Australian Government
Australian Fisheries Management Authority

Tropical Tuna and Billfish Fisheries Resource Assessment Group (TTRAG) 30

Minutes

12 - 13 October 2020

Video Conference

Contents

1 Preliminaries

1.1. Welcome and Apologies

The Chair, Dr Cathy Dichmont, welcomed members and opened the meeting at 9:00am. The following participants were present at the meeting:

Present	
Dr Cathy Dichmont	Chair
Dr Don Bromhead	AFMA member
Dr Rich Hillary	Scientific member, CSIRO
Mr Gary Heilmann	Industry member
Dr Julian Pepperell	Recreational fishing member
Dr Ian Knuckey	Scientific member
Dr Rob Campbell	Scientific member, CSIRO
Dr James Larcombe	Scientific member, ABARES
Mr David Mobsby	Economics member
Mr Pavo Walker	Industry Member
Mr David Ellis	Industry representative invited participant, TTRAG and TTMAC
Invited Participants	
Mr Terry Romaro	Industry invited participant
Observers	
Mr Phil Ravenello	Tuna Australia, Project Manager
Ms Ann Preece	CSIRO
Mr Trent Timmiss	AFMA
Executive Officer	
Ms Natalie Rivero	TTRAG Executive Officer
Apologies (did not attend)	
Mr Paul Williams	Industry invited participant

Apologies were received from Mr Paul Williams prior to the meeting.

1.2. Declaration of Interest

The Chair asked all participants present at the meeting to declare any conflict of interest with the agenda items. Each participant with a declared conflict of interest was asked to leave the teleconference while the remaining members discussed their individual claims. All industry members declared conflicts with agenda items 3, 4 and 5.

Member/participant	Declared Interests
Dr Cathy Dichmont (Chair)	Has a consulting company, but has no pecuniary interests in the tuna fisheries. *No conflict of interest declared.*
Dr Don Bromhead	Employee of AFMA, which includes a salary. Is the Manager of the tropical tuna fisheries. No pecuniary interest in tropical tuna fisheries. *No conflict of interest declared.*
Ms Natalie Rivero	Employee of AFMA, which includes a salary. Is the Executive Officer for TTRAG, but has no pecuniary interest in Australian tropical tuna fisheries. *No conflict of interest declared.*
Mr Gary Heilmann	Industry member, director of a processing company, no longer holds ETBF boat or quota SFRs. *Declared an interest in Agenda items 3, 4 and 5.*
Dr Rich Hillary	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries. Is the PI for the Management Strategy Evaluation (MSE) project for the tropical tuna and billfish species. *No conflict of interest declared.*
Dr James Larcombe	Employee of ABARES, involved in fisheries research, primarily through engagement with the Western Central Pacific Fisheries Commission. Has no pecuniary interest in the Australian Tropical Tuna Fisheries. *No conflict of interest declared.*
Dr Robert Campbell	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries. Is actively engaged in research on the Eastern and Western Tuna and Billfish Fisheries. PI of the following research project: "*Data management, provision of fishery indicators and implementation of the harvest strategies for Australia's tropical tuna fisheries*". *No conflict of interest declared.*
Dr Ian Knuckey	Has a consulting company with interests in electronic reporting in the tuna fisheries, and is a member on several other AFMA Committees. *No conflict of interest declared.*
Mr David Mobsby	Employee of ABARES, involved in fisheries research, as it relates to TTRAG primarily through the economic survey of the Eastern Tuna and Billfish Fishery. Has no pecuniary interest in the Australian Tropical Tuna Fisheries. *No conflict of interest declared.*
Dr Julian Pepperell	Independent fisheries consultant and representative of the recreational fishing sector. Is currently undertaking research into gamefishing. Is involved in projects including the monitoring of fish landed at game fishing tournaments and pop-up satellite tagging on juvenile Black Marlin. *No conflict of interest declared.*
Mr Terry Romaro	Director of a company that owns Eastern Tuna and Billfish Fishery (ETBF) boat statutory fishing rights (SFRs), minor line SFRs, ETBF longline SFRs, Western Tuna and Billfish Fishery (WTBF) boat SFRs,

	WTBF longline SFRs, Western Skipjack Tuna Fishery (WSTF) purse seine permit, Small Pelagic Fishery (SPF) purse seine, mid-water trawl SFRs, and SPF quota SFRs. Shareholder of a company that owns shares in a proposal to fish with foreign longliners in the WTBF. Industry member on Southern Bluefin Tuna (SBT) and Tropical Tuna MAC , Invited participant for TTRAG, and industry representative at the Commission for the Conservation of SBT (CCSBT) & IOTC. Invited participant for squidRAG and squid concession holder. Director of a company who owns a fish processing facility in Port Lincoln. *Declared an interest in Agenda items 3, 4 and 5.*
Mr Trent Timmiss	Employee of AFMA, which includes a salary. Is the Senior Manager of the Tuna and International section. No pecuniary interest in tropical tuna fisheries. *No conflict of interest declared.*
Mr David Ellis	Is CEO for Tuna Australia, and is the managing director of a Fisheries and Aquaculture consultancy company. *Declared an interest in Agenda items 3, 4 and 5.*
Mr Phil Ravanello	Is currently the program manager of the industry association, Tuna Australia. Salary from industry. *Declared an interest in Agenda items 3, 4 and 5.*
Dr Ann Preece	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries. Is the PI for the Management Strategy Evaluation (MSE) project for the tropical tuna and billfish species. *No conflict of interest declared.*
Mr Pavo Walker	Owns several ETBF boat SFRs, and ETBF quota SFRs for all species. Holds a Coral Sea permit and minor line permit. *Declared an interest in Agenda items 3, 4 and 5.*

In all cases where a member, invited participant or observer declared a conflict of interest, the participant left the teleconference. The remaining members unanimously agreed they were permitted to participate in the item of discussion, noting the expertise of the individuals and benefits of these members contributing to discussions.

1.3. Adoption of Agenda

The draft meeting agenda circulated on 28 September 2020 and accepted by TTRAG, as detailed in Appendix 1.

At the beginning of the meeting, the order in which agenda item discussion was revised to allow for Dr Robert Campbell (scientific member) to be in attendance to present key agenda items (with the original numbering of items retained). The agenda items were discussed in the order of:

1, 2, 5.1, 6.1, 3.1, 3.2, 3.3 (ETBF fishery indicators), 3.4, 3.3 (Outcomes of Swordfish harvest strategy), 4.1, 6.2, 6.3.

Day two of the meeting was focused on the drafting of TTRAG TACC advice for both the ETBF and WTBF.

Please note: The minutes below are reported in order of the original agenda numbering (not the order they were presented).

1.4. Adoption of Minutes

The TTRAG noted that minor editorial comments were received from Mr Phil Ravenello prior to the meeting and they had been incorporated into the draft TTRAG 29 minutes.

The TTRAG adopted the TTRAG 29 minutes without further amendment.

1.5. Actions Arising

The RAG noted the status of action items from previous meetings (Table 1). Given the short time period (4 weeks) between meetings, the RAG focused the discussion on items that had arisen from TTRAG 29. The comments from the RAG on the actions arising can be found at (Table 1).

A summary of actions arising from this meeting is included at Appendix 2.

Table 1. Status of actions arising from previous TTRAG meetings.

	Action	Meeting raised	Responsibility	Status at TTRAG30	Discussion at TTRAG 30
1	**Estimating Recreational Catch:** AFMA to contact NSW fisheries for the charter boat logbook data. Dr Julian Pepperell with contact Danielle Ghosn to see what recreational club data she can provide.	TTRAG 14	AFMA/Dr Julian Pepperell	ONGOING: Dr Pepperell informed TTRAG that the work is being finalised and he will do a presentation at the October meeting.	As noted, no discussion.
2	**Quota zones:** 1. AFMA and CSIRO to prepare a paper that includes information from the harvest strategy, stock status information, the CSIRO MSE analysis and connectivity review assess sustainability issues in implementing inshore and offshore quota zones for swordfish. 2. AFMA suggested contacting John Annala from New Zealand Ministry of Primary Industries to see if New Zealand would be interested in supporting the swordfish project and investigate the potential of New Zealand providing some funding. 3. AFMA to follow up with Karen Evans of CSIRO to determine exactly how many swordfish samples would be required from each zone to satisfy an adequate sampling design, for	1. TTRAG 15 2. TTRAG 19 3. TTRAG 19	AFMA/CSIRO	ONGOING: Action items had previously been put on hold with agreement from industry pending issues with funding. The ETBF genetics project by CSIRO is being finalised next year with the second set of swordfish samples, Dr Karen Evans will do a presentation for the RAG. Neither AFMA nor industry has prioritised moving this item further.	As noted, no discussion

	Action	Meeting raised	Responsibility	Status at TTRAG30	Discussion at TTRAG 30
	each inshore, offshore and potential western New Zealand. David Ellis to also work with AFMA to assist in sourcing offshore samples and possible funding from the ETBF.				
3	ABARES to touch base with SPC staff to discuss the inclusion of NSW recreational tagging data in the SPC tagging database.	TTRAG 19	ABARES	ONGOING: Dr Campbell will provide background information to Dr Larcombe and Dr Pepperell will pass on relevant contact information (Phil Bolton and Brian Van der Wahl at NSW DPI).	As noted, no discussion

