



Australian Government
Australian Fisheries Management Authority



Tropical Tuna and Billfish Fisheries
Research Assessment Group
(TTRAG)

MINUTES
TTRAG 15
11 & 12 JULY 2016
MOOLOOLABA

Table of Contents

1. Preliminaries	3
1.1 Welcome and apologies	3
1.2 Pecuniary interest declarations	3
1.3 Adoption of agenda	5
1.4 Acceptance of minutes	5
1.5 Actions arising/out-of-session development	5
2. Review of fishery performance	7
2.1 Current catches and effort in the domestic fishery- verbal updates from scientists, industry and recreational fishing member since last RAG meeting (March 2016)	7
2.2 Update from the 20th session of the Indian Ocean Tuna Commission (IOTC)	9
3 Harvest Strategy	11
3.1 Fishery Data Summaries	11
3.2 CPUE Standardisation	11
4 Fishery issues	12
4.1 Review of conversion factors	12
4.2 Quota zones for swordfish	13
4.3 ERA/ERM Update	14
4.4 ETBF Species classification	14
4.5 MSC Update	15
5 Research	15
5.1 Update on current research	15
5.2 ATBF Annual Research Statement	16
6 Other Business	19
6.1 Clarification of Rudderfish/Escolar/Oilfish	19
6.2 ETBF significant events spreadsheet	19
6.3 Science Quality Assurance Guidelines update	19
7 Date and venue for next meeting	20

1. Preliminaries

1.1 Welcome and apologies

1. The TTRAG Chair opened the meeting at 9:00am

2. Attendees

Members

Dr Cathy Dichmont (Chair)
Dr. Don Bromhead (AFMA)
Dr Rob Campbell (CSIRO)
Dr Rich Hillary (CSIRO)
Dr Julian Pepperell (Recreational fishing scientist)
Mr. Gary Heilmann (Industry)
Mr. John Abbott (Industry)

Invited participants

Mr. Paul Williams (Industry)
Mr. David Ellis (Industry)

Observer

Ms. Stephanie Martin (AFMA)
Mr. Sam Williams (UQ)
Dr. Jess Farley (CSIRO)

Executive Officer

Ms. Natalie Rivero (AFMA)

Apologies

Mr. James Larcombe (ABARES)
Prof. John Tisdell (UTAS)
Mr. Pavo Walker (Industry)

1.2 Pecuniary interest declarations

1. TTRAG discussed the declaration of pecuniary interests and how TTRAG will deal with potential conflicts of interest.
2. The attendees were asked to state their pecuniary interests.
 1. **Dr Cathy Dichmont**, has a consulting company, but has no pecuniary interests in the tuna fisheries.
 2. **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.
 3. **Ms Stephanie Martin**, Employee of AFMA, which includes a salary. Is Senior Management Officer for the tropical tuna fisheries, but has no pecuniary interest in Australian tropical tuna fisheries.

4. **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. Is the PI of the following research projects: *“Data management, provision of fishery indicators and implementation of the harvest strategies for Australia’s tropical tuna fisheries”* and *“Developing innovative approaches to improve CPUE standardisation for Australia’s multi-species pelagic longline fisheries.”*
 5. **Dr Rich Hillary**, employee of CSIRO, working on SBT and tuna assessments. PI on the *“Determination of the spatial dynamics and movement rates of the principal target species within the ETBF and connectivity with the broader WCPO- beyond tagging”* project. Has no pecuniary interest in Australian tropical tuna fisheries.
 6. **Dr Julian Pepperell**, independent fisheries consultant and representative of the recreational fishing sector. Is currently undertaking research into game fishing and has an application for research with Western Australia fisheries. Is involved in projects including the monitoring of fish landed at game fishing tournaments and pop-up satellite tagging on juvenile Black Marlin.
 7. **Mr Gary Heilmann**, director of several companies that hold 2 ETBF boat SFRs and quota SFRs, a fish receiver’s permit and a Coral Sea fishery permit.
 8. **Mr John Abbott**, owns an ETBF boat SFR, ETBF quota SFRs and also holds a state and Commonwealth licence fish receiver permit.
 9. **Mr Paul Williams**, director of a company that holds an ETBF boat SFR, ETBF quota SFRs, and holds a Commonwealth licence fish receiver permit.
 10. **Mr David Ellis**, previously involved in the South Australian Tuna fishery, has a consultancy company, working with a steering committee in the ETBF to set up an association.
 11. **Mr Sam Williams** (observer), student at University of Queensland. Supervised by Julian Pepperell and is involved in a number of projects involving tagging of Marlin. Has no pecuniary interest in the Australian tropical tuna fisheries.
 12. **Dr Jess Farley** (observer), employee of CSIRO, researcher of tropical tuna, has no pecuniary interest in Australian tropical tuna fisheries.
 13. **Ms Natalie Rivero**, employee of AFMA, which includes a salary. Is a Management Officer for the tropical tuna fisheries. No pecuniary interest in tropical tuna fisheries.
- 3. Members not present**
1. Mr Pavo Walker
 2. Mr James Larcombe
 3. Professor John Tisdell

