisheries, Ugar Torres Strait Island Regional Council	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 Working Group. Sits on Prawn MAC and TS Scientific Advisory Committee. Does not hold a TIB licence.

Name and position	Organisation	Declaration of interests
John Tabo, FRAG Traditional Inhabitant Member	TIB member FFRAG	Member of MDW association Member FFRAG On the TSRA Finfish Quota Management Committee
Tony Vass, FRAG and FFWG Industry member		Former finfish commercial fisher, here on behalf of the sunset licence holders
Rik Buckworth, FRAG and FFWG Scientific Member FRAG	Sea Sense (Consultancy)	Independent Fisheries Scientist with Sea Sense Consultancy, adjunct at Charles Darwin University, ex NT Fisheries, AFMA Northern Prawn RAG, AFMA South East RAG. Principal investigator on a proposal seeking funding for TS Spanish mackerel assessment work.
Frank Loban, FFWG industry member	Member FFWG	Not currently involved in Finfish Fisheries.
Tenny Elisala, FFWG Traditional Inhabitant Member	TSRA	TSRA Ranger Dauan, TIB licence holder
Hilda Mosby, FFWG industry member	TSRA, Environment Portfolio member	On the Masigalgal Fishing Corporation
Michael O'Neill, FRAG and FFWG Scientific member	Queensland Department of Agriculture and Fisheries	Principal scientist for TSSAC recommended project to develop a harvest strategy for the Torres Strait Finfish Fishery and pre-proposal for stock assessment work. Member of PZJA Finfish Working Group.
Ashley Williams, FRAG Scientific Member	Australian Bureau of Agricultural and Resource Economics James Cook University	ABARES fishery scientist under Department of Agriculture. Involved in previous TS research, is an author on the ABARES Fishery Status Reports.

Table 2. Invited participants and observers

Name	Organisations	Declaration of interests
Yen Loban	TSRA Fisheries Portfolio member	Holds a TIB licence.
Trevor Hutton	CSIRO	CSIRO receives research funding. Principal investigator for TSSAC recommended project to develop a harvest strategy for the Torres Strait Finfish Fishery. AFMA Northern Prawn Fishery RAG regular observer and PI for the NPF stock assessment project.
Madeina David	TSRA cadet	No pecuniary interests, father is commercial fisherman
Daniel Wailu	TIB industry, Mer	TIB fisher from Mer working for Dennis and Alan Passi
Dennis Passi	TIB industry, Mer	TIB fisher Chair MDW Fishing Corporation
John Morris	TIB industry Masig	PBC Chair Masig On the TSRA Finfish Quota Management Committee
Alan Passi	TIB fisher, Mer	Fishes in the Torres Strait and East Coast for coral trout
Bert Matysek	TIB industry Erub Fisheries Management Association	TIB Licence holder, Fish receiver Operates the EFMA freezer facilities on Erub
Michael Passi	TIB industry, Mer	Kemer Kemer Meriam member on the Hand Collectable Working Group Commercial Beche-de-mer fisher
Egon Stewart ¹	AFV New Traveller	Holds a sunset licences to access the Torres Strait Finfish Fishery
Jo Langstreth ²	QDAF	Was not requested

Research members

Scientific members and those involved with TSSAC research projects left the room (Rik Buckworth, David Brewer, Selina Stoute, Trevor Hutton, Ashley Williams, Michael O'Neill and Allison Runck). The Group considered their declared interests, noting the involvement of some in the Spanish mackerel stock assessment and the Harvest Strategy project team.

The Group considered the declared interests stated by the researchers and scientific members. The Group noted the potential conflicts of interest needed to be balanced against their subject matter expertise. The particular focus of this meeting was to develop harvest strategies for the Spanish mackerel and coral trout fisheries. It was considered that the input for the researchers and scientific members would be valuable during the development of these documents. The Group noted that much of the science was quite technical for non-science members and that the scientists should slow down their discussions and explanations.

¹ Mr Stewart attended the meeting after lunch on the second day and did not give a formal declaration of interest.

² Ms Langstreth was invited by AFMA to attend the meeting on the second day to provide an update on the recently approved project on Spanish mackerel biological data collection. Ms Langstreth is the principal investigator on the project. Ms Langstreth attended the meeting for the project update only.

The Group agreed that all these members and invited participants should participate in all discussions as their expertise would likely be required. If a clear conflict arose, the scientific members would leave the room and not participate in that discussion. The scientific members and researchers re-joined the meeting.

Industry members

Industry members and other industry invited participants (Kenny Bedford, Paul Lowatta, Tenny Elisala, Bert Matysek, Alan Passi, John Tabo, Rocky Stephen, Michael Passi, Dennis Passi, Daniel Wailu, Hilda Mosby, Dennis Passi, Tony Vass, Yen Loban and Frank Loban) left the room.

The Group discussed that the fishers were an integral part of the development of the harvest strategies, as the access to the finfish fisheries are 100 per cent owned by traditional inhabitants. The Group noted that the decisions being made about the fishery, therefore, needed to include the industry perspective.

The Group discussed that declared interests of the members and participants that had left the room. The Group noted that the potential conflicts were not just at the personal level, but could include if an industry member advocated for a particular cluster to the potential detriment of the fishery. The Group agreed to remind the industry members of this possible conflict.

The Industry members and participants were invited back into the room and reminded that if they thought of any other areas of interests that they wished to have recorded that they could do so at any time.

Government

Government employees and those on the TSRA Quota Management Committee (Allison Runck, Selina Stoute, Gabrielle Miller, Kenny Bedford, Hilda Mosby, Yen Loban, Tom Roberts, John Morris, Madeina David, John Tabo) left the room.

The Group discussed the declared interests of the members and participants that had left the room. The Group noted that the TSRA had declared their holdings of finfish entitlements and that the revenue generated from leasing these entitlements (Sunset Licences) and that this revenue was invested in the development of the fisheries in the region.

In general, the Group expressed that the outcomes from fisheries meetings were not being clearly communicated to all of the communities in the Torres Strait. A desire to be involved in fisheries management decisions, from quota leasing to setting of the total allowable catch to providing information on the state of the fishery, was expressed by the Group.

The Group agreed that the Government members and participants should participate in discussions and that members and participants could be asked to leave if a direct conflict of interest was present.