	Action	Meeting raised	Responsibility	Status at TTRAG30	Discussion at TTRAG 30
4	**CPUE analyses:** Dr Campbell to contact ABARES scientists regarding their 'clustering' analyses work to determine if it may provide insights for improving the CPUE analyses (and vice versa).	TTRAG 21 TTRAG 22	Dr Robert Campbell CSIRO ABARES	ONGOING: This work is still being progressed noting a change in staff working on it at ABARES	As noted, no discussion
5	**FMS Data Strategy:** AFMA to begin a logbook review with industry and Dr Campbell to determine if there should be any amendments in logbook data fields (including those discussed at TTRAG21). AFMA will report progress at the next TTRAG meeting.	TTRAG 21	AFMA industry/Dr Campbell	ONGOING: The AFMA member noted that this is an ongoing process with internal work underway at AFMA.	As noted, no discussion
6	Dr Campbell will look to explore potential changes in fishing practices (particularly with the start of set location) associated with the introduction of Marine Parks, and determine potential implications for CPUE standardisations.	TTRAG 23	CSIRO	ONGOING: Dr Campbell noted he needs to obtain the specific boundaries of the marine parks and then will pass onto whoever takes on the work.	As noted, no discussion

	Action	Meeting raised	Responsibility	Status at TTRAG30	Discussion at TTRAG 30
7	AFMA to determine how EM are recording heads that are brought up on board and report back to TTRAG with a short discussion paper including data collection options after consultation with AAP.	TTRAG 23	AFMA	ONGOING: AFMA to investigate increased EM review costs with AAP and will have discussions with industry outside the RAG The AFMA member confirmed that EM footage is only retained for 6 months unless it is flagged for a compliance investigation or historical purposes	As noted, no discussion

	Action	Meeting raised	Responsibility	Status at TTRAG30	Discussion at TTRAG 30
8	**Understanding of fishing depths** TTRAG to consider whether a research priority is required to address the uncertainty around changes in fishing practices, particularly for monitoring fishing depth. 1- AFMA to seek to include the following data fields into future ETBF e-logs - Vessel log speed (important distinction from vessel speed), Shooter speed, and bubble dropper length.* 2- TTRAG to consider development of TDR based research and/or data collection in the ETBF to better understand and account for (in CPUE analyses) the relationship between fishing strategies (including vessel log speed, shooter speed and dropper lengths etc) and fishing depth.** *moved from item 18 **moved from item 20	TTRAG 23	AFMA	ONGOING: This item was discussed under agenda item 5 at TTRAG29. Phil Ravenello noted that Tuna Australia will be purchasing time depth recorded for another project and there is potential for these to be used in this project. AFMA will make the required changes to the logbooks.	As noted, no discussion

	Action	Meeting raised	Responsibility	Status at TTRAG30	Discussion at TTRAG 30
9	AFMA to examine VMS data to check and verify sets reported on logbooks as having mainline lengths greater than 100km. TTRAG to consider frequency distributions of values for all factors used in CPUE standardisations and provide advice regarding the removal of outliers.	TTRAG 24	AFMA/ TTRAG/ Dr Campbell	ONGOING: Not yet actioned. These items were combined from previous action items 13 and 14.	As noted, no discussion
10	AFMA to review the background basis for differing CDR conversion factors used by CSIRO and AFMA.	TTRAG 24	AFMA	ONGOING: no additional comments.	As noted, no discussion
11	Dr Preece to provide TTRAG members with an update of the MSE scenarios and settings to be explored in the preliminary MSE analyses at the October meeting.	TTRAG 29	CSIRO (Dr Preece)	ONGOING: Dr Preece provide an update at TTRAG30	This item was discussed further under Agenda item 5.1
12	AFMA to revise the WTBF Indicators template to include subregional IOTC information, recreational fishery information, summary statements and historic catch trends for foreign fishing in the EEZ.	TTRAG 29	AFMA	ONGOING: AFMA will look to incorporate TTRAG's suggestions in future WTBF indicators papers.	As noted, no further discussion.

	Action	Meeting raised	Responsibility	Status at TTRAG30	Discussion at TTRAG 30
13	ABARES (David Mobsby) to update the economic indicators paper by a) developing species specific economic conditions indicators (with CSIRO to provide CPUE data by financial year); b) including fresh/chilled SBT price trends; c) including the % of species catch by product type to each market; d) working with Gary Heilman to include introductory description of how the ETBF operates in the market.	TTRAG 29	ABARES (David Mobsby)	ONGOING: Mr Mobsby to provide an update at agenda item 3.2.	COMPLETE: Mr Mobsby informed the RAG that all items (with the exception of working with Gary Heilman to include introductory description of how the ETBF operates in the market) have been included in the updated ETBF economic indicators paper under Agenda item 3.2
14	A small working group of AFMA, CSIRO, David Mobsby and Gary Heilman to incorporate economic indicators data, as specified by TTRAG29, into the TACC indicators advice paper, for TTRAG30.	TTRAG 29	AFMA/CSIRO/ David Mosby	ONGOING: AFMA and Mr Mobsby to provide an update during the TACC advice discussion at TTRAG 30.	The RAG noted economic advice would be discussed under item 3.2

	Action	Meeting raised	Responsibility	Status at TTRAG30	Discussion at TTRAG 30
15	In relation to new logbook fields: a. AFMA to implement agreed new data fields in logbooks relating to fishing depths, line weighting and hooks (size and type). b. AFMA to determine why vessel shooting speed field was not available in data provided to CSIRO by AFMA. c. TRAG to give further consideration to additional potential fields, specifically, those required by WCPFC logbooks and ROP, fields relevant to collecting data on depredation, and shape of mainline set. d. AFMA to explore the possibility of collecting "hook number" information for protected species interactions via electronic monitoring	TTRAG 29	AFMA/TTRAG	ONGOING: AFMA will continue to progress updating fields in the logbook as discussed by TTRAG.	As noted, no further discussion.
16	In relation to the ETBF data dictionary: a. CSIRO to provide AFMA with a copy of the CSIRO Tuna Legacy Data as described in the Data Dictionary. b. AFMA (Natalie Rivero) to provide more details for the ADC line tables to CSIRO (Dr Campbell)	TTRAG 29	AFMA/CSIRO	ONGOING: AFMA will progress with CSIRO out of session.	ONGOING - The RAG noted the item will be progressed out of session and it was agreed to remove Dr Campbell's name from this item and note any further work on this item will be between AFMA and CSIRO.

Table 2. Status of annual action items

	Action	Next Discussion	Responsibility	Status as of TTRAG 24	TTRAG 30 discussion
1	Review, update and input TTRAGs suggestions into the fishery events spreadsheets	TTRAG 29 – September 2020	AFMA to prepare updated draft	ONGOING: The significant events spreadsheet will be discussed under Agenda item 6.2	As noted, no further discussion.

1.6. Out of session Correspondence

The TTRAG noted the out of session correspondence between the TTRAG 29 and TTRAG 30 meetings.

2 Review of Fishery Performance

The AFMA member noted that the purpose of this agenda item was to provide RAG members with an opportunity to give an update on fishing conditions or other matters since TTRAG29. Given the short time period since the last meeting, the items normally covered under this agenda item (catch and effort data, international and local meeting summaries etc.) were not presented.

The RAG noted the following updates from Mr David Ellis:

- That the application for project funding from Parks Australia submitted by Tuna Australia has been unsuccessful. The proposed project was looking to address wildlife interactions in the fishery and Tuna Australia will be looking at other avenues to have the project funded.
- That the east coast SBT season is nearing its conclusion with ~800 t caught.

The RAG noted the following updates from Dr Julian Pepperell (recreational member):

- There have been early indications of good recruitment of juvenile Black Marlin in southern QLD and NSW.
- The heavy tackle season in Cairns, which traditionally runs between September and October, has had very few boats fishing due to cancellations arising from travel restrictions under the Covid-19 pandemic.
- There has been a successful Shark fishing tournament in Wollongong with mostly Mako and Tiger sharks tagged and released. Interestingly, a common thresher shark was caught during the tournament which is rarity for the recreational catching sector.

3 Fishery indicators

Under this agenda item, the RAG was provided with four key ETBF papers and one WTBF paper to discuss. These were:

- *"South West Pacific Data- update" (Agenda item 3.1, presented by Dr Robert Campbell)* that summarises the spatial and temporal trends in total annual catch within an area of the south-west Pacific for each of the five principal target species within the ETBF.
- "*Fishery economic indicators – Eastern Tuna and Billfish Fishery" (Agenda item 3.2, presented by Mr David Mobsby*) that summarises the economic indicators for the principal target species within the ETBF as well as SBT caught by the longline sector on the east coast.
- *"ETBF Fishery indicators- species summaries" (Agenda item 3.3, presented by Dr Rich Hillary)* that summarises fishery indicators for each of the five principal target species within the ETBF.
- *"Swordfish Harvest Strategy calculations" (Agenda item 3.3, presented by Dr Rich Hillary)* that summarises the outcomes of the Swordfish harvest strategy and resulting RBCC calculation.
- *"WTBF Fishery indicators- species summaries*" (Agenda item 3.4) that summarises fishery indicators for each of the four principal target species in the WTBF.

TTRAG noted that they were also required to update and finalise the TTRAG TACC advice for both the ETBF and WTBF 2021 season to TTMAC and the AFMA Commission.