1.3 Adoption of agenda

1. The agenda (Attachment 1.3a) was adopted by TTRAG, noting the inclusion of an additional agenda item under 3.3 to discuss the paper '*Determination of swordfish growth and maturity relevant to the southwest Pacific stock*' by Dr Jess Farley.

1.4 Acceptance of minutes

1. The minutes for the TTRAG14 meeting were endorsed by the TTRAG without amendment. It was noted that a number of papers intended to be circulated to the RAG out of session were still outstanding.

ACTION ITEM: AFMA to follow up on papers that were to be circulated out of session to the TTRAG after TTRAG14 and follow up on any additional outstanding items that may have been overlooked from that meeting.

1.5 Actions arising/out-of-session development

1. TTRAG discussed the action items arising from TTRAG 14 (Table 1), and commented on the progress on each item.

Table 1: Actions arising from TTRAG 14 and the status of action items as discussed by the RAG.

	Action	Responsibility	Status
1	AFMA to provide Dr Rob Campbell with the locations of the SBT management zones and a list of all the shot numbers within the zones.	AFMA	Ongoing. Some data has been collated by AFMA but it is yet to be finalised and provided to Dr Campbell.
2	TTRAG to discuss the "Development of an approach to harvest strategy management of internationally managed multi-species fisheries" report when finalised by CSIRO.	TTRAG/Dr Rich Hillary	The project report is finalised and will be circulated for comment. There is a possibility it will be an item for discussion at the next TTRAG meeting in October.
3	AFMA to include the classification of "discard" in the fishery management arrangements booklet and clarify the requirements for reporting discards.	AFMA	Ongoing. It is part of a review of discards across all AFMA-managed fisheries. The review process is yet to be completed.

4	ETBF Management Arrangements spreadsheet: TTRAG members to each review their area of expertise and add relevant management arrangements to the existing table also including management arrangements in the WTBF. Separate sheets suggested for economic factors and recreational fishing.	TTRAG	Ongoing. The update of this spreadsheet should be completed routinely (as a standing agenda item for the July meeting each year) and edited by TTRAG as events are identified. Due to a new TTRAG being formed, it would be more appropriate for members to add their input at or following this meeting (see agenda item 6.2).
5	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.	AFMA/Dr Julian Pepperell	Ongoing. AFMA have contacted NSW DPI and the Charter boat data should be available by the end of July. Dr Julian Pepperell has received scans of annual reports of recreational catch from the 1960's to 2012. The reports include over 45,000 records of catch weight and tagging data that have been entered into an electronic database.
6	AFMA to investigate past Mahi Mahi trigger limit arrangements.	AFMA	This was discussed at TTRAG 4 in 2012. Trigger limits were considered in conjunction with the harvest strategy, but they were not discussed specifically for Mahi Mahi. No further discussion has been recorded.
7	AFMA to draft a letter out of session that includes interim monitoring rules discussed, with Dr Robert Campbell's paper on Mahi Mahi attached. Circulate to the TTRAG for comment.	AFMA	Ongoing. A letter has not yet been drafted as further clarification is required from Walker Seafoods/MSC regarding what is needed for Mahi Mahi to be classed as a target species and included within the scope of the MSC certification.