Adoption of the Agenda

The Agenda for the meeting was noted and accepted without change. The draft minutes from the previous industry harvest strategy meeting from 11 - 12 June 2019 were circulated. It was noted that the minutes had not been agreed and adopted, however Industry were supportive that the draft minutes were an accurate representation of the meeting and captured the thoughts and opinions of the Industry well.

Action items

The Group briefly discussed the action items from the previous meeting. It was agreed at the previous meeting that the project team would take the following suggestions from industry away for further development prior to this meeting if possible:

- Explore 15 per cent change decision rules in other fisheries where there is asymmetry (the rule applies when the recommendation is to decrease the TAC but not when the recommendation is to increase the TAC) and how these rules might apply to setting TACs in this fishery.

- Shorter recovery time approach for Spanish mackerel (e.g. 8 or 10 years for Spanish mackerel instead of 12 years used as a timeframe for building when below B TARG but above B LIM).
- In order for the RAG to explore a CPUE trigger rule for conducting a Coral trout assessment, provide the standardised CPUE over the reference period or a shorter time period (e.g. average of last three seasons). This point was discussed during the meeting and the time frame from 2012-2017 (inclusive) was agreed to.

The Project team noted that these items were outstanding action items and would be completed for the next Finfish Resource Assessment Group to consider (although during this meeting – the CPUE trigger rule was discussed and a recent time-period was chosen).

The Group noted the Harvest Strategy Project Team's concerns that currently the fishery dependent catch per unit effort time series are the only data that inform the stock assessments. While catch rate data is an important index for changes in abundance when conducting stock assessments, other data sources, such as changes in fish size or updated age frequency data, would over time provide more data inputs into the stock assessment models.

Torres Strait Finfish Fishery Harvest Strategies

Elements of harvest strategies

The Chair reiterated that the aim of the meeting was to build on the work of the previous meeting developing harvest strategies for the Torres Strait Spanish mackerel and Coral trout fisheries. In particular, the Group would be focusing on developing the harvest control rules for both fisheries and seeking input from industry especially as to how the industry wanted to see the fisheries operating. The Group noted that this was only the second workshop focussed solely on developing the Harvest Strategies (building on preliminary work done in previous FFRAG and FFWG meetings) and that there would be more opportunities to comment and provide input into the harvest strategies before the strategies are implemented. Further, that the harvest strategies are living documents that are reviewed from time to time.

The Group viewed a short presentation³ providing an overview of harvest strategies and how they are used in managing commercial fisheries around Australia. The video explained the key components of harvest strategies and how harvest strategies operate to maintain the harvest of commercial fisheries at sustainable levels. The Group noted an additional presentation that outlined the key components of harvest strategies using the draft Tropical Rock Lobster and Beche-de-mer harvest strategies as examples.

The Group reiterated the outcomes from the previous meeting (Attachment A) including the agreed principles upon which the harvest strategies are developed. Reviewing the key objectives for the fishery within the harvest strategies is also an important element. The Group discussed the merits of including an objective to increase or maximise traditional inhabitant participation.

The Group considered the different states of the two fisheries. The Spanish mackerel fishery targets one species of mackerel and much of the commercial catch is from breeding aggregations such as at Bramble Cay (Maizab Kaur). The CPUE data suggests that the stock is declining with an estimated current biomass from the most recent stock assessment at B31 (31 per cent of pre-commercial fishing levels). In response, the TAC was recently reduced to try to increase the biomass from B31 to an interim target of B40. The current focus of management in the Spanish mackerel Fishery is to increase the biomass.

The Coral trout fishery has four target species, but is often only reported as a species group. The species distribution and composition is not well understood which creates uncertainty around the biomass estimates. The recent stock assessment, using changes in CPUE as an index for changes in abundance, suggests that the biomass of coral trout (as a basket of four species) is very high at around B80 (most model runs of the stock assessment reported the stock to be above B65).

³ The Fishwell Consulting harvest strategy video is publically available online:
<https://www.youtube.com/watch?v=emtEzavpaGI>

The Chair reiterated that the previous industry meeting made good progress in agreeing to the principles, considerations and the objectives of each of the harvest strategies. The focus of this meeting was to now recommend the rules for assessing the stock status and setting of the total allowable catch i.e. harvest control rules and trigger reference points.

The Group noted and supported the design principles together with key considerations for developing the draft harvest strategy agreed at the 11-12 June 2019 industry meeting.

General design principles

1. TACs should vary according to stock status (up and down);
2. If biomass decreases be cautious. Stock is not to go below the limit;
3. If biomass is increasing be conservative; 'bank' fish.
4. For Spanish mackerel : a shorter-term target is required

Important considerations

- Commercial fishing by traditional inhabitants is important for:
 - local employment and economic development; and
 - passing down traditional knowledge and cultural lore.
- The Finfish harvest strategy should:
 - o Compliment cultural lore;
 - o Have regard for TIB participation;
 - o Ensure sustainability, enough fish are left in the water to make money and the protection of traditional livelihoods and cultural value

Trevor Hutton, Finfish Harvest Strategy Project team leader, led the Group through the outcomes of the previous meeting, highlighting the key recommendations for the Coral Trout and Spanish mackerel harvest strategies (Attachment A). Dr Hutton outlined the aims for the topics for discussion which were:

1. To continue development of the Coral Trout Stock Assessment including determining additional data needs, frequency of stock assessments and agree on trigger reference points.
2. To continue development of the Spanish mackerel harvest control rules and trigger reference points.
3. Finfish fishery survey. Discussion was to focus on whether or not a survey would be useful and whether it could be justified.
4. To discuss the need for traditional inhabitant catch and effort data and the most appropriate methods for collecting the data.

The Group discussed each of these points, with input from the science members and project team. A summary of the discussions is outlined below.

Coral Trout Harvest Strategy

The Group discussed the current state of the Reef Line Fishery (coral trout) and what had been agreed at the previous meeting (Attachment A). The Group noted that a preliminary stock assessment was recently conducted, the results of which were not adopted for decision making but the preliminary assessment estimates that the Coral Trout stock is currently around B80 (80 per cent of pre-commercial fishing levels).

The Group noted that the recent assessment, in line with the previous management strategy evaluation, grouped the four coral trout species together as a basket which increases the uncertainty on the biomass for each species.

The Group noted that stock assessments are costly and that conducting another stock assessment without cause (new data, reduction in CPUE) would not be the most efficient use of resources. The Group discussed whether an analysis could be conducted that would recommend a suitable schedule for conducting a stock assessment.