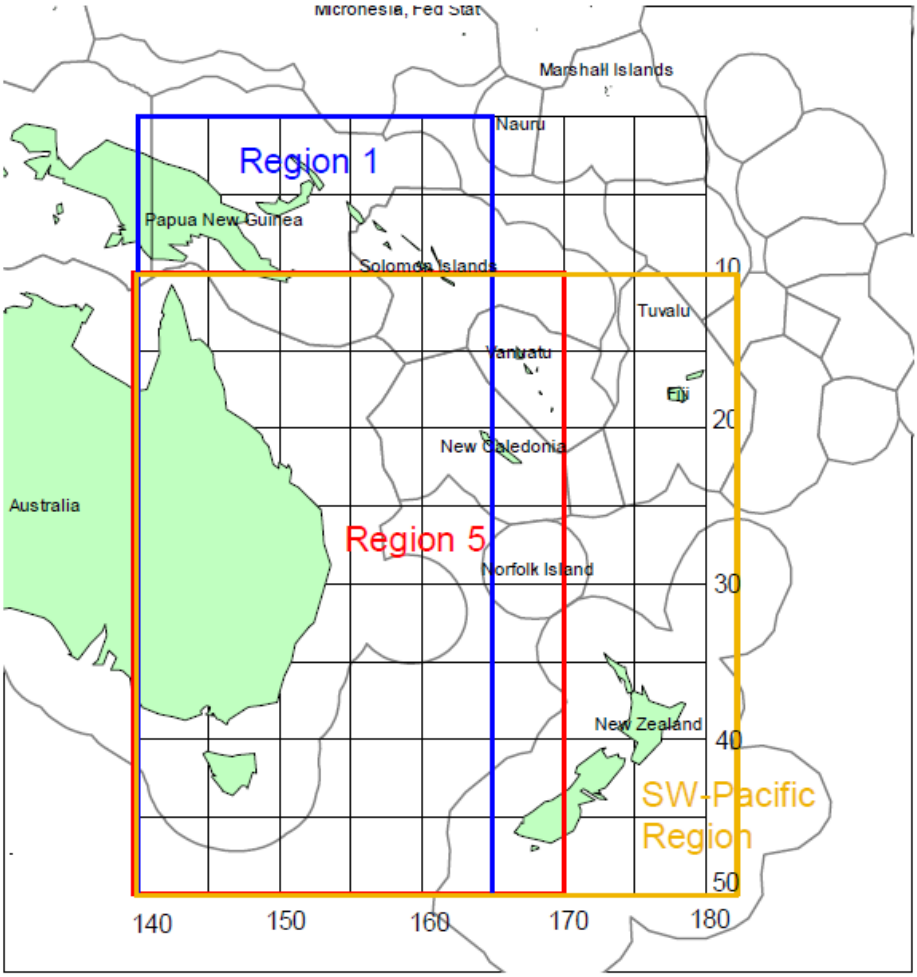
TTRAG determined that it would make sense to provide advice on a species by species basis. As such, the key elements from each paper as they were presented have been summarised below within the heading for the relevant species alongside the RAGs discussions.

Economic conditions in the ETBF (for the fishery as a whole) have been summarised under the ETBF economics indicators heading and species specific economic information is provide under the relevant species heading.

The final advice from the RAG is contained in the ETBF and WTBF TACC advice paper to the AFMA Commission and TTMAC (**Attachment A and Attachment B, respectively**).

Note: the regions referred to below which respect to WCPFC catches (R1 for billfish and R5 for tunas) are defined in the following map.

Figure 2. Map showing the boundaries of the three regions used in the analyses described in this paper. The boundaries associated with the exclusive economic zones for the nations within this region are also shown. Region-5 is used for the three tuna species, Region-1 is used for the two billfish species, while the SW-Pacific region is used for all species.



3.1, 3.2, 3.3 ETBF fishery indicators

Economic Indicators

In relation to the economic conditions for the ETBF, TTRAG noted that:

- The information prepared for the RAG now includes export data and information on a species by species basis. Dr Campbell has provided CPUE data for each species and that has been incorporated into each species specific economic index.
- The GVP for the ETBF reached an 11 year high of $51.1 million in 2015-16. The decline in GVP between 2015-16 and 2018-19 was largely the result of lower Yellowfin Tuna and Bigeye Tuna production value.
- The weighted average price of fish caught in the ETBF trended upwards between 2007-08 and 2016-17, but declined between 2016–17 and 2018–19.
- The squid import price (a proxy for bait price) averaged its highest in 2017–18 (which was more than twice the average price paid in 2007–08).

- Non-survey-based estimates of Net Economic Returns (NER) for 2018–19 indicate a 24% reduction to $3.8 million, largely reflecting income falling more than fishing costs.
- Included in the economic summary is the SBT economic condition index (that excludes SBT from the farm sector) which has been highly favourable and correlated to higher CPUE.

TTRAG discussed the importance of SBT caught on the east coast to economic conditions of the fleet given it is now part of the business model for many ETBF operators. It was noted that the overall GVP of the fishery would better reflect how ETBF operators are tracking if the SBT catch is included. It was suggested both total ETBF economic conditions, and total ETBF economic conditions with east coast caught SBT included, are provided in future summaries to assist the RAG in providing advice on the economic performance of the fishery.

ACTION ITEM: Mr David Mobsby to include overall ETBF GVP, with and without SBT catch, in future economic condition summaries to TTRAG.

ETBF Yellowfin Tuna

Stock Assessment

- While there has been a new assessment in 2020, it is yet to be ratified by the WCPFC. Therefore the 2017 assessment has been referred to in TTRAG's summary of indicators for Yellowfin Tuna.
- The range of fished-to-unfished spawning biomass ratio was 0.18-0.45 with a median (across the swathe of different runs in the uncertainty grid) of 0.33.
- The range of the MSY fishing mortality ratio was from 0.58-1.13 with a median of 0.78 and a (very approximate given 48 runs in the grid) probability of around 0.05 of the ratio being above 1 (i.e. overfishing is occurring).
- Fishing mortality has increased continuously (since major fishing operations began post-war) on both juveniles and adults.
- Recent recruitment has been estimated to be above average.

Region 5 catches

In relation to Yellowfin tuna catch trends in Region 5, TTRAG noted:

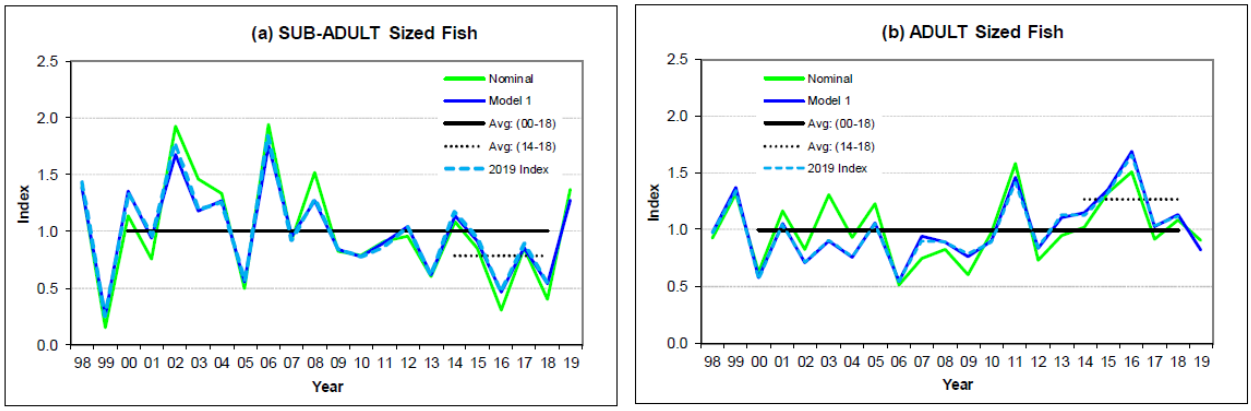
- ETBF catches accounted for 18.1% of longline catch and 17% of total catch. This was consistent with the mean five year (2015 - 2019) average longline catch of 18.7% and higher that the mean five year average total catch of 13.1%.

ETBF CPUEs

In relation to the standardised CPUE for Yellowfin Tuna (Figure below), the paper highlighted:

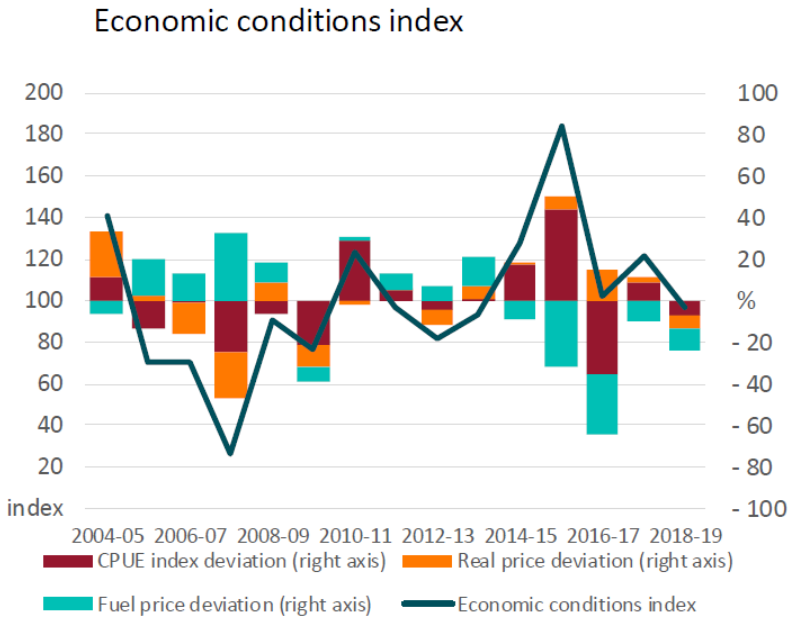
- The sub-adult index recent five year (2014 - 2018) average is below the long-term average and the overall decadal trend is slightly downwards.
- The adult index recent five year average is above the long-term average while the overall decadal trend is very slightly upwards.