8	AFMA and Walker Seafoods to contact MSC for further clarification as to what is required for certification of Mahi Mahi.	AFMA/Walker Seafoods	Ongoing. This action item was discussed under agenda item 4.5 (see below).
9	Dr Julian Pepperell to prepare a research proposal to investigate the incorporation of recreational fishing data into the management of the ETBF. This proposal is to be included in the 2017/18 annual research statement and circulated to TTRAG for comment out of session.	Dr Julian Pepperell	<p>Ongoing.</p> <p>Proposal is yet to be finalised. Dr Julian Pepperell suggested that validation of the recreational data set provided by Danielle Ghosn should be included as part of the proposal.</p> <p>The annual research statement is due at the end of August to AFMA and the Rec fishing trust also has an August deadline for out of session proposals.</p>

2. Review of fishery performance

2.1 Current catches and effort in the domestic fishery- verbal updates from scientists, industry and recreational fishing member since last RAG meeting (March 2016)

Industry report

1. Industry reported that catches of all species in the ETBF have slowed down, particularly in the last month. They have observed a large sea temperature drop (4 or 5 degrees in June) within a short time period and targeted currents and eddies have recently disappeared, particularly those off southern NSW, Victoria and Tasmania.
2. The RAG was informed that there has been a shift in effort to further off the shelf in an attempt by industry operators to avoid catching Yellowfin. This is largely due to the Yellowfin tuna quota becoming more limiting again this season. 200 tonnes of Yellowfin was landed in January which is unusually high for that month, with a lot of Yellowfin catch landed down south which is also unusual.
3. Industry commented that operators were fishing out wider to target swordfish although catches have been low and Bigeye catches, while still good, have not been as good as last year. There were also reports of a high number of Mako sharks caught off Tasmania.

4. Albacore catches were reported as good with a slightly higher than usual size range of about 18-20 kg.
5. Industry reported that a number of operators are targeting SBT off NSW despite poor market prices (around 1100-1200 yen). Prices may improve when the Japan purse seine season closes. The quality of the SBT is poor despite good sizes as they have a low fat content. This may be attributed to the poor squid season.
6. Mr David Ellis informed the RAG that industry will be meeting after TTRAG15 with the aim of obtaining sufficient membership to register the industry association. He noted there has been good buy-in to the organization, suggesting a positive outlook for its future.

Recreational fishing member report

7. Dr Julian Pepperell reported that there have been a number of tournaments off NSW recently, and that Blue Marlin has continued to be consistent with 120-200kg fish caught.
8. TTRAG noted that this is the third year in a row that good numbers of juvenile Black Marlin have been encountered recreationally. Very small fish (2-3kg) are turning up further south off Hervey bay with speculation that there is a new spawning area. Dr Pepperell's PhD student, Sam Williams, will be pursuing research into aging these fish.
9. Adult spearfish have been caught off Bermagui which is highly unusual while the catch of Yellowfin had been better this year (though patchy) with fish being caught in the 40-60kg range. A Common Thresher Shark was also caught at a tournament in Port Stephens.
10. The deep fishing technique for day time targeting of swordfish has become increasingly popular and Dr Sean Tracey (UTAS) has so far tagged 8 fish with 1 tag lost to date. It is anticipated that the swordfish targeting by recreational anglers will continue.
11. It was further noted by TTRAG that Striped Marlin catches have been poor for the last few seasons compared to previous years.

Dr Robert Campbell- Scientific Report

12. At this point, TTRAG agreed to shift the presentation of catch (Agenda item 3.1a), size (3.1b) and environmental data (3.1c) by Dr Robert Campbell, forward in the agenda so as to adjoin and allow comparison with the discussion of industry observations of catches and fishing conditions (above). For details of Dr Campbell's presentations and associated TTRAG discussions, please see the associated Agenda items below.
13. Dr Robert Campbell provided a summary of the catch and effort in the fishery for 2015 (more detail can be found in the attachment at Agenda item 3.1a). The TTRAG was informed that there was a jump in effort in 2015 compared to the previous 4 years (pg. 13, graph 1) and industry commented that it's likely due to a 15% jump in SBT targeting due the larger amount of quota available.
14. Average days fished per boat in the ETBF were at a record high of about 130 days (pg. 14 graph 1) and number of days fished per boat is also increasing (pg. 15 graph 2). There has also been a steady increase in hooks per day (pg. 14 graph 2) and numbers of hooks per year per boat (graph 3 pg. 15).
15. TTRAG noted that it would be useful to include more years in the spatial catch map comparisons. Currently the catch report compares distributions of catch between the most recent year and the year 2003, however, including maps of additional recent years (e.g. 2, 3 and 4 years ago, or every 2-3 years) would allow assessment of changes in catch distribution relevant to the current harvest strategy and recent trends in the fishery. It was also suggested that maps highlighting foreign fishing effort and catch adjacent to the ETBF might be useful, noting limitations associated with the 3 boat rule.
16. Dr Campbell then presented a summary of size data (further detail in agenda item 3.1b) and an annual time series of environmental and oceanographic conditions (more detail in agenda item 3.1c) from the ETBF. These ongoing data sets have been updated to include 2015 data which was noted by the RAG.
17. TTRAG suggested that, resources permitting, future summaries of environmental data be divided and presented according to spatial sub-regions of the fishery. Fishery wide summaries may tend to "average out" important area specific trends in oceanographic factors, while sub-region based summaries may allow comparison with sub-regional trends in CPUE, catch and size and also provide a comparison point for industries observations "on the water".

