Australian Government
Australian Fisheries Management Authority

TTRAG 44, 15-17 July 2025
Meeting Record

TTRAG – Tropical Tuna Resource Assessment Group

CHAIR: Dr Cathy Dichmont

Date: 15 – 17 July 2025

Venue: Holiday Inn Express and Suites Sunshine Coast, Maroochydore

Attendance:

Members:
- Dr Ashley Williams (Scientific Member)
- Dr Brent Wise (Scientific Member)
- Mr Gary Heilmann (Industry Member)
- Dr Julian Pepperell (Scientific/ Recreational Member)
- Dr Lara Ainley (AFMA Member)
- Mr Pavo Walker (Industry Member)
- Dr Rich Hillary (Scientific Member)
- Dr Robert Curtotti (Economics Member)

Invited Participants:
- Mr David Ellis (Tuna Australia)
- Dr Denham Parker (CSIRO)
- Dr Stephanie Brodie (CSIRO), for Agenda items 3 and 4
- Mr Terry Romaro, OAM (Tuna Australia/WTBF)

Observers:
- Mr Dan Corrie (AFMA), for Agenda items 3 and 4
- Dr Don Bromhead (ABARES), for Agenda item 8
- Dr Harrison Tuynman (ABARES)
- Ms Natalie Couchman, (AFMA), for Agenda items 1-10
- Mr Robert Wood (AFMA)
- Mr Sam Thalmann, (Marine Conservation Program), for Agenda item 6
- Ms Stephanie Blake (ABARES), for Agenda item 8

Apologies: Dr Ian Knuckey (Scientific Member)

Executive Officer: Mr Shayer Alam (AFMA)

Agenda:

1. Preliminaries: welcome and apologies, adoption of agenda, declarations of interests, actions arising from previous meetings and out of session correspondence	Chair
2. Member updates	Members
3. Climate and ecosystem status report	CSIRO
4. Application of climate risk framework to swordfish in the ETBF	AFMA
5. Swordfish harvest strategy review – OM conditioning	CSIRO
6. Summary of seabird interactions and proposed changes to management arrangements	AFMA
7. Recent estimates of NER for the ETBF	ABARES
8. ETBF and WTBF ecological risk management - response to the 2025 ecological risk assessments	AFMA
9. ETBF and WTBF fishery indicators	CSIRO
10. Multi-season TACC setting procedure for striped marlin in the ETBF	AFMA
11. ARC research priorities	AFMA
12. TTRAG priorities and meeting schedule	AFMA
13. Other business	Chair

Agenda Item 1: Preliminaries

1. The Chair opened the meeting with an Acknowledgement of Country.
2. The Chair welcomed all participants and noted apologies, which are recoded above. Meeting participants were informed that the meeting would be recorded for the purpose of assisting the preparation of meeting minutes.
3. The RAG adopted the draft agenda (**Attachment A**) and noted three additional items raised as other business; being an update on the recreational fishing sector, to discuss quota carryover and yellowfin tuna quota market analyses. The order of agenda items was revisited throughout the meeting to accommodate discussions, as well as the availability of members and invited presenters.
4. The RAG noted, in line with Section 4.1.4 of *Fisheries Administration Paper 12 – Resource Assessment Groups*, the requirement for all meeting participants to declare relevant interests, not limited to pecuniary gain, regarding all agenda items proposed for TTRAG 44. The Chair asked members who declared potential conflicts to leave the meeting, pending discussion by the other members on how conflicts of interest will be managed during the meeting.
5. Declared conflicts of interests and how they were managed at TTRAG 44 are recorded in the register of interest at **Attachment B**.
6. The RAG discussed the status of action items from previous meetings, noting items that are now considered completed. The RAG further supported the removal and consolidation of several action items. An updated summary of action items and new action items from TTRAG 44 is at **Attachment C**.
7. The RAG noted the out of session correspondence since TTRAG 42 (24 September 2024).

Agenda Item 2. Member Updates

8. The RAG noted updates from AFMA, industry and recreational members regarding current management arrangements and activities in the Eastern Tuna and Billfish Fishery (ETBF) and the Western Tuna and Billfish Fishery (WTBF).