Figure YFT-4. Annual nominal and standardised CPUE indices for each size class of Yellowfin Tuna and comparison with the mean over the previous five years and since 2000.



ETBF economic conditions for Yellowfin Tuna:

- The economic conditions index for Yellowfin Tuna has fallen in 2018-19 largely driven by GVP and price.



TTRAGs final advice to TTMAC and the AFMA Commission regarding Yellowfin Tuna in the ETBF is drafted and included in **Attachment A.** Some points discussed by TTRAG were:

- In relation to CPUEs, a question was raised as to whether the drop in the CPUE sub-adult index in the 2016 fishing year was attributed to discards. Dr Campbell explained that the standardised CPUE doesn't account for discards due to lack of information on the size classes of discarded species.
- It was noted that discards are allocated to the different size classes using historical observer data and the RAG has previously discussed how the RAG could get better size estimates of discarded species. With respect to the 2016 CPUE, the RAG noted a plausible explanation for the sub-adult decline could be due to the strong adult cohort that was observed in the same year.

- In formulating the TACC advice, the RAG noted that ETBF Region 5 Yellowfin catch has been increasing since 2014 and that domestic CPUE indicators show a decrease in adult CPUE and increase in sub-adult CPUE in 2019 but no trend in overall CPUE.

ETBF Bigeye Tuna

Stock Assessment

- Last full assessment was in 2017.
- The range (80% CI) of fished-to-unfished spawning biomass ratio was 0.3-0.41 with a median value of 0.36. None of the estimated runs were below a depletion level of 0.2.
- The median estimates of the MSY fishing mortality ratio was 0.77 with an 80% CI range of 0.67-0.93 and approximately 5% of the runs greater than 1 (so very low probability of over-fishing occurring).
- The as yet to be adopted 2020 assessment results are broadly consistent with the 2017 results

Region 5 Catches

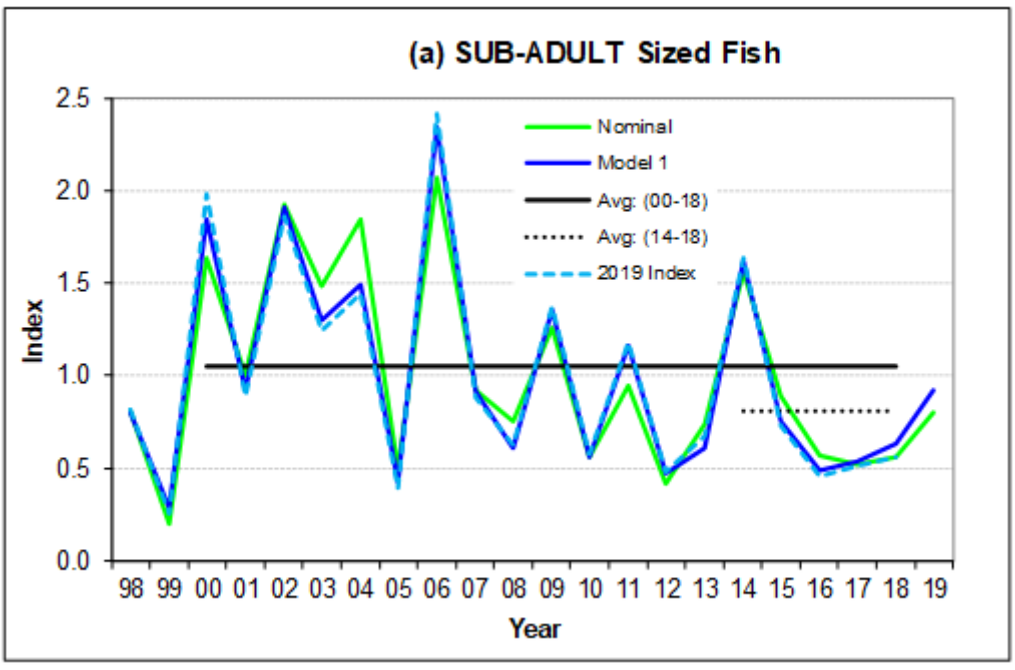
In relation to Bigeye tuna catch trends in the Region 5, TTRAG noted:

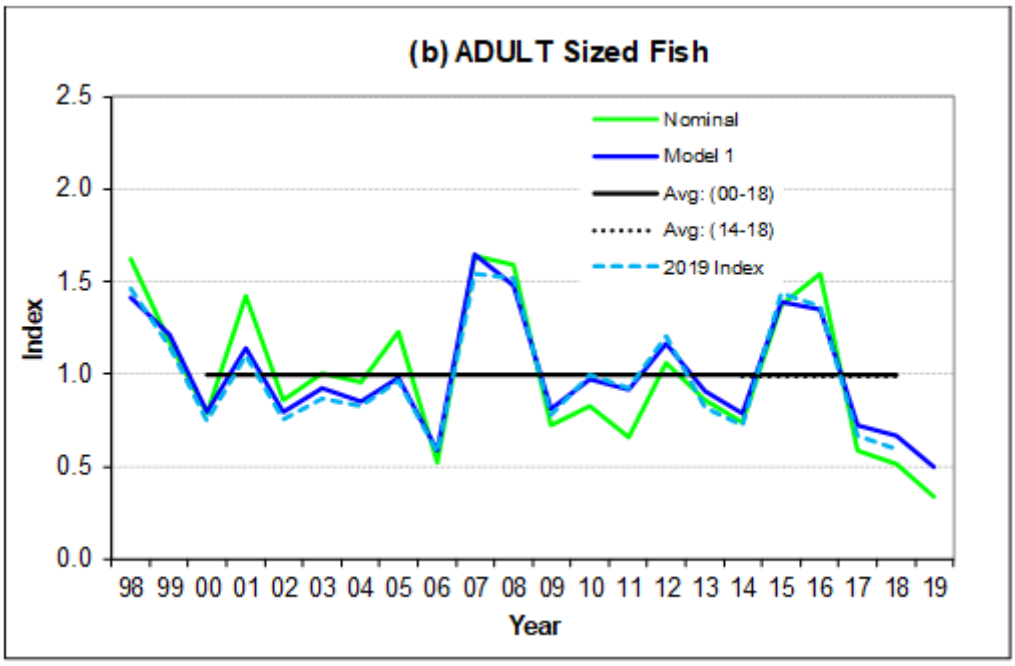
- ETBF catches accounted for 14.1% of longline catch and 13.7% of total catch which was lower than the mean five year (2015 – 2019) average catch of 27.6% and 24.9% respectively.

ETBF CPUEs

In relation to the standardised CPUE for Bigeye Tuna, the paper highlighted:

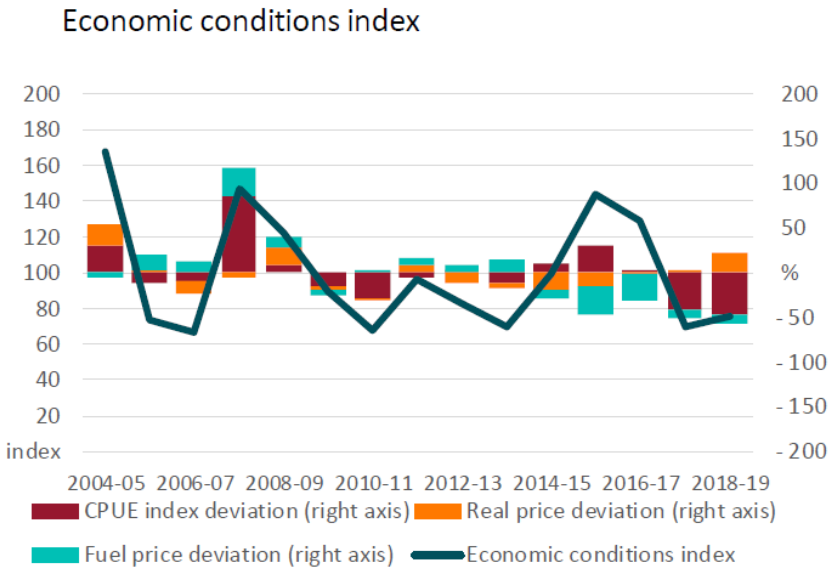
- For the sub-adult index, the recent 5 year (2014 - 2018) average is below the long-term average, albeit without obvious 5 or 10 year trends. For 2019 however, there is a significant increase in the sub-adult index (shown in the figure below).





ETBF economic conditions for Bigeye Tuna:

- A major driver of economic conditions for Bigeye Tuna in recent years has been lower CPUE but prices have improved. The US is a significant market for Bigeye Tuna.



TTRAGs final advice to TTMAC and the AFMA Commission regarding Bigeye Tuna in the ETBF is drafted and included in **Attachment A.** Some points discussed by TTRAG in finalising the advice paper included:

- With respect to the assessment results for Bigeye Tuna, a question was raised as to whether a MEY reference point should be referred to in the Australian context to be consistent with the guidelines of the Commonwealth Harvest Strategy (CHS) policy.