The Group discussed that additional data, such as TIB catch and effort data (either through logbooks or the voluntary effort section of the mandatory Catch Disposal Records), better reporting to the species level rather than listed as basket coral trout, underwater survey data and also data from the CSIRO 1994-95 survey, would provide updates into future stock assessments. The Group did not make any firm recommendations for a long-term stock assessment schedule in the event that additional data were not available but did propose a three year period in the short term (see below for further details).

The Group provided the following recommendations for the draft coral trout harvest strategy:

A stock assessment should be conducted in three years provided additional data available (during the 2021-22 season). The Group noted that postponing the stock assessment for three years would allow enough time for additional data to be included. The additional data priorities are: a) the 1994-95 CSIRO fish survey data b) improved TIB data; c) a new catch or underwater survey.

A regular stock assessment schedule should be determined. The Group agreed that between now and the next stock assessment, that analyses should be conducted to determine the appropriate schedule for conducting stock assessments in the Coral Trout Fishery.

The use of empirical trigger reference points was recommended for the years between stock assessments. The agreed trigger reference points will use CPUE data as a proxy for biomass and the yearly fishery catch data to ensure the maximum yield of the fishery zones are not being exceeded.

The specific trigger reference points were:

a) In line with the recommended target reference point (B TARG = B60), and taking into account the conservative approach preferred by industry, if the biomass of coral trout is less than B60 (B TARG) then an integrated stock assessment will be conducted. To determine the biomass level, this trigger will use standardised CPUE data as a proxy for biomass. It was agreed that the average CPUE from 2012 until 2017 (inclusive) would be used as an indicative reference point of the CPUE at B80 from which the CPUE at B60 can be calculated and used as the trigger reference point.

b) If the combined yearly total catch of the four coral trout species from both commercial sectors is greater than 90 t, an integrated stock assessment will be conducted. Ninety tonnes was agreed because this is the estimated potential yield of Zone 3 at B60 from the preliminary stock assessment, and where most of the common coral trout is caught. This level was chosen on the advice of the Science members to avoid the risk of localised depletion within any of the Zones.

Action items

The project team is to determine whether it is appropriate to use standardised CPUE or raw CPUE in the assessments and for the triggers.

Spanish mackerel Harvest Strategy

The Group noted that the Spanish mackerel stock biomass has declined and is currently estimated at B31 (31 per cent of pre-fishing levels). Noting the decline in the stock and the need for precaution, the PZJA set the recommended biological catch at 94 t and the commercial TAC for the 2019-20 fishing season at 82 t (RBC minus 10 t for subsistence fishing and 2 t for recreational fishing). This was a 33 t reduction from the 2018-19 season TAC of 115 t. The stock assessment projections indicate that the 82 t TAC is predicted to allow the stock to build back to B40 (40 per cent of pre-commercial fishing levels) in a 12 year timeframe (being three times the average age of a mature female fish). In this instance B40 was chosen as an interim target reference point (B TARG) as a compromise between building the stocks and the potential economic impacts on the fishery.

The Group reviewed what was agreed for the Spanish mackerel harvest strategy at the previous meeting (Attachment A) and **provided the following recommendations for the draft Spanish mackerel harvest strategy:**

A stock assessment should be conducted each year until the biomass is greater than B40. It is assumed that the stock will take a few years to build to B40 at the current TAC. The industry participants noted that setting a lower TAC would allow for the stock to build faster.

The ongoing regularity of stock assessments will be set once B40 has been reached.

B TARG (interim) was recommended to be B48. This is an interim B TARG that will be reviewed once it has been reached. The Group were unable to settle on a higher BTARG, given the current indicative biomass (B31) and the long term (>12 years) at current TAC levels, or significant catch reduction required for the stock to rebuild above B48. Industry expressed a strong preference for management to focus on building the biomass in the coming years, before tackling any other scenarios.

The TAC will be set to reach the target reference point (B TARG) by a determined year. From the 2020-21 season, the TAC will be set to allow the stock to build to B48. The FRAG will consider which year should be the aim for reaching B TARG prior to setting the 2020-2021 TAC. The scientists and industry noted that in determining the target year, the social/economic impacts of a low TAC would need to be weighed against building the stock quickly.

Action items

The FRAG will consider scenarios to examining multiple recovery schedules to reach B48.

Other general discussions

TIB data collection

The Group discussed whether logbooks should be compulsory for the TIB sector. It was noted that in both fisheries, the key indicator of stock status being used is catch per unit effort from the sunset licence sector. The Group agreed that the assessment and fisheries management would benefit from improved TIB catch data. More comprehensive and spatially explicitly TIB data would support the data needs of the fisheries by providing information on where the TIB sector is fishing compared to the sunset licences (noting closures exclude sunset fishers from fishing grounds within 10nm of eastern communities), the catch rates and changes through time in the fishing effort by the TIB sector. It was suggested that having compulsory logbooks would create an historical record of the TIB sectors involvement in the fishery.

Industry members stressed that data security is of critical importance to the sector. How the data is stored, the confidentiality and who has access to the data needs to be clearly explained to the communities.

The Group agreed that the TIB and sunset sector data should be comparable and that thought needs to be given as to the best way to collect these data. Industry agreed that it may be difficult to get fishers to complete a complicated logbook. It was suggested that a simple phone app might be preferred by industry instead of the paper logbooks, noting that there had been some success in a research trial on the Eastern islands and that since then, internet access via smart-phones has become more readily available on the islands.

The Group agreed that logbooks should be compulsory for the TIB sector.

TIB participation

The Group discussed whether to include increasing or maximising TIB participation in the fisheries as an objective of the harvest strategies, and if so, what was the ultimate goal.

The Group agreed that, while maximising TIB participation in the fisheries was a goal, it should not be included as a formal objective of the harvest strategies. The Group agreed that it was important to understand the current levels of TIB participation in the fisheries and that participation should not be limited to just fishing, but could be expanded to include directly participating in research, monitoring and management of the fisheries.