2.2 Update from the 20th session of the Indian Ocean Tuna Commission (IOTC)

1. The AFMA member provided a verbal report to the RAG on the outcomes of the 20th session of the Indian Ocean Tuna Commission (IOTC) meeting attended by Trent Timmiss (AFMA).
2. The RAG noted the current status of IOTC tuna and billfish stocks:
 - Bigeye and Skipjack: not overfished or subject to overfishing.
 - Striped Marlin and Yellowfin: overfished and overfishing occurring against an MSY reference point.
 - Swordfish: not overfished but possibly in SW Indian Ocean
3. The RAG was informed that twelve resolutions were made at the IOTC meeting (more detail on the resolutions can be found on the [IOTC website](#)). Of interest to the RAG were resolutions on:
 - Limiting Yellowfin catches by all major fleets- this measure requires major fleets to reduce their catches by 10-15% but does not apply to fleets catching less than 5000t (e.g. the WTBF)
 - Harvest control rule for skipjack- this measure is to maintain skipjack at levels above those capable of producing MSY. If levels are assessed as less than B40 in 2017, catch limits will be introduced.
 - Allowing members to assume unflagged vessels are IUU and can be boarded- this measure was proposed by Australia
 - Ban on the use of FADs- this measure explicitly allows for the use of light sticks
 - Prohibition of unmanned spotting aircraft -this measure prevents their use by purse seine for the use of fishing aids.

2.3 Outcomes of TTMAC

1. AFMA provided the RAG with an update from the most recent TTMAC meeting held on 27 April 2016 (TTMAC 14 minutes available on the [AFMA website](#)). The RAG noted the major topics discussed at the MAC meeting were the current conversion factors (addressed under Agenda item 4.1), quota zones for swordfish (addressed under Agenda item 4.2) and the Yellowfin TACC.
2. Regarding the Yellowfin TACC, the RAG was informed that the agreed approach for the anticipated restriction in Yellowfin quota is that if by the end of August more than 40% of Yellowfin is caught, AFMA will make a recommendation to the AFMA Commission to increase the Yellowfin overcatch allowance, for the current season only (2016/17), from 10% to 20% and make this available from December 2016.

2.4 Swordfish: New growth and maturity parameter estimates for swordfish in the southwest pacific.

1. Dr Jess Farley (CSIRO) presented a research paper titled '*New growth and maturity parameter estimates for swordfish in the southwest Pacific*' (full paper is available under Agenda item 2.4a).
2. Growth and age at maturity estimates have a very significant influence upon stock status estimates derived from stock assessments and studies from different parts of the Pacific have estimated different growth and maturity parameter values. The research looked to determine if estimates varied due to real differences in stock structure in the distinct regions in the Pacific (WCPO, southwest, eastern Pacific) or were due to methodological issues. The study aimed to improve the accuracy of growth and maturity parameters of swordfish to reduce uncertainty in stock assessments.
3. The RAG noted the results of the otolith analysis undertaken in the study that suggest that otoliths provide more accurate ages estimates (than spines) in older fish and that swordfish in the ETBF region live longer and grow slower than previously estimated. Early analyses suggest the results may lead to less pessimistic stock status estimates in the next south-west Pacific swordfish stock assessment.