- It was noted that the CHS provides guidance for situation where a stock is managed in the international context. As the WCFPC uses a MSY reference point for fishing mortality, it was agreed that the WCPFC reference point should be noted in the RAG's advice.

ETBF Albacore Tuna

Stock Assessment

In relation to Albacore tuna stock assessment, TTRAG noted:

- The last assessment was in 2018 with no major changes in the indicators in 2019.
- The range (80% CI) of fished-to-unfished spawning biomass ratio was 0.37-0.63 with a median (across the swathe of different runs in the uncertainty grid) of 0.52 with zero none of the 72 models estimating a depletion level lower than 0.2.
- All the 72 runs estimated the ratio of Frecent/Fmsy to be less than 1 (no overfishing).

Region 5 Catches

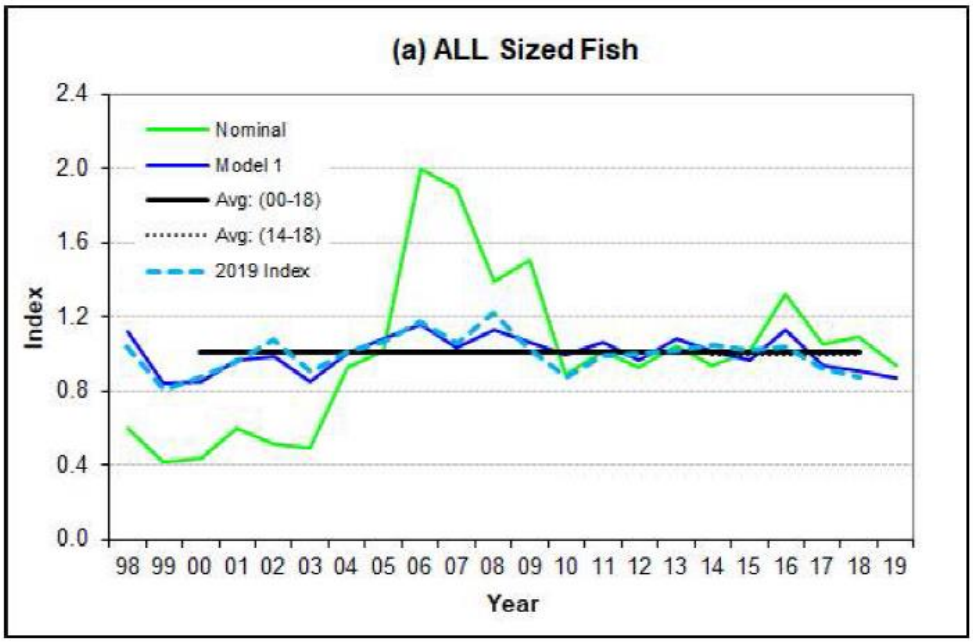
In relation to Albacore tuna catch trends in the Region 5, TTRAG noted:

- ETBF catches accounted for 5.6% of longline catch and 5.5% of total which was consistent with the mean five year average catch (2015 – 2019) of 6.3% and 6.2% respectively.

ETBF CPUEs

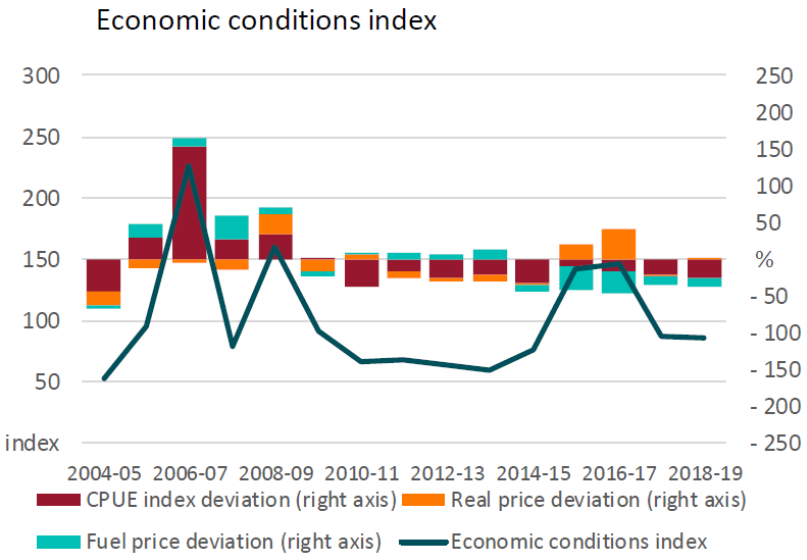
In relation to the standardised CPUE for Albacore Tuna, the paper highlighted:

- In terms of the ETBF standardised CPUE index (only one is produced for the whole catch size range) the recent (2014 - 2018) mean was the same as the long-term mean; there was no obvious recent trend at either the 5 or 10 year levels.



ETBF economic conditions for Albacore Tuna:

- Prices for Albacore Tuna have fallen below average in the last few years. Unlike other species, Albacore Tuna has a much more diversified export market.



TTRAGs final advice to TTMAC and the AFMA Commission regarding Albacore Tuna in the ETBF is drafted and included in **Attachment A.** Some points discussed by TTRAG in finalising the advice paper included:

- Noted that there have been fewer (less than 50) Albacore Tuna tagged in recreational tagging studies which is significantly lower than previous years.
- Overall, there are no notable changes in the indicators for Albacore with domestic catches being relatively steady over the past 10 years.

ETBF Swordfish

Stock Assessment

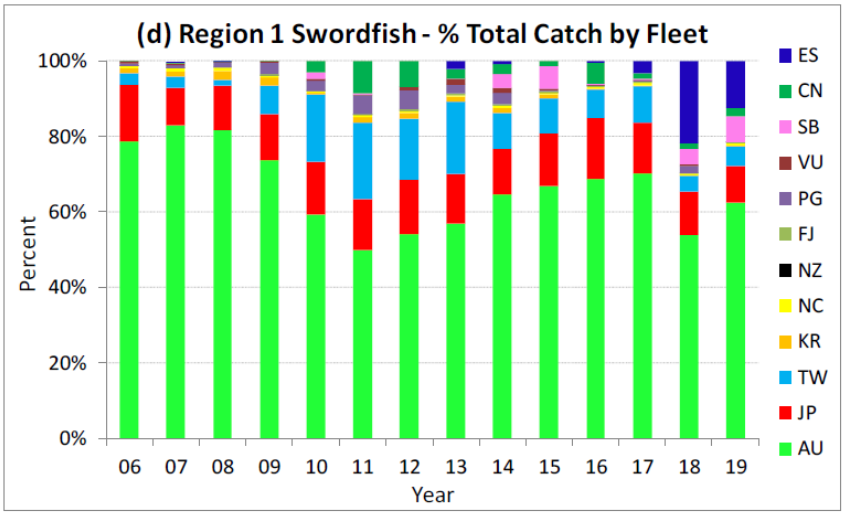
In relation to Broadbill Swordfish stock assessment, TTRAG noted:

- The last assessment was in 2017 and showed the range (across the uncertainty grid) of fished-to-unfished spawning biomass ratio was 0.26-0.49 with a median value of 0.35. None of the estimated runs were below a depletion level of 0.2. Only 11% of the runs had an estimated SSB MSY ratio less than 1, so a low probability of over-fishing.
- The median estimates of the MSY fishing mortality ratio was 0.86 with a range of 0.42- 1.46 and approximately 30% of the runs indicated over-fishing (a ratio greater than 1) and were almost always associated with the lowest steepness value of 0.65.

Region 1 Catches

In relation to Swordfish catch trends in Region 1, TTRAG noted:

- ETBF catches accounted for 62.4% of both longline catch, and total catch which was consistent with the 64.4% longline catch and total catch five year average. It was noted that Region 1 Swordfish catch is predominately taken by longline method with Australian catch accounting for a significant proportion (as shown in the figure below).



- The 2019 catch of Broadbill Swordfish in the ETBF represents 39.2% of the provisional total catch of Broadbill Swordfish within the South-West Pacific (10-50ºS, 140oE-175ºW), averaging 33.3% over the previous five years 2014-2018, and 37.1% over the fifteen-year period 2006 - 2019 with a maximum during this latter period of 52.4% in 2006.
- TTRAG also noted that Australia's share of the longline catch has fallen in the last 2 years since 2014, while the ES catch has significantly increased.

ETBF CPUEs

In relation to the standardised CPUE for Swordfish, the paper highlighted:

- There are three standardised indices for Swordfish (recruits, sub-adults and adults).
- The recent (2014 - 2018) mean value of the recruitment index was below the average, and the sub-adult index recent average value is slightly below the long-term mean and both the 5 and 10 year trends are downwards.
- The adult index recent mean value is slightly above the long-term average and both the 5 and 10 year trends are fairly flat. The table below shows the summary of the annual CPUE indices for each size class.

Table SWO-1 Trends in the annual standardised CPUE indices for each size-class of Broadbill Swordfish based on the results from the Model 1 GLM.