Industry members and participants raised many issues with the inclusion of TIB participation as a formal objective, especially as there are factors, external to fisheries management, that prevent TIB participation. The key factors discussed were:

- **Difficulty in selecting a metric to measure participation.**
There are more fishers operating than there are licences, with many people working from someone else's boat as a common practice in communities. Fishing effort can't be used as a metric as it is not currently recorded (not a legal requirement in CDRs). Kilograms of fish landed and the number of CDR's completed is often influenced by the weather or whether fishers are working or completing training away from fishing or whether a community freezer is available and operational.
- **The costs of fishing.**
Fishing is often too expensive, for example, fishers may not have the capital or skills to repair a broken engine. Similarly, while the TSRA are setting up community freezers on different islands, complete with training in food safety and operation of the freezers, the group noted that the current freezers are only 'breaking even' economically.
- **Deterrents to participate in fishing.**
Many fishers and divers in the communities are working for the MyPathways program. Fishing does not count towards a MyPathways work plan, so fishers and divers are working elsewhere. Additionally, part-time fishers on MyPathways won't move towards full-time fishing and risk losing MyPathways income. Fishing is not considered to be a stable income, whereas MyPathways is.

Given that the key factors limiting TIB participation were due to economics, industry members and participants thought it important to concentrate on improving the economic returns to the communities. This might include directly exporting from the Torres Strait rather than selling to a 'middle-man' in Cairns or selling a higher quality product e.g. possibly selling live trout rather than fillets.

Torres Strait Coral Trout Survey

The Group discussed the desire for a catch survey or an underwater visual survey of the coral trout species to be conducted across the Torres Strait. The Group noted that the majority of the data that is used in assessing the Finfish Fisheries comes from the sunset sector catch and effort data. In addition, the coral trout stock assessment relies heavily on species diversity and abundance data from the Great Barrier Reef (GBR) as a proxy for the Torres Strait finfish fisheries. The reliance on data from one sector of the Fishery and from proxy data increases the uncertainty within the stock assessment model. The Group agreed that, even though the stock assessment suggests that the coral trout population is at B80, that the uncertainty in the model (only accepted as a preliminary assessment by the FFRAG) requires a more cautious approach be taken by management.

Industry noted that a greater level of understanding and certainty about the Coral Trout Fishery is desirable before effort by the TIB sector is substantially increased. Industry noted that the Fishery is important to the Torres Strait Islanders community aside from generating commercial income. Consequently, Industry are more inclined to use a precautionary approach in managing the commercial fishery.

The Group discussed that some data may be available from an underwater survey that was conducted by CSIRO in 1994-95. These data, if they could be analysed, would provide a baseline to compare with any additional surveys.

The Group noted that conducting a catch survey or an underwater visual survey would be expensive and that there were only limited funds available annually in the AFMA Torres Strait research budget prioritised by the Torres Strait Scientific Advisory Committee.

The Group agreed that:

1. fishery independent data is crucial for improving the understanding of the finfish stocks across the Torres Strait and having a baseline data on species distribution and abundance would increase the level of certainty in the stock assessment models;
2. data from a survey would be a useful comparison to the 1994-95 survey and allow scientists to assess how the fishery has changed over time;
3. survey data would provide information about the species distribution, densities and abundances for the Torres Strait Coral trout fishery, which could be used as inputs for an updated stock assessment;

4. undertaking a survey now, when the coral trout biomass is estimated to be B80 will assist future assessments. The survey would help assess stock productivity and potential yields. It would be an 'anchor' for future stock assessments and increase the reliability of forecasting stock trends; and
5. understanding the resource is crucial for the fishery to build in a sustainable manner and to give the Industry and the Torres Strait community confidence that the resource is being accurately assessed.

Harvest Strategy language and preamble

Industry suggested that the harvest strategy should be in English and in a Torres Strait language, which would make the harvest strategy accessible to a greater number of Torres Strait Islanders. Another option suggested by industry was to have a summary of the harvest strategy, the objectives and key rules that could be translated into the two main languages. This was considered to be a more feasible option than translating the entire harvest strategy. The Group considered both suggestions to be worth considering further but did not make a final recommendation.

Report from a sunset sector fisher

Mr Egon Stewart, a sunset licence holder, joined the meeting to update the Group on the recent fishing season. Mr Stewart reported that this season, for both Coral Trout and Spanish mackerel, was better than the previous season, despite bad weather and fishing time lost due to engine issues.

The Group noted the differences in fishing behaviour between boats that targeted live or fillet coral trout. Generally, live trout boats will heavily fish one area quickly to minimise transit time of the live trout. Fishers that target trout for fillet tend to fish slowly, moving between different areas.

Mr Stewart reported that depredation by sharks appears to have increased, particularly at Bramble Cay when targeting Spanish mackerel. Whilst Mr Stewart was unable to estimate the amount of catch that was being taken, he noted that after one fish was taken that the fish went off the bite. The Group considered that shark depredation, and the potential effects of shark depredation on catch per unit effort (CPUE) may be important to the stock assessment. Mr Stewart noted that it would be difficult to quantify the number of fish taken and the impact of a depredation on potential catch rates. The Group considered that given the impact that depredation may have on CPUE and the reliance on CPUE for the stock assessment, that gaining an understanding of the impacts of shark depredation was of important.

Research

The Group noted the outcomes of the Torres Strait Scientific Advisory Committee, specifically the projects related to the Finfish Fisheries that had been supported.

Jo Langstreth, principal investigator, presented to the group about the recently funded project "Enhancing biological data inputs to Torres Strait Spanish mackerel stock assessment". The researchers will work with industry to collect biological data (fish frames, gonads, otoliths (ear bones)) from the commercial Spanish mackerel fishery (target ideally 900 but minimum is 500 samples). The data from this project will be able to be included into the stock assessment and strengthen the understanding of the structure of the Torres Strait mackerel stock and support the outcomes of the stock assessment. The Group noted advice from an industry member that Mer fishers take Spanish mackerel mostly for kai kai but the volume is similar to commercial levels.

The Group discussed future research priorities to be included in the Finfish rolling five year research plan. These include:

1. Survey of coral trout species across the Torres Strait. The Group recommended that a catch survey or an underwater visual survey be put to the TSSAC as a high priority.
2. A desktop study of the 1994-95 CSIRO underwater survey be undertaken to provide baseline information on the Finfish Fisheries and possibly on the habitat, spatial structure and species diversity and abundance of the finfish communities.

3. Understanding of the impacts of shark depredation. Following the update from Mr Stewart, the group considered that understanding how shark depredation impacts catch per unit effort and stock mortality should be examined and considered for the next stock assessment.
4. Optimum fishing strategies for increasing productivity. This project would focus on the optimum methods of fishing to ensure that productivity is kept high. For example, would fishing a spawning aggregation have detrimental effects on the productivity or is there an optimum size range that should be fished to keep recruitment high or is it better to fish the largest fish.