3 Harvest Strategy

3.1 Fishery Data Summaries

1. An update of the catch and effort data in the ETBF was provided by Dr Robert Campbell under Agenda item 2.1.

3.2 CPUE Standardisation

1. Dr Robert Campbell provided the RAG with an update for 2016 on aggregate and size-based standardized CPUE (the full paper is provided at attachment 3.2a).
2. TTRAG noted that there appeared to be a clear size based progression in CPUEs for bigeye tuna, whereby an increase in "recruit" sized fish CPUE in one year would be followed by increases in "prime" and then "large" class CPUE in subsequent years. This trend was not at all apparent in the yellowfin tuna CPUE indices, but the reasons for this were unclear, with questions raised as to whether it could be due to differing spatial trends in availability for yellowfin, avoidance behaviours by fishers (due to yellowfin quota concerns) or reflect mixing with adjacent regions (different size classes entering the fishery). It was

suggested that a spatial analysis of size data trends and patterns might be useful and informative in future.

3. The issue of co-occurrence of target species in the catch was raised, specifically around what species do you target if you want to catch less yellowfin? The question is difficult to answer without examining the data but may be worth examining in future, particularly if it can predict likely fishing behaviours/options when quota becomes limited.
4. For swordfish, the TTRAG noted with some concern that while “prime” and “large” fish CPUEs were at healthy levels, the “recruits” CPUE was at its lowest level in many years and would be of concern if this continued in future seasons. An industry member stated that there had been a noticeable absence of smaller swordfish in his catches this year.
5. TTRAG noted that the striped marlin standardized CPUE data indicate a strong recruitment of smaller fishing coming into the fishery which may improve the RBCC in future
6. When reporting of discards was discussed, the AFMA observer informed the TTRAG of a paper that will be presented by ABARES at the upcoming WCPFC meeting which looks at the level of discards reported in logbooks since the introduction of EM. The chair noted that discards since the introduction of EM will be a discussion item at the TTRAG meeting in March 2017.
7. Dr Campbell also noted that an analysis of alternate areas within the standardization process for striped marlin did not find any significant changes in the resulting CPUE time-series.
8. Overall the TTRAG discussion did not highlight any issues that would suggest the updated standardized CPUE indices should not be used in the swordfish and striped marlin harvest strategies or for developing advice on RBCCs for yellowfin, bigeye and albacore tuna.

4 Fishery issues

4.1 Review of conversion factors

1. Ms. Stephanie Martin (AFMA observer) presented the paper outlining a review of the current conversion factors for the ETBF target species was requested by several industry members, and the TTRAG was interested in the RAG’s consideration of the implications of changing the current conversion factors.
2. The RAG noted the background information provided by AFMA stating that industry have suggested the headed and gutted conversion factor of 1.5 is too high for

Albacore, Yellowfin and Bigeye tuna and that a conversion factor of 1.2 would be more accurate.

3. Preliminary samples collected by AFMA have confirmed that a conversion factor of 1.2 is likely more accurate and further noted that this was consistent with conversion factors used internationally for tuna species. AFMA also stated they were waiting on more samples from southern operators for confirmation of a 1.2 conversion factor.
4. The industry member Gary Heilmann stated that through the ETBF size monitoring program, Kevin Williams has collected a significant amount of data (100s of samples) on whole and gilled and gutted weight for Yellowfin and Bigeye, and headed and gutted weight for Albacore. It was suggested that this data could be used to confirm a more accurate conversion factor for the tuna species.
5. Noting that the sample sizes used in the preliminary AFMA study were low, the TTRAG requested that Dr Campbell analyse the data obtained by Kevin Williams to get an average conversion factor to use across the tuna species.

ACTION ITEM: Dr Robert Campbell to request weight data from Kevin Williams that will be used to obtain an average conversion factor for Bigeye, Yellowfin and Albacore tuna species.

4.2 Quota zones for swordfish

1. The RAG noted the background information presented by AFMA on the proposal made by industry to implement separate inshore and offshore quota zones for Swordfish in the ETBF.
2. The RAG was also informed that during the last TTMAC meeting, it was requested that TTRAG review and discuss any potential sustainability issues associated with separating Swordfish into two quota zones.
3. An industry member suggested that setting a line at 165E and having offshore and inshore zones, with decremented quota (more catch per quota SFR offshore but with no change in total quota), would provide an incentive for some operators to target swordfish offshore, and thus reduce pressure on inshore stocks. Previously, Swordfish has been fished down further offshore, concentrating the fishing effort to inshore grounds. This trend however, may have enabled Swordfish to recover in recent years with little fishing effort in that region.
4. An industry observer asked whether it was possible to get a scientific fishing permit to allow some exploratory fishing offshore, to determine catch rates and potential abundance (and subsequent economic viability of fishing offshore).