	Recruit	Sub-Adult	Adult	All
2019 vs Past-5	53%	-22%	-12%	6%
2019 vs Past-10	28%	-34%	-12%	-7%
2019 vs avg(00-18)	25%	-30%	-5%	-4%
Past-5 vs Past-10	-17%	-15%	0%	-11%
Past-5 vs avg(00-18)	-18%	-10%	9%	-9%

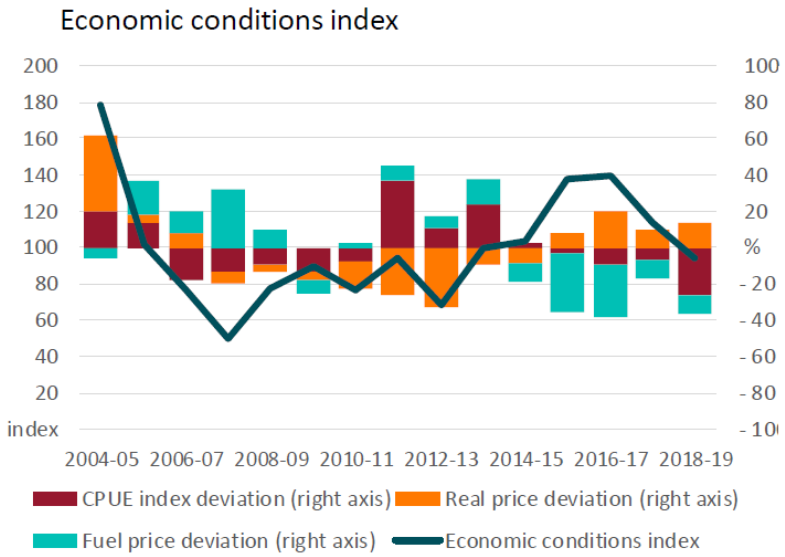
ETBF Harvest Strategy Outcomes:

- The mean sub-adult standardised CPUE for the years 2016 – 2019, correctly rescaled by the mean of the 1998-2018 index used in the MSE work, was 0.7582375. This is below the lower buffer of 0.8 in the HCR which means a decrease in the RBCC will be the result.

- The actual value of the **RBCC multiplier is 0.9304** - around a 6% predicted reduction and less than the maximum 10% value permitted. With the previous TACC of 1,250 tonnes, this results in a proposed **RBCC of 1,163 tonnes.**

ETBF economic conditions for Swordfish:

- With respect to exports, the dominant market for Swordfish is the US. In 2018- 19 during Jan to April, a quite volatile exchange rate was observed that was lower than the five year average.
- The squid import price (a proxy for squid bait price) averaged its highest in 2017–18 (which was more than twice the average price paid in 2007–08). This is a notable indicator for Swordfish given the use of squid bait in Swordfish targeting.



TTRAGs final advice to TTMAC and the AFMA Commission regarding Swordfish in the ETBF is drafted and included in **Attachment A.** Some points discussed by TTRAG included:

- With respect to CPUE indices;
    - A question was raised as to what the information that was taken into account, particularly around changes in bait usage and whether the indices are adequately reflecting those changes. Dr Campbell explained that bait usage is taken into account in the standardisations. It was further noted that the reduction of squid bait usage due to increased prices would be noted in the information provided on economic indicators in TTRAG's advice.
    - the RAG noted that the four year mean sub-adult CPUE index used in the MSE work, differs from the four year mean sub-adult CPUE index used in the 2021 Harvest Strategy calculation. This is due to the annual adjustment of including new data (in this case the 2019 data).
    - It was noted that how the index is calculated and applied should be made clearer in explanation of the harvest control rule (within the ETBF FMS where the Swordfish harvest strategy is described) to avoid confusion as it could be interpreted as a fixed target reference point rather that a target reference zone that is not static year to year.
- With respect to catches outside of the ETBF;

- the key WCPFC statistical area region of significance for Swordfish in the ETBF is Region 1.
- a question was raised as to whether the 2019 data used in the CPUE index applied to the harvest strategy accounts for the international catch that influences the ETBF. It was noted that catches by other fleets would ultimately impact the underlying species abundance, which the CPUE index captures, and therefore international catch would be accounted for in the standardisations. It was further explained that international catch is also noted alongside the results of the harvest strategy and international catch in our region in 2019 has declined, in particular for the Spanish fleets that the RAG has focused on before.

- In formulating the TTRAG TACC advice, that:
  - the GVP contribution proportion of Swordfish to the overall GVP of the ETBF with a description of the Swordfish economic conditions index should be added to show there has been a decline in both catch and landed price.
  - updated information on recent recreational catches should be sourced and included.
  - no exceptional circumstances (that the Swordfish harvest strategy requires TTRAG check) have been met and therefore the RBCC was supported. In particular, the RAG noted the proportion of ETBF catch in Region 1 was consistent with the five year average ETBF catch for the region. As Region 1 international catches have reduced in 2019, the catch share of the ETBF relative to the international fisheries is not too low to justify the application of the harvest strategy and full implementation of the RBCC as TACC.
  - comment should be added to describe where the largest catches are taken in the WCPFC statistical area. Overall within the TACC advice, the RAG agreed to significantly reduce the description of CPUE indices, domestic catches, and stock status from last year's advice on Swordfish given there are now harvest strategy outcomes to report on.

ACTION ITEM: Dr Rich Hillary to clarify the explanation within the ETBF FMS commercial species chapter of how the mean CPUE index is applied the harvest control rule in the Swordfish Harvest Strategy.

ACTION ITEM: Dr Julian Pepperell to contact Dr Sean Tracey to get updated information on recent recreational catches.

ETBF Striped Marlin

Stock Assessment

In relation to the Striped Marlin stock assessment, TTRAG noted:

- Striped marlin were last assessed in 2019. The range of the MSY fishing mortality ratio was from 0.03-3.5 with a median of 0.91 so very uncertain and with an appreciable number of runs estimating that significant over-fishing is occurring.
- The South-West Pacific Striped Marlin stock is likely overfished and close to undergoing overfishing.

Region 1 catches

In relation to Striped Marlin catch trends in Region 1, TTRAG noted:

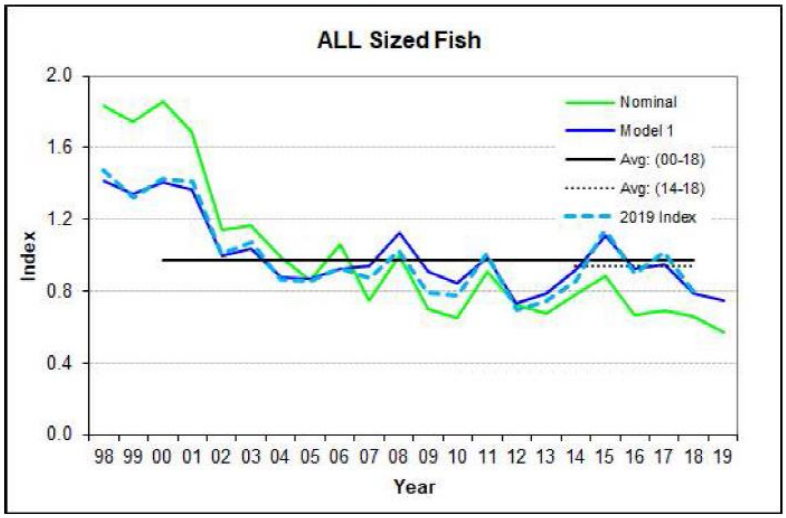
- ETBF catches accounted for 63.3% of longline catch and 63.3% of total commercial catch which was consistent with the mean five year average catch of 64.2% for both longline catch and total commercial catch.
- With recreational catch included, ETBF accounts for 47.8% of total recreational and commercial catch, slightly lower than the 51.9% observer in 2018 but consistent with the 49.7% mean five year average.

ETBF CPUEs

In relation to the standardised CPUE for Swordfish the paper highlighted:

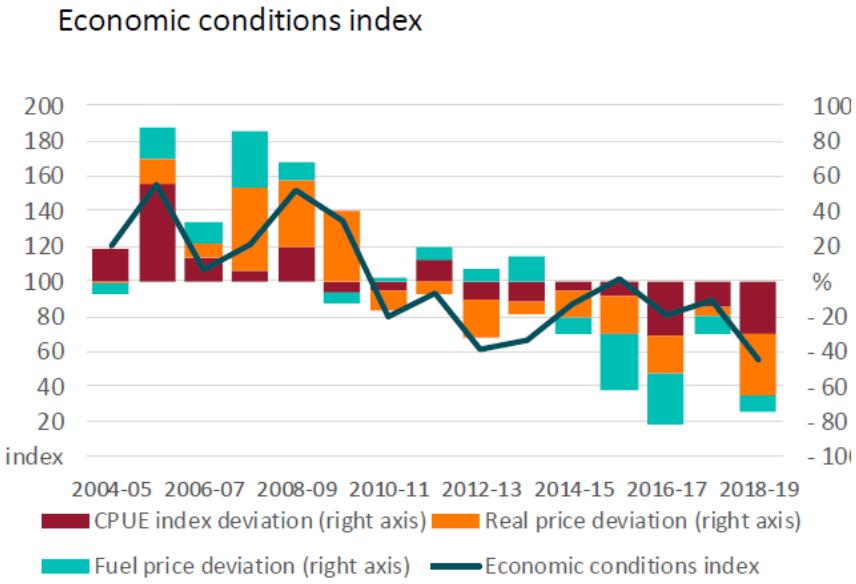
- In terms of the ETBF standardised index (there is only one index for the whole catch): the recent (2014-2018) average is essentially the same as the long-term average; the recent 5 year trend is slightly downwards; and the recent 10 year trend is basically flat (as shown in the figure below).

Figure STM-4. Annual nominal and standardised CPUE indices for the ALL size class of Striped Marlin and comparison with the mean over the previous five years and since 2000.



ETBF economic conditions for Striped Marlin:

- There is no export data for Striped Marlin. Lower prices are the main driver of the reduced economic index for the species.