Meeting closed

The meeting was brought to a close by the Chair. Industry agreed that good progress had been made on the harvest strategies and that their views had been reflected well in the progress to date. The meeting ended in prayer by Cr Rocky Stephen at 5pm.

Torres Strait Finfish Industry Harvest Strategy Meeting

11-12 June 2019

Rydges Plaza Hotel, Cairns

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Preliminaries

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The meeting was opened in prayer at 09:00 and the meeting Chairperson, Mr David Brewer (Finfish Resource Assessment Group) welcomed participants. The Chair acknowledged the traditional custodians of the land on which the meeting was being held.

Adoption of agenda

It was agreed for the agenda to be practically focused on progressing the components of the harvest strategies for coral trout and Spanish mackerel. It was agreed that two opening sessions would focus on:

- 1) Harvest strategy principles, and
- 2) Objectives for the Torres Strait Finfish Fishery harvest strategy.

It was agreed that the meeting would then focus on progressing the development of reference points, indicators, assessments and monitoring in relation to scenario based questioning for both Spanish mackerel and then coral trout.

Attendee introductions

Attendees were asked to introduce themselves to the meeting and to describe their background and if they were a fisher, to talk about how they used the Torres Strait Finfish Fishery.

Table 1. Attendance and personal introduction

Attendee	Introduction
Dennis Passi	Mer community, 30 years' experience fishing commercially, runs business mainly working coral trout. Helped develop commercial fishing on Mer through the freezer in the 1990s.
Kenny Bedford	Erub community, previously fished commercially for coral trout. Previous experience working for TSRA, fisheries portfolio member.
Rocky Stephen	Councillor for the Ugar community. Licenced fish receiver. Involved in a commercial fishing business on Ugar working mackerel.
Bert Matysek	Erub community, manager of the Community Freezer. Chairperson of the Erub Fisheries Management Association.
Dan Sailor	Erub community, fishes commercially for mackerel, works at the Erub Community Freezer. TSRA Finfish Quota Management Committee member.
Alan Passi	Mer community, 15 years' experience fishing commercially, working coral trout on Mer.
Mike Passi	Mer community, 20+ years' experience. Mainly fishing beche-de-mer, involved in development of BDM harvest strategy.
Alapasa Panuel	Ugar community, 20 years' experience fishing commercially east coast. Licenced fish receiver.
James Zaro	Mer community, former commercial fisher for beche-de-mer.
Frank Loban	Badu community, fishes commercially for TRL. Serves on several PZJA working groups.

Attendee	Introduction
Jon Tabo, Jr.	Mer community, commercial fisher. PZJA Finfish RAG industry member. TSRA Finfish Quota Management Committee.
Allison Runck	TSRA Fisheries Program.
Liz McCrudden	TSRA project officer, Fisheries Program.
David Brewer	Independent consultant, AFMA invited Mr Brewer to act as an independent chairperson for the meeting.
Trevor Hutton	CSIRO harvest strategy project lead. 11 years with CSIRO.
Andrew Trappett	AFMA, Finfish Fishery Manager, Snr. Fisheries Management Officer, been with AFMA since 2009.

Harvest Strategy Principles

The meeting attendees viewed a short video presentation⁴ providing an overview of harvest strategies in use in other Australian fisheries and the Australian Governments Harvest Strategy policy. The group noted the key terms outlined in the video (target and limit reference points) and recommended that similar videos would be welcomed by Torres Strait communities to support understanding of larger fisheries projects such as harvest strategies.

As context, the group noted an overview of the Beche-de-mer and Tropical Rock Lobster fishery draft harvest strategies currently under development. The meeting noted the framework components that needed to be developed for the Finfish Fishery.

The meeting considered and agreed the following **five general principles** for how a harvest strategy should be developed for Spanish mackerel and coral trout:

1. Industry advised that it is acceptable for sustainable total allowable catch limits to vary from year to year.
2. If biomass (number of fish) decreases (based on the outcomes of assessments) industry have advised that a precautionary response is required which may mean a decrease in the total allowable catch to lower fishing mortality. It was noted that other factors may be impacting the stock besides fishing mortality but the impacts of fishing mortality could be controlled to help ease the situation. Fishers provided clear advice that they do not want stocks near the limit reference point of B20 (20 per cent of pre-fishing biomass).
3. If biomass increases industry have advised that a conservative response is required with a preference to “bank” and not take available catch increases, thereby leaving more fish in the water to support future higher catch rates and less travel to take these catches.
4. Industry noted the present biomass estimate of the Spanish mackerel stock abundance and agreed that the short term level of harvests should build the stock in the first instance to a target biomass of B40 (40 per cent of virgin biomass).
5. Note that a longer term target reference point for Spanish mackerel above B40 was not agreed at the present meeting but industry did consider B48 or a higher target noting social considerations such as use of mackerel for subsistence (kai-kai) and the need for a ‘buffer’ should PNG opt to take up catch sharing arrangements.

⁴ The Fishwell Consulting harvest strategy video is publically available online here: <https://www.youtube.com/watch?v=emtEzavpaGI>.

Objectives

The meeting discussed the broad fishery objectives listed in the *Finfish Fishery Management Plan 2013* and broke into small groups to discuss these objectives and whether they could be operationalised in the context of the fishery harvest strategy.

Objective 1:	To acknowledge and protect the traditional way of life and livelihood of Traditional Inhabitants, including their rights in relation to traditional fishing for finfish.
Objective 2:	To ensure that harvest levels are at, or below, levels that maintain biologically viable stocks of target and non-target species.
Objective 3:	To provide for the use and conservation of Torres Strait finfish resources in a way that minimises impact on the marine environment.
Objective 4:	To optimise economic viability of the fishery.
Objective 5:	To provide for optimal utilisation, cooperative management, and for catch sharing to occur with PNG.

The meeting recommended that the harvest strategy has an objective added as follows:

“The harvest strategy must have regard to 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* “

It was considered that the strategy needed to complement traditional laws such as, for example, during fine weather fishers were not to work the home reefs around communities and instead were to fish out wider, saving the catches near home for foul weather and for community members without access to boats.

The meeting also suggested an additional objective for the harvest strategy should be for participation levels of the TIB sector to be measured with consideration given in developing the strategy as to what should occur if participation levels drop. Industry advised that after 10 years of leasing the participation level of the TIB fleet of boats had not increased. Industry advised that before the 2007 buyout it was intended that unutilised Total Allowable Catches (TAC) were to be seasonally leased to sunset fishers only until the TIB sector could expand to fill most of the TACs.