5. A scientific member indicated that the recently funded target species stock genetics project would assist in determining if there is any stock structuring between the inshore and offshore swordfish.
6. The RAG noted that currently the stock assessment recognizes swordfish in the Australian fishery (inshore and offshore) as being of the same stock and that the CPUE standardization indicated a potential recent decline in the number of recruits entering the population in the ETBF region.
7. However, the RAG concluded that it did not have sufficient information at hand (in the paper or otherwise) to definitively assess any sustainability issues. The RAG requested that the issue be deferred until a paper is prepared by AFMA and the CSIRO that includes information from the harvest strategy, stock status information, the CSIRO MSE analysis and the connectivity review.

ACTION ITEM: 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

4.3 ERA/ERM Update

1. The AFMA member provided an update on the Ecological Risk Management (ERM) framework revitalisation project that is currently underway. The project has reviewed and updated both Ecological Risk Assessment and ERM processes within the framework and is currently testing the framework on two fisheries (ETBF and the Small Pelagics Fishery).
2. As part of the project, the RAG was informed that CSIRO has been contracted and is working with AFMA to develop an ERM guide which will outline the improvements from the previous framework and how the new framework will work.
3. CSIRO are currently in the process of running Level 1 assessment on the two test fisheries with plans to review any issues with the framework before it and the associated ERM Guide are finalized.
4. It was noted the framework will likely be circulated out of session and the RAG will have the opportunity to provide comment.

4.4 ETBF Species classification

1. Following from the previous agenda item (4.3), Ms Stephanie Martin (AFMA) informed the RAG that the revised ERA/ERM framework may require new species

classification categories, which will require different rules under the new harvest strategy policy.

2. The RAG noted that key Commonwealth policies are currently being updated and that the species categories may move to a 5-classification structure; key commercial, secondary commercial, byproduct, bycatch and protected (TEP) species.
3. The RAG also noted that until the harvest strategy policy is finalised, the definitions of what is required under each classification is uncertain.
4. For reference, AFMA presented a draft table with the new 5-classification species structure which the RAG discussed. The RAG commented that catch and GVP data would need to be considered when finalising the commercial species categories, as well as reviewing the list for misidentifications and duplication across categories.
5. The RAG noted it will be required to further discuss the classifications once the Harvest Strategy policy and new ERM guide are finalised.

4.5 MSC Update

1. The AFMA member updated the RAG on the progress Walker Seafoods has made since TTRAG 14 on obtaining MSC certification for Mahi Mahi.
2. MSC has been contacted and at the moment Mahi Mahi cannot be assessed for certification as a target species unless it has more stringent management arrangements in place (such as a harvest strategy, stock assessment etc.)
3. AFMA informed the RAG that the decision is with Walker Seafoods as to whether they'd like to continue to pursue certification and it was suggested that AFMA write a letter to Walker Seafoods outlining the current monitoring, assessment and status of the species.

ACTION ITEM: AFMA to write a letter to Walker Seafoods regarding the status of Mahi Mahi.

5 Research

5.1 Update on current research

1. The AFMA member provided an overview to the RAG on the status of AFMA and FRDC projects for 2016/17. The RAG was informed that the AFMA research committee

endorsed the final 2016/17 funding budget which includes ongoing commitments for two tropical tuna projects:

- (1) Data management, assessment & implementation of the Harvest Strategy for Australia's tropical tuna and billfish fisheries; and
- (2) ETBF Size monitoring program 2015-18.

1. Further to the ongoing projects, the Australian Tuna and Billfish Fisheries (ATBF) 2016/17 annual research statement included two other research priorities:

- (1) The degree of separation of spawning stock and migration between ETBF and the broader WCPO; and
- (2) Development of a spatial and temporal model to estimate economic returns to the ATBF.

2. In relation to the above priorities;

(1) ComFRAB has approved the proposal '*Determination of the spatial dynamics and movement rates of the principal target species within the ETBF and (2)*, ComFRAB allocated \$250,000 to fund a project focused on under-utilized TACs, which includes two workshops and also a technical workshop on declining stock biomass .