TTRAGs final advice to TTMAC and the AFMA Commission regarding Striped Marlin in the ETBF is drafted and included in **Attachment A.** Some points discussed by TTRAG in finalising the advice paper included:

- That the inclusion of catch from the recreational sector with a description of assumed mortality for tagged and released fish should be added to the RAG's advice.
- Whether there is information available on state catches available for including in the RAG's advice. It was noted that historically AFMA has attempted to source state commercial catch information without success.

3.4. WTBF Indicators

Dr Bromhead presented the summary paper on the indicators for the WTBF, noting that the AFMA Commission have previously requested that TTRAG provide an indicators paper to support Commission decisions on WTBF TACCs, in the same manner that TTRAG provides an indicators paper to inform Commission decisions on ETBF TACCs.

The RAG noted that in their previous review of a draft WTBF indicators paper, they suggested a number of changes to the paper, not all of which had been made in the current version but would be made in the future. It was also noted that the RAG was required to develop TACC advice (the final TTRAG advice is provided at **Attachment B**). The summary of key points and RAG discussion on each WTBF species is provided below.

WTBF Yellowfin Tuna

Stock Assessment

In relation to Yellowfin Tuna stock assessment, TTRAG noted:

- Last assessed in 2018 and the Yellowfin Tuna stock is determined to be overfished and subject to overfishing.

IOTC Catches

In relation to Yellowfin Tuna catch IOTC trends, TTRAG noted:

- The most recent catches (31,628 t in 2018) are above the MSY level (31,590 t). Catches should be reduced to the MSY level (31,590 t).

WTBF statistics

- WTBF catches are low and have not exceeded 100 t since 2004.

TTRAGs final advice to TTMAC and the AFMA Commission regarding Yellowfin Tuna in the WTBF is drafted and included in **Attachment B.** Some points discussed by TTRAG in finalising the advice paper included:

- That the advice should make reference to the fact there is new information on the stock structure to suggest an eastern and western stock for Yellowfin Tuna. It was noted that AFMA would source the most recent stock structure advice for all WTBF species for inclusion in the TTRAG advice.
- The TTRAG's advice should include the IOTC recommendation that fleets catching the largest amount of the stock reduce their catches and it is unlikely the WTBF contributed significantly to the current status.

ACTION ITEM: Dr Don Bromhead to contact Campbell Davies to get the most recent information of stock structure for all WTBF species.

WTBF Bigeye Tuna

Stock Assessment

In relation to Bigeye tuna stock assessment, TTRAG noted:

- In 2019 a new stock assessment was carried out for bigeye tuna and the stock status has changed to not overfished but subject to overfishing.

IOTC Catches

In relation to Bigeye Tuna catch IOTC trends, TTRAG noted:

- The average catch over the previous five years (2014–18; ~89,717 t) is just above the estimated median MSY.

WTBF statistics

- Catches in the WTBF have not exceeded 200 t since 2004.

TTRAGs final advice to TTMAC and the AFMA Commission regarding Bigeye Tuna in the WTBF is drafted and included in **Attachment B.** Some points discussed by TTRAG in finalising the advice paper included:

- That the advice should note that if the entire 2000t TACC for Bigeye Tuna is caught, it would represent ~2.5% of total IOTC catch.

WTBF Swordfish

Stock Assessment

In relation to Swordfish stock assessment, TTRAG noted:

- The most recent assessment in 2017 determined Broadbill Swordfish is not overfished and not subject to overfishing.

IOTC Catches

In relation to Swordfish catch IOTC trends, TTRAG noted:

- The most recent catches (31,628 t in 2018) are higher than the MSY level (31,590 t). The catches should be reduced to the MSY level (31,590 t).

WTBF statistics

- The current TACC of 3,000 t is much higher than recent historical catch levels (119 t in 2019/20 season or ~4% of TACC). If fully caught, the TACC would represent ~10% of total IOTC catch.

TTRAGs final advice to TTMAC and the AFMA Commission regarding Swordfish in the WTBF is drafted and included in **Attachment B.** Some points discussed by TTRAG in finalising the advice paper included:

- The stock status as determined by IOTC showed that Broadbill Swordfish is not overfished and not subject to overfishing. However, the RAG has noted that catch is slightly above MSY.
- It was noted that in the TTRAG advice, it should be made clear when the RAG is referring to Commonwealth reference points and/or IOTC reference points.

WTBF Striped Marlin

Stock Assessment

In relation to the Striped Marlin stock assessment, TTRAG noted:

- The last assessment in 2018 determined Striped Marlin as overfished and subject to overfishing.

IOTC Catches

In relation to Striped Marlin catch IOTC trends, TTRAG noted:

- Annual catches have increased since 2009, but declined in 2018 to 3,791t, which is below the estimated MSY (4,730 t).

WTBF statistics

- The current WTBF catch was 1 t in 2019/20 season or <1% of the current WTBF TACC of 125t

TTRAGs final advice to TTMAC and the AFMA Commission regarding Striped Marlin in the WTBF is drafted and included in **Attachment B.** Some points discussed by TTRAG in finalising the advice paper included:

- Striped Marlin is not typically targeted in the WTBF, and WTBF catch represents very small proportion (<0.04%) of IOTC catch.

4. Coral Sea proposal

4.1. Coral Sea proposal - indicators and data review

Under this item, the RAG discussed the industry proposal to restrict the 500 hook limit condition on longline fishing in the Coral Sea Zone (CSZ) to the area west of 148ºE during the period of 1 September to 31 December each year.

The RAG noted the background to the proposal where:

- Currently, AFMA requires operators must only fish 500 hooks or less per shot. This condition was implemented to reduce soak time and increase Black and Blue marlin survivability at haul and post release.
- At TTRAG 27, AFMA provided maps of the area of the CSZ and the distribution of where Black and Blue Marlin have previously been caught, as well as catch by month for each of the species that showed the bulk for both species is between October and December.
- TTRAG 27 information provided to the RAG also showed that the CSZ catch of Blue Marlin is a relative low proportion of the total ETBF where as CSZ Black Marlin is a relatively high proportion of the total ETBF catch. It was further noted in the AFMA summary that the ERA outcomes for both species resulted in them being low risk.
- In TTRAG's analysis of the proposal, the RAG suggested that for Black and Blue marlin and protected species (particularly sea turtles), an analysis of the range of potential changes in likely catches and mortalities that might occur from potential changes in fishing effort in the CSZ under the proposal should be done. The RAG suggested a number of factors (such as life status of interactions, post release mortality, and a range of effort scenarios) be included in the analysis.
- TTMAC22 supported the TTRAG27 proposal for further analysis to support development of advice on this matter, with that advice to be then provided to TTMAC to support its further consideration of the industry proposal.

The RAG was asked to consider and discuss a subsequent analysis (provided at Agenda item 4.1a) on how varying fishing effort scenarios may impact the level of interactions with Black and Blue marlin in the CSZ. The RAG noted that not all the factors they suggested be considered at TTRAG27 were able to be included in the analyses.

For the purposes of the analyses presented, the level of future potential fishing effort in the CSZ, under the industry proposal (and variations upon that) was considered to be a product of:

- The number of boats
- The number of months in which 500 hook rule does not apply
- The number of hooks set per shot (in months when the 500 hook limit does not apply)
- The number of sets per day
- The number of days fished per month

The analysis examined three potential variations in each of three of these factors only, being:

- Number of boats fishing:
    - 3 (status quo),
    - 7 (mid-range) and
    - 11 (all CSZ Boat SFRs utilised)

- Number of months (in which the 500 hooks limit does not apply):
    - 4 months (May-Aug)
    - 6 months (Mar-Aug)
    - 8 months (Jan-Aug)

Note –the industry proposal is for 8 month application when the 500 hook limit does not apply, TTRAG noted that variations (extensions) on this should be explored to cover extended periods of high CPUE for blue marlin in particular. Hence consideration of 4 and 6 months.

- Number of hooks per set:
    - 1200 (intended hooks/set by industry proponent)
    - 1500 (mid-range)
    - 1800 (ETBF average – Campbell 2020)

The key results and conclusions include the following:

- Overall, the key drivers of significant change in the relative levels of likely longline interactions with black and blue marlin is increasing the number of vessels and increasing numbers of hooks per set. Increasing the number of months of application of the 500 hook rule has a lesser impact on minimising increases in interactions that might occur under the proposal. This is particularly so for black marlin, due to the months of high CPUE for that species occurring mainly within the core 4 month period in which the 500 hook limit is proposed to apply. This is somewhat less the case for blue marlin.

- If the core industry proposal (8 months with no hook limit, fishing 1200 hooks per set1 or per day) is applied, for only three vessels that have historically fished the area, the analysis estimates a potential increase by 8% in annual black marlin interactions and by 18% for blue marlin interactions, relative to the baseline. The increase is due predominantly to the higher estimated fishing effort per day fished per vessel (1200 hooks versus ~750 hooks/day previously on average). For blue marlin, the increase is higher due to relatively higher CPUEs outside the September-December period in which the 500 hook limit applies. These estimated increases drop to 1% (black marlin) and 5% (blue marlin), if the 500 hook limit is removed for only 4 months (May-August).

- If the above scenario is modified to include all 11 vessels fishing at the same monthly effort levels (1200 hooks/set and 8 months with no hook limit) then the estimated interactions increase by 63% (black marlin) and 136% (blue marlin).