Industry suggested that in line with the implementation of their harvest strategy a cap should be placed on sunset leasing at the present 2019 levels with an aim to encourage the TIB fleet to take more of the TACs and expand their catches to take over and supply the market demand. Industry called on government to work to consider ways to promote engagement of communities in commercial fishing.

It was noted that engagement in commercial fishing was a key employment opportunity in many communities but was also a key way in which traditional ecological knowledge and culture was passed down from one generation to the next. Industry advised that the fishery has strong cultural value as well as economic value to communities.

The key objectives that industry stressed for the development of the harvest strategy were biologically viable stocks (sustainability), economic viability i.e. enough fish in the water to support

commercial take and the correct management settings to protect livelihoods and cultural values.

Industry noted that the PNG catch sharing obligation under the Treaty was a good reason to have a strong harvest strategy to make sure there is always a healthy level of biomass available for Australian Traditional Inhabitants should PNG opt to take their 40 per cent share of the mackerel stock in Australian waters.

Spanish mackerel harvest strategy components

The meeting provided the following advice to the project team to support development of the draft harvest strategy for Spanish mackerel.

HS Component	Industry advice
Limit reference point (B LIM)	B20 agreed (20 per cent of pre-fishing biomass) This was suggested as the default proxy from Commonwealth Harvest Strategy Policy and was generally considered appropriate for bony fish species. No information from industry to suggest an alternative. Industry noted that below this limit fishing would cease or stock would move to a rebuilding strategy.
Virgin biomass (B 0)	1940 is used by the model as the estimated starting point of the commercial fishery. It is assumed that at this point the stock was not impacted by commercial fishing and was at the beginning of that year at unfished biomass.
Target reference point (B TARG)	Noting that present biomass of the stock (B31 is B CURRENT) and the interim B40 target used by management, industry supported the principle of catch levels being set to build the stock to B40 first and gave some consideration to a target level higher than B40 to take into account subsistence and catch sharing with PNG. B48 or B60 were considered but were not recommended by industry without further discussion.
Indicators	Biomass as per the reference points above is an indicator along with standardised catch per unit of effort (CPUE)
Monitoring	Main monitoring for the fishery will come through fishery dependent daily fishing logbooks (mandatory for sunset, main TIB fishers being encouraged to try a logbook) and catch disposal records noting effort component on these reports is voluntary. Noted that biological monitoring (ageing and length frequency) has been identified as a data need for the fishery and a research project proposal is pending subject to funding.
Assessment	Noted that the assessment uses CPUE as an index of abundance (numbers of fish) and would be used to refer to where the biomass was now (B CURRENT) versus the target reference point (B TARG) and set a RBC accordingly. It was noted that consideration was needed on the frequency of assessments, noting that some fisheries had a rule that if two consecutive indicators points (e.g. CPUE, biomass) were below an agreed set level of that indicator an assessment was triggered.
Harvest control rule	Full support from industry that if the stock is below the target reference point, catches should be set at a level aiming to build the stock towards the target within 12 years (with 10 and 8 year scenarios to be explored). Industry agreed that if the stock assessment outcomes suggested increases in RBCs (and in turn 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

	level of utilisation. Industry advised a preference for 'banking' these fish to contribute to the biomass and future catch rates rather than harvesting this extra stock.
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Other points discussed on Spanish mackerel harvest strategy components

It was noted that should participation in the TIB sector be boosted by additional primary-tender operations entering the fishery or community freezers coming online (for mackerel and trout), there would be a sudden increase in catches. It was considered that the strategy needed to be adaptive to this to allow increases in TACs when the assessments suggest this is possible.

Industry considered that harvest control rules should be setup to generally increase RBCs (and thus TACs) in a conservative manner based on assessment outcomes or indicators if the assessment indicators show an increase. It was considered that over the short to medium term, increasing TACs would not benefit the TIB fleet noting the low levels of present utilisation. General advice from industry was to 'bank' fish where appropriate i.e. not take TAC increases and leave these fish in the water to breed to provide higher biomass, higher future catch rates and help maintain subsistence catches.

It was agreed for the project team to investigate another option of 'banking' catch would be to examine building rates for the stock. While 12 years is used now as a timeframe now to build the stock it was noted that a shorter timeframe would act as a conservative measure to lower harvests and effectively leave more fish in the water. It was agreed for the project team to investigate 10 and 8 year timeframes and how these might function to build the stock.

In the absence of an adopted B TARG the meeting noted that a B TARG of 60 per cent of virgin biomass (B60) was used for the past few seasons as a 'triple bottom line' target, taking into account ecological, economic and social factors (including subsistence usage and catch-sharing option with PNG). It was advised that a change had been recommended by the RAG and Working Group, in line with best practice and economic impacts on the fishery, to use a B40 target for the interim. This target was used noting the present biomass estimate of the stock was around B31 (B CURRENT) and the B60 level may be a more aspirational target under the current draft harvest strategy with further exploration of building rates.

Coral trout harvest strategy components

Component	Industry advice
Limit reference point (B LIMIT)	<p>B20 agreed (20 per cent of virgin biomass (1940)).</p> <p>This was suggested as the default proxy from Commonwealth Harvest Strategy Policy and was generally considered appropriate for bony fish species. No advice to suggest an alternative. Industry noted that below this limit fishing would cease or stock would move to a rebuilding strategy.</p>
Virgin biomass (B0)	<p>1950 is used by the model as the estimated starting point of the commercial fishery. It is assumed that at this point the stock was not impacted by commercial fishing and was at the beginning of that year at unfished biomass.</p>
Target reference point (B TARG)	<p>B60 target reference point suggested with the following rationale:</p> <ul style="list-style-type: none"> • B MSY, was estimated in preliminary assessment but given uncertainty (and it is preliminary) the estimated value is not used to set an RBC. • Commonwealth Harvest Strategy Policy (HSP) suggests that a proxy B TARG of B48 or 1.2 times the biomass at BMSY. • HSP suggests B40 is used for a proxy for BMSY. • CSIRO advice is that there is a case for using B50 as a proxy for BMSY, rather than B40, based on trout being a longer lived species, managed as a basket of four species. • Therefore 1.2 times the B50 BMSY proxy equals a B60 target reference point. <p>Industry were supportive of a conservative B TARG for the stock and in general managing the fishery at a level which leaves more fish in the water than a straight MSY target rate. The group were supportive of a target that can take into account the patchiness of the stock (small areas with good trout catch rates separated by large areas of desert), the preliminary nature of the stock assessment, the risk of localised depletion, the basket of four species and that a proportion of the stock is not available (e.g. catchability issues; fish present on grounds but not biting).</p>
Indicators	<p>Aside from fishery dependent monitoring data (catch disposal record data and daily fishing logbook catch and effort data) industry suggest that other indicators for the health of the stock may include size of fish being captured and spatial changes in where good catch rates are occurring. Industry advice it is that more feasible for their businesses to catch a smaller number of larger sized fish than large numbers of smaller fish.</p>
Monitoring	<p>Main monitoring is through fishery dependent daily fishing logbooks (mandatory for sunset, main TIB fishers being encouraged to try a logbook) and catch disposal records noting effort component on these reports is voluntary.</p> <p>Given the high level of abundance now, the meeting strongly recommend that a baseline underwater visual survey should be funded soon to estimate absolute abundance. It was noted that this would be expensive immediately but would have ongoing benefits for understanding over future years and may have more benefit than funding a stock assessment.</p> <p>Industry noted the need for monitoring on species composition of catches to validate reporting.</p>
Assessment	<p>Assessment (preliminary, with work to improve) agreed to be run every three years to measure the biomass of the stock relative to the target and adjust the level of Total Allowable Catch. In the intervening years catch and effort data are to be examined (raw or standardised) relative to the long term fishery average. The basket of four species to be assessed together for now. Industry have committed to move towards collecting data on</p>