5.2 ATBF Annual Research Statement

1. The AFMA observer presented background information for this agenda item highlighting that at the last RAG meeting, the priorities for the 2017/18 ATBF annual research statement were unable to be finalized as the outcome of FRDC funding, which included a project that was the RAGs top priority, was unknown.
2. As the project with the highest priority identified at the last RAG meeting has now been funded (see agenda item 5.1 above for detail), the RAG discussed the remaining research projects to finalize the priorities for the 2017-18 ATBF annual research statement.
3. The RAG discussed each project and ranked them in order of priority and indicated which funding source each project would be proposed to. Each project is listed below with the outcome of the RAG's discussion. It should be noted that rankings take into account the targeted funding source (i.e. only one project per funding source was identified as high priority).

Priority 1: Data management, Assessment & Implementation of the Harvest Strategy for Australia's tropical tuna fisheries (3-year RAG project). – HIGH PRIORITY FOR AFMA

FUNDING

- This project was identified as a high priority for AFMA funding as it continues the work of the existing 3-year RAG project which is currently in its last year. The project

is seen as critical to the ongoing management of the ETBF. It includes the running and implementation of the ETBF harvest strategy for swordfish and striped marlin and the generation of key data analyses and indicators to inform TACC decisions for tropical tuna target species. Dr Robert Campbell provided a project statement to the RAG to be included in the 2016-17 ATBF annual research statement.

Priority 2: Investigating oceanographic and environmental factors impacting the ETBF -HIGH PRIORITY FOR FRDC FUNDING

- TTRAG considered this to be a high priority for FRDC funding as it could shed light on industry observations of anomalous catch patterns (e.g. catches occurring further south than usual), differences that have been observed between the recreational and commercial catches inshore and offshore, and environmental influences upon interactions between these fisheries.
- It was also noted that understanding how climatic, oceanographic and environmental factors have historically impacted on catches in the fishery could assist in the development of predictive tools or models, and may also assist in understanding mechanisms by which stock mixing with adjacent regions might occur or alternately be hindered. This would complement the current stock structure genetics project recently funded by FRDC.
- In discussing this project, the RAG was informed that AFMA have a broader project that will involve a workshop that will focus on the effects of climate change on fisheries management and it would be useful to note during the workshop that this work is a priority for the ETBF.
- TTRAG advised that this research priority should initially focus on the ETBF, noting the current low effort in the WTBF fishery. It was noted that if the project is funded and effort in the WTBF fishery increases, the project will serve as a useful basis for a similar project in the WTBF.
- The RAG decided this project would a high priority for FRDC funding for 2017-18.
- *Priority 3: Use of recreational fishery data in the management*

of the ETBF (Review available recreational catch information and investigate interactions between commercial and recreational catches and CPUE) - HIGH PRIORITY FOR NSW RECREATIONAL FISHING TRUST

- The RAG discussed this project and highlighted that there is a need to better understand the interaction between inshore recreational catches and offshore commercial catches of the ETBF target species. It was also noted that key

recreational knowledge gaps have been a recurring topic of discussion in the RAG when discussing the harvest strategy and stock assessment results.

- The RAG recreational fishing representative, Dr Julian Pepperell, informed the RAG that two sources of information for recreational catch are currently available. The recreational fishing club database and also historical changes in the management arrangements in the recreational fishery which are yet to be compiled. It was suggested that a project is needed which compiles the available recreational fishery data to identify gaps and then investigate interactions between commercial and recreational catches.
- The RAG further noted that outcomes from this project will potentially benefit and inform future discussions surrounding resource sharing with the recreational sector. It was agreed to list this as a high priority given that the funding will be sought from the NSW Recreational Fishing Trust and will not be in direct competition with other research priorities. The RAG also discussed that co-funding options should be considered in the proposal.

Priority 4: Measuring the economic impact of historical decisions so as to assist identifying appropriate management decisions for the future- MEDIUM PRIORITY FOR FRDC FUNDING

- This priority was considered to be medium priority as priority 2 was determined to be of more importance to the RAG for 2017-18 funding.
 - It was discussed whether industry should be consulted regarding the scope of the project via the ETBF industry association, and it was decided that if industry decide to refine the scope and change the projects priority to high, the list of priorities would be revisited by the RAG out of session.
4. The following two projects were also discussed by the RAG and were identified as low priority for funding in 2017-18.