AFMA Management update

9. Catches of yellowfin tuna and striped marlin in 2024 exceeded the total allowable commercial catch (TACC) limits of 2,400 tonnes and 351 tonnes, respectively, but were within adjusted limits due to the permissible 10% overcatch.
10. The April 2025, the Indian Ocean Tuna Commission (IOTC) agreed to a total catch limit of 92,670 t for the next 3 years (2026-28). This is an increase but does not affect Australia's catch limits.
11. Updated stock assessments for striped marlin and swordfish are expected to be presented at the upcoming Western and Central Pacific Fisheries Commission (WCPFC) scientific committee meeting in August 2025.

12. The development of a WCPFC management procedure for south pacific albacore is a key priority in 2025 and essential for the industry to maintain its Marine Stewardship Council (MSC) accreditation.

13. Following the WCPFC Commission meeting in December 2024, the catch limit for pacific bluefin tuna was increased to 40 t per year for Australia.

14. Seabird interactions in the 2024 summer TAP season in the area south of 40°S were higher than the previous seasons. On 31 January 2025, AFMA implemented a ban on daylight setting when fishing south of 40°S latitude in the ETBF, which was in place until 30 April 2025. Seabird interactions were discussed further under agenda item 6.

15. AFMA noted ongoing discussions with Australian Antarctic Division (AAD) regarding amendments to the TAP, following the review in 2024.

16. The strategic assessments for the Wildlife Trade Operations (WTO) approvals of the ETBF and WTBF were submitted to the Department of Climate Change, Energy, the Environment, and Water (DCCEEW) this year. AFMA is actively engaging with DCCEEW to complete this process efficiently.

Industry update

17. The ETBF industry noted high yields of southern bluefin tuna in 2024, however, good harvests of south bluefin tuna and yellowfin tuna have led to oversupply to the markets, causing prices to decrease.

18. Industry continues to face challenges including high operational costs, falling market prices, rising freight expenses, crew costs, competition for marine space, fishery certification requirements, fishery oversupply and imports on non-ethically sourced seafood.

19. Industry has successfully achieved MSC certification for southern bluefin tuna in the ETBF longline sector, recognising sustainable fishing practices.

20. Revisions of the South-east Marine Parks Network, covering waters off Victoria, South Australia, and Tasmania, have reclassified several zones to allow commercial longline operations targeting southern bluefin tuna.

21. The Coral Sea Hook Project is progressing with data collection; and a PhD student will be appointed soon.

Recreational fishing update

22. Good catches of black marlin were reported in 2024, but the notable absence of juveniles may be due to a recruitment failure or shifts in migratory patterns.

23. During the recent summer, many small blue marlin (40–50 kg) were caught, along with wahoo, spearfish, and dolphinfish.

24. Catches of striped marlin were reported as far south as Tasmania.

25. Yellowfin tuna catches were mostly large individuals (50–70 kg) and few smaller ones.

26. Southern bluefin tuna catches were good in Victoria and Tasmania, with larger fish (70–80 kg) also caught off southern New South Wales.

Action

AFMA to consider future strategic direction of the fishery to provide guidance for the RAG and its role.

Agenda Item 3. Climate and Ecosystem Status Report

27. The RAG considered the draft 2025 Climate and Ecosystem Status Report for the ETBF; and the presentation from Natalie Couchman (AFMA) and Stephanie Brodie (CSIRO), which highlighted:

    a. Key climate trends and their implications for the fishery. These included rising sea surface temperatures, the influence of the Southern Oscillation Index (SOI) and El Niño events on tuna and billfish catch rates, and changes in ocean productivity indicated by chlorophyll-a concentrations and phytoplankton biomass.

    b. Between 2023 and 2025, sea surface temperatures reached record highs, with marine heatwaves occurring along Australia's east coast from November through May. Chlorophyll-a levels remained high on the continental shelf, particularly during spring and summer, reflecting strong seasonal productivity. Sub-surface temperature data showed clear summer stratification and winter mixing patterns.

    c. Short-term forecasts (up to six months) suggest continued warm conditions and increased eddy activity south of the East Australian Current (EAC) separation zone, which may influence productivity hotspots. Longer-term projections, which depend on future emissions scenarios, indicate ongoing ocean warming and a likely decline in overall productivity, factors that could affect tuna distribution and catchability.

28. The AFMA Climate Adaptation Program was established following recognition of the severe impacts of climate change on AFMA fisheries. The objective of the program is to address these effects by incorporating relevant information into AFMA's fisheries management framework and implementing best practices to support long-term sustainability.