	the four species (codes for each species) with a view to supporting ability to individual assess each species in future.
Harvest control rule	<p>Agree that if the stock is below the target reference point, catches (TACs) should be adjusted downwards, aiming to build the stock towards the target. Work is to be done on these harvest control rules with suggestions noting a rule is to be further developed to suggest whether the new value departs from an agreed norm e.g. if catch rates drop to 50 per cent of long term fishery average catch rate or the average of the last three seasons or a reference period.</p> <p>As per mackerel, industry agreed that if assessment outcomes suggested increases in 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 level of utilisation. Industry advised a preference for 'banking' these fish to contribute to the biomass and future catch rates rather than harvesting this extra stock.</p> <p>Meeting noted present harvest level of 134.9 t (constant catch) and suggested this level of harvest would be too high and may need a large number of boats to fill, potentially damaging catch rates, causing localised depletion issues.</p>

Other points discussed on coral trout:

- Industry were open to the idea of spawning closures to protect coral trout stocks if necessary e.g. close fishing for a when trout are spawning (noting there is a barramundi spawning closure in place in Torres Strait) though this was not recommended.
- Industry advised that it is challenging to assess and report on coral trout due to commercially sensitive nature of spatial catch data catches occur and the small number of operators fishing commercially for trout, noting AFMA's Information Disclosure Policy and five boat rule.
- The nature of the TIB fishing fleet was noted with varied use of the resource; some fishers work more like full time commercial fishers, others part-time/semi-regular i.e. they might have a job during the week with trout fishing as a second job, other fishers are more opportunistic i.e. may work trout for a spell to make money to pay a bill or just fish the odd weekend or two a year for extra cash.
- Noted that two key areas were used in the trout stock assessment (Zone 3 and Zone 5, **Attachment A**) and industry noted that it would be important to consider the relatively fragile nature of the Torres Strait coral trout stock with small patches of good catch rates surrounded by large areas of poor fish abundance.
- Concern raised by industry that based on AFMA catch-watch report issued 17 May 2019, only a fraction of the Total Allowable Catches available to the TIB sector have been harvested in the 11 months of the season to date. Concern that a total harvest in the order of 134.9 t would impact the sustainability of the stock, would cause localised depletion with lower catch rates and may take up to 30 boats fishing hard to fill this TAC. CSIRO advised that the assessment is preliminary and has not been accepted by management to set TACs noting work is required to refine this assessment. CSIRO advised that the assessment may be over-estimating the numbers and productivity of the resource. Future research should also be consider the observed 'patchiness' of abundance on evaluating the estimates of productivity when assessing the Torres Strait stocks.
- The meeting noted the draft Torres Strait Coral Trout Species Identification Guide (**Attachment B**) and provided some suggested changes to AFMA ahead of circulation to industry. It was noted that this guide is intended as quick reference to support reporting to

the level of the four main commercial species of trout via newly created codes, rather than reporting 'coral trout' as a basket.

Other general points discussed

The group noted that it is challenging to form a harvest strategy based on the current status of the stock against aspirations for how the TIB fleet might want to use the stock in future.

TIB Industry Members expressed a desire to have more opportunities to share knowledge with non-traditional inhabitant fishers accessing the fishery under Sunset Licences. This was noted in the context of reports to the Finfish Resource Assessment Group about mackerel catch rates at Bramble Cay. It was advised that sunset industry member and an invited participant would be attending the next PZJA Finfish Meeting on 27-28 June 2019.

Concerns were raised from TIB sector over the take of barramundi cod from Sunset licence holders. It was suggested that as this is a high value product it could be maintained for the benefit of the TIB sector only. TSRA advised that fishers wishing to lease a sunset licence do pay a premium lease price per kilo for barramundi cod as part of the other reef-line species basket.