Priority 5: Operational cost benefit analysis when running the harvest strategy – LOW PRIORITY FOR RESEARCH FUNDING

- This project was proposed by industry as a way to understand the economic cost of management changes made in the fishery so they can be considered when changes are implemented.

Priority 6: Development of a spatial and temporal model to estimate economic returns to the Australian Tuna and Billfish fisheries - LOW PRIORITY FOR RESEARCH FUNDING

- Industry noted that this project has merit as economic return influences how operators target species however for the moment it may be too broad and requires a narrower scope.

6 Other Business

6.1 Clarification of Rudderfish/Escolar/Oilfish

1. AFMA informed the RAG that there have been significant differences in the reporting of Escolar, Rudderfish and Oilfish species between logbook and e-monitoring data in the ETBF. AFMA provided a draft identification table to the RAG as an example of what may be circulated to industry to clarify species identification. The RAG provided comments on the identification table and suggested that clearer images are needed as well as updated species descriptions.

6.2 ETBF significant events spreadsheet

1. The RAG discussed the ETBF significant events spreadsheet that is an ongoing item for discussion by TTRAG members either annually or as new events are identified.
2. It was suggested by industry that it may be useful in the future to link the events recorded in the spreadsheet to the catch history of species.
3. TTRAG also noted that Professor John Tisdell would be developing an associated economic events spreadsheet and Dr Julian Pepperell a recreational fisheries events spreadsheet to complement the management events record.
4. Dr Robert Campbell informed the RAG that he would like to present the information collected in the spreadsheet at the upcoming Scientific Committee meeting for the WCPFC.
5. The RAG decided they would update the spreadsheet, separating recreational and economic events into separate tabs, and circulate out of session for comment before the WCPFC SC meeting.

ACTION ITEM: AFMA will circulate the ETBF significant events spreadsheet to the RAG out of session for members to update. The updated spreadsheet will be sent to Dr Robert Campbell by COB Friday 15 July for presentation at the upcoming WCPFC SC committee meeting.

6.3 Science Quality Assurance Guidelines update

1. The RAG noted the information provided by AFMA on a national FRDC funded project involving Commonwealth and State fisheries agencies to develop guidelines for the quality assurance of fisheries research and scientific information. The Guidelines have been developed with the aim of ensuring that the scientific basis for fisheries

management decisions is sound. This will provide increased confidence to stakeholders and the general public in the management of fisheries that adopt the guidelines.

2. The RAG was informed that the non-mandatory guidelines have been accepted by FRDC. AFMA will now look to develop a Science Quality Assurance policy which will identify and direct the implementation of those parts of the Guidelines that AFMA wishes to adopt. In doing this AFMA will review Fisheries Administration Paper 12 (FAP12) to see if it requires strengthening and alignment with the Guidelines.
3. AFMA informed the RAG that the Policy drafted by AFMA will undergo the usual review process and the RAG will be consulted for comment.

7. Date and venue for next meeting

The next RAG meeting will be held on 11-12 October 2016 in Mooloolaba to allow sufficient time prior to the TTMAC meeting tentatively scheduled for Monday 31 October.

In closing, the RAG acknowledged Stephanie Martin's role as acting tropical tuna fisheries manager over the previous 9 months and also suggested a letter be written to Dr Sandra Diamond thanking her for her time as the previous TTRAG chair.

Summary of action items arising from TTRAG 15

	Action	Responsibility	Status
1	AFMA to follow up on papers that were to be circulated out of session to the TTRAG after last meeting and follow up on any additional outstanding items that may have been overlooked from the last meeting	AFMA	
2	Dr Robert Campbell to request weight data from Kevin Williams that will be used to obtain an average conversion factor for Bigeye, Yellowfin and Albacore tuna species.	Dr Robert Campbell	
3	AFMA and CSIRO to prepare a report 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	AFMA/CSIRO	
3	AFMA to write a letter to Walker Seafoods regarding the status of Mahi Mahi and circulate to the RAG for comment out of session.	AFMA	
5	AFMA will circulate the ETBF significant events spreadsheet to the RAG out of session for members to update. The updated spreadsheet will be sent to Dr Robert Campbell by COB Friday 15 August for presentation at the upcoming WCPFC SC committee meeting	AFMA/Dr Robert Campbell	