- These increases are by 100% (black marlin) and 218% (blue marlin) if hooks per set increased to the ETBF average of 1800hooks (and 11 vessels). This is effectively the “worst case” scenario of those examined.

- However, for that scenario (11 vessels and 1800 hooks/set) the increase is only by 11% (~84 fish) for black marlin, and 59% (186 fish) for blue marlin, if the period without 500 hook limit is restricted to four months.

In considering the outcomes of the analysis, the key points discussed by the TTRAG were that:

- Scaling each of the factors (number of boats, hooks set and months fished) gives a varying result in the percentage increase of interactions for both blue and black marlin.

- There is interannual variability in the average catch rates in blue and black marlin however the analysis has used the average CPUE per month (across 5 years for each month) so the resulting figures should be interpreted within that context.
- While the analysis focuses on the CSZ, changes to spatial effort (e.g. translocation of effort) generally may influence the number of interactions in the ETBF as a whole (i.e. effort shifting to the CSZ may reduce interactions elsewhere in the fishery).
- It is difficult to predict whether all 11 boats that are licensed to fish in the CSZ would increase their effort if current restrictions were to change, and overall, there is not enough information to predict what the likely impact would be if the 500 hook restriction is lifted on a permanent basis.

In addition, the recreational member noted that the recreational fishery may see value in quantifying their current strike rate as a baseline if they choose to explore whether there are effects on recreational catches resulting from the proposal in the future (assuming the proposal is endorsed).

TTRAG Recommendation:

The RAG agreed that a trial of the proposal would be the best way to assess the gather additional information to help better assess the potential implications of the proposal were it to be implemented on a more permanent basis in future. The trial should aim to collect key data on factors that remain uncertain, and the trial should be designed by considering:

- The specific circumstances that would result in the cessation of the trial (e.g. if interaction levels were considered to have significantly increased beyond was is deemed acceptable).
- The number of boats that would be permitted to participate in the trial (e.g. all boats licensed to fish in the CSZ or a subset of those)
- Whether there is an upper limit for the number of hooks that can be set during the trial and which months the current 500 hook limit would continue to apply.
- The type of data collection and monitoring that would accompany the trial (e.g. increased review of electronic monitoring, observer coverage, additional data fields collected etc.)
- The length of the trial (where the RAG noted too short time frame may not result in enough information to assess the outcomes).
- What is achievable under a trial, and what a successful trial looks like.

It was agreed that the RAG's recommendation of proceeding with a trial be presented to TTMAC, and if endorsed, a sub-group be formed to design the trial with appropriate parameters that are both precautionary and allow for the collection of key data that is needed to look at some of the uncertain factors that have been identified.

4 Striped Marlin Harvest Strategy

5.1. Update on the Management Strategy Evaluation (MSE)

Dr Ann Preece informed the RAG that there is no further update since TTRAG 29 regarding the development of the MSE tested ETBF harvest strategy for Striped Marlin.

The RAG noted that the intention is to distribute the outcomes of the work by the end of the year to seek early feedback from the RAG prior to finalising the work at the TTRAG 31 meeting in March 2021.

5 Other Business

6.1. Progress against ETBF FMS action items

The AFMA member informed the RAG of the actions taken with respect to action items within the ETBF Fisheries Management Strategy (as documented in the Agenda item 6.1 paper). Key points from the RAG's discussion were:

- That AFMA would like to keep both TTRAG and TTMAC informed as to how action items within the FMS are progressing.
- Many of the action items overlap between chapters in the document and AFMA will work out of session to consolidate the actions list.
- A question raised as to whether action items around the collection of additional logbook data are worth pursuing given they appear to be aimed at capturing minor changes that may have negligible effect on the CPUE indices. In discussion, the RAG agreed that factors that influence the CPUE indices will need to be continually explored given CPUE is fundamental to the management of the fishery. There are also additional logbook data fields that are aimed at getting a better understanding of protected species interactions which will be important for reducing interactions in the fishery.
- Mr David Mobsby noted that the action item around developing and including performance criteria for objectives relating to cost effectiveness, international agreements, and optimal utilisation may be relevant to work being undertaken by the Economic Working Group. It was agreed that AFMA and Mr Mobsby should discuss the item further out of session.
- That with respect to byproduct monitoring triggers, AFMA will be looking at ways to automate the process and will provide the outcomes of that work to TTRAG as the work develops.
- That with respect to shark identification and handling practices, there are video resources available, some of which have been circulated to industry and the action item should be updated to include that information.
- With respect to the size monitoring data action items, the most recent batch of data received had less missing data with respect to vessel name than previously observed.

ACTION ITEM: AFMA and Mr David Mobsby to discuss the action item regarding performance criteria for objectives to determine whether there is overlap in work being pursued by the Economic Working Group.

6.2. Significant events spreadsheet update

Under this agenda item, the RAG noted the updates to the management timeline spreadsheet that outlines the significant management arrangements and events that have occurred in the fishery over the last 20 years. The RAG noted the new additions to the timeline relating to:

- (2020) TACC for the 2020 season in the fishery
- (2020) The COVID-19 global pandemic

- (2020) Additional seabird mitigation for notified boats
- (2020) Commencement of seabird feather sampling
- (2013) ETBF harvest strategy no longer applied to tropical tuna species
- (2018) ETBF harvest strategy no longer applied to Swordfish and Striped Marlin
- (2021) New Harvest Strategy applied to Swordfish

Key points from the RAG discussion were:

- A suggestion by Mr David Ellis that recent interest in the use of Fish Aggregating Devices (FADs) by state governments to enhance recreational fishing spots is added to the significant events spreadsheet. It was suggested by AFMA that given they are not yet operational it may be premature, however ultimately it was decided to note it in the spreadsheet given it is a living document that can be amended at a future date.
- In discussion, Dr Ian Knuckey noted he has previously worked on a FAD related project with the Western Australian government and is also involved in work relating to the Commonwealth resource sharing framework.
- That the handover of the size monitoring program from Kevin Williams to Tuna Australia is added to the significant events spreadsheet.

ACTION ITEM: AFMA to make the following additions to the significant events timeline:

- (2020) Proposals from state governments to use Fish Aggregating Devices (FADs) to enhance recreational fishing hotspots
- (2019) Size monitoring program hand over to Tuna Australia

ACTION ITEM: AFMA to update Dr Ian Knuckey's declarations of interest for subsequent meetings to include previous work on FADs with the Western Australian government and involvement in work relating to the Commonwealth resource sharing framework.

6.3. Date and Venue for next meeting

TTRAG agreed to set placeholders for the next three meetings throughout 2021. The following meeting dates were tentatively scheduled:

- TTRAG 31, 9 – 11 March 2021
- TTRAG 32, 13 – 15 July 2021
- TTRAG 33, 14 -16 September 2021

The Chair closed the meeting at 12:20 pm on day two and thanked members for their attendance and contributions.

Appendix 1: Adopted Agenda

Australian Fisheries Management Authority - Canberra

Video Conference – 12 October (full day) and 13 October (half day)

Commencing at 9.00am ACT/NSW – 8am QLD – 6am WA

1. Preliminaries

1.1. Welcome and apologies (Chair)
1.2. Pecuniary interest declarations (Chair)
1.3. Adoption of Agenda (Chair)
1.4. Adoption of Minutes (Chair)
1.5. Actions Arising (AFMA)
1.6. Out of session correspondence (AFMA)

2. Review of Fishery Performance

3. Fishery indicators

3.1. South West Pacific Data – update (CSIRO)
3.2. ETBF Economic indicators (ABARES)
3.3. ETBF Fishery indicators (CSIRO)
3.4. WTBF Indicators (AFMA)

4. Coral Sea Proposal

4.1. Coral Sea Proposal - indicators and data review (ABARES/AFMA)

5. Striped Marlin Harvest Strategy

5.1. Update on Management Strategy Evaluation (MSE) (CSIRO)

6. Other Business

6.1. Progress against ETBF FMS Action Items (AFMA)
6.2. Significant Events Spreadsheet update (AFMA)
6.3. Date and venue for next meeting (Chair)

Appendix 2: Actions arising from TTRAG 30

	Action	Responsibility
1	Mr David Mobsby to include overall ETBF GVP, with and without SBT catch, in future economic condition summaries to TTRAG	Mr David Mobsby
2	AFMA and Dr Rich Hillary to clarify the explanation within the ETBF FMS commercial species chapter of how the mean CPUE index is applied the harvest control rule in the Swordfish Harvest Strategy.	AFMA/Dr Rich Hillary
3	Dr Julian Pepperell to contact Dr Sean Tracey to get updated information on recent recreational catches.	Dr Julian Pepperell
4	AFMA to contact Campbell Davies to get the most recent information of stock structure for all WTBF species.	AFMA
5	AFMA and Mr David Mobsby to discuss the FMS action item regarding performance criteria for objectives to determine whether there is overlap in work being pursued by the Economic Working Group.	AFMA/Mr David Mobsby
6	AFMA to make the following additions to the significant events timeline: - (2020) Proposals from state governments to use Fish Aggregating Devices (FADs) to enhance recreational fishing hotspots. - (2019) Size monitoring program hand over to Tuna Australia.	AFMA
7	AFMA to update Dr Ian Knuckey's declarations of interest for subsequent meetings to include previous work on FADs with the Western Australian government and involvement in work relating to the Commonwealth resource sharing framework.	AFMA

List of Attachments

ATTACHMENT A: TTRAG ETBF TACC advice

ATTACHMENT B: TTRAG WTBF TACC advice