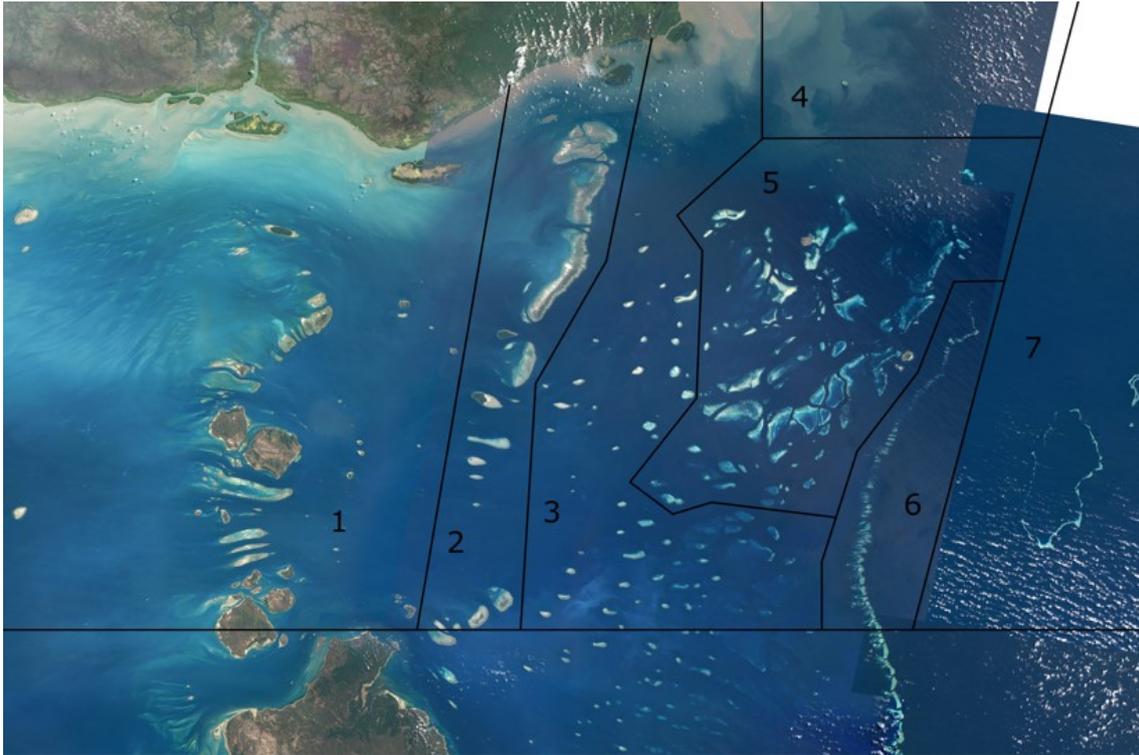
Industry advised that future consideration needed to be given to optimising economic viability of other reef-line species, noting the harvest strategy was to apply to the key economic drivers (trout and mackerel). Industry advised they wanted consideration given to how fishing for reef-line species could be developed through market access and investigating trap fishing methods.

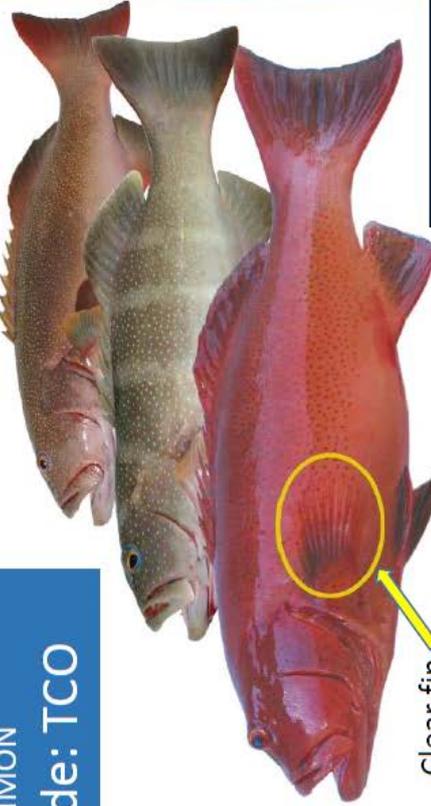
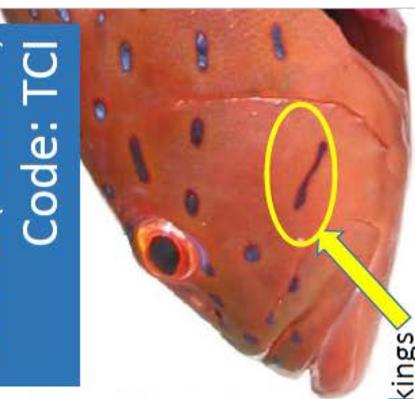
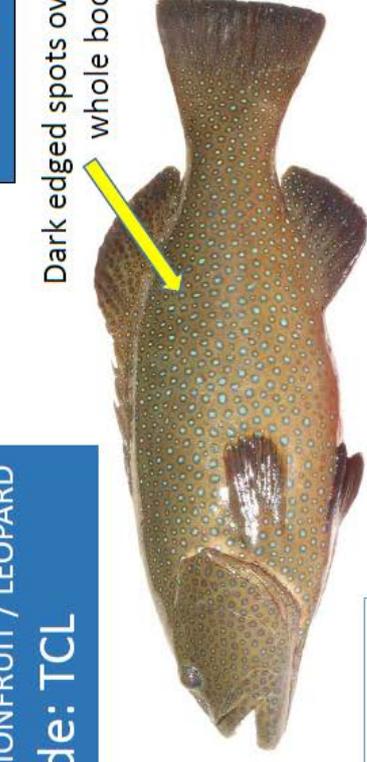
Actions arising

Ahead of the next meeting (27-28 June 2019) it was agreed for the project team to take the following suggestions from industry away for further development:

- Explore 15 per cent change decision rules in other fisheries where there is asymmetry (the rule applies when the recommendation is to decrease the TAC but not when the recommendation is to increase the TAC) and how these rules might apply to setting TACs in this fishery.
- Shorter recovery time approach for Spanish mackerel (e.g. 8 or 10 years for Spanish mackerel instead of 12 years used as a timeframe for building when below B TARG but above B LIM).
- In order for the RAG to explore a CPUE trigger rule for conducting a Coral trout assessment, provide the standardised CPUE over the reference period or a shorter time period (e.g. average of last three seasons). This point was discussed during the meeting and the time frame from 2012-2017 (inclusive) was agreed to.

Attachment A – Map of Torres Strait coral trout habitat zones from 2019 assessment.



<p>COMMON Code: TCO</p>  <p>Clear fin</p> <p><i>Plectropomus leopardus</i>. Minimum size 38 cm Grows to 70 cm and 6 kg</p>	<p>ISLANDER (BAR CHEEK) Code: TCI</p>  <p>Bar markings</p> <p><i>Plectropomus maculatus</i>. Minimum size 38cm Grows to 80 cm and 8 kg.</p>
<p>PASSIONFRUIT / LEOPARD Code: TCL</p>  <p>Dark edged spots over whole body.</p> <p><i>Plectropomus areolatus</i>. Min. size 38cm, Maximum size 62cm Grows to 70 cm and 6 kg.</p>	<p>TORRES STRAIT CORAL TROUT IDENTIFICATION and AFMA REPORTING CODES</p>  <p>Dark fin</p> <p>Juvenile forms</p> <p><i>Plectropomus leavis</i>. Min. size 50 cm, Maximum size 80cm. Grows to 120 cm and 25 kg.</p>



Issued June 2019
Size limits are for commercially landed catch.