29. The RAG noted that sub-surface conditions have a significant influence on species distribution and catchability; and the data collected through the FishSOOP project may be a valuable source of information.

30. Industry members reported anecdotal accounts of anomalous events and species behaviour, including the arrival of yellowfin tuna linked to warm water pulses in June 2024, as well as changes in recruitment events observed over the past two years.

Recommendations

31. The RAG provided the following advice:

a. Sub-surface ocean data provides important information and should be monitored and included for future assessments.

b. Further analysis of chlorophyll-a anomalies and nutrient inputs should be explored to determine if these anomalies are due to the heavy rainfall throughout the year or other factors.

c. The use of seasonal forecasts in industry decision-making should be encouraged.

Action

CSIRO to provide more detail on the utility of the climate indicators used in the Climate and Ecosystem Status Report for the ETBF; so as to ensure the indicators used are able to detect signals of change early.

Agenda Item 4. Application of Climate Risk Framework to Swordfish in the ETBF

32. The RAG noted the presentation on the Climate Risk Framework (CRF) by Natalie Couchman (AFMA):

a. The CRF aims to integrate the existing information on the impact of climate change into management decisions and support the development of adaptation measures for management strategies where they are needed.

b. The CRF Working Group met with industry representatives, AFMA management and scientific stakeholders in October 2024 to consider the trial application of the draft CRF to broadbill swordfish in the ETBF which was assessed as medium risk overall, with a high climate risk and a projection of a 5–60% decline in abundance by 2040, and noting that the results are based on models with a medium level of uncertainty.

c. The CRF is still in development and identified data gaps can be addressed and presented to the AFMA Commission in late 2025.

Recommendations

33. The RAG provided advice on the draft CRF and outcomes of the trial application of the CRF to broadbill swordfish in the ETBF:

a. There is a need for improvement in the process for publishing the CRF and the results of the trial application.

b. More information is needed to understand the model assumptions, drivers and factors used to determine the 'medium risk' outcome for swordfish.

c. The trial results are still in draft format and if published, noting the concerns raised, may be mis-interpreted. The RAG advised that the results should not be published without a high level of confidence in the outcomes.

Action

AFMA to clarify the level of advice needed from the RAG and MAC on the Climate Risk Framework and trial applications, i.e., TTRAG is only providing advice about the trial and not the final results.

Action

A climate specialist in the CRF working group to present information on the model assumptions, drivers and factors used to determine the 'medium risk' outcome for swordfish.

Agenda Item 5. Swordfish Harvest Strategy Review – OM Conditioning

34. The RAG noted the presentation by Dr Denham Parker (CSIRO) on the development of the operating model (OM) of broadbill swordfish focusing on general updates including the latest catch, effort and stock assessment data, and updated parameters for the model.

35. The OM was updated to incorporate the latest data from the 2021 WCPFC swordfish stock assessment. This includes revised biological parameters, the use of joint-priors, and updated catch and CPUE data. The RAG noted that the updated stock assessment removed abundance indices for Japan and Taiwan, resulting in Australia's data being the longest time series available (starting in 1996).

36. The 2021 stock assessment used 25 models based on joint-priors which created challenges for defining a single base case, and introduced significant uncertainty, particularly around migration parameters.

37. Sensitivity testing showed that steepness had minimal influence due to low contrast in the data. Natural mortality had a more noticeable effect, with lower mortality resulting in more pessimistic outcomes.

38. Migration assumptions were identified as the major source of uncertainty in the OM.

39. The RAG discussed the influence of asymmetric migration between regions and its impact on depletion estimates. Migration from Region 2 to Region 1 was shown to significantly affect outcomes, and with pessimistic outcomes in Region 1 under zero-migration scenarios.

Recommendations

40. The RAG provided advice on the updates to the OM, base case scenario and assumptions of model parameters, specifically:

    a. The reference grid for the OM should be based on the Patterson[1] migration estimates, representing the best available information (0%, 5% and 10% equal migration), and combined with three steepness values and the natural mortality at age (M-at-ages) vectors, resulting in nine scenarios.

[1] Patterson, T., Evans, K., Hillary, R. 2021. Broadbill swordfish movements and transition rates across stock assessment spatial regions in the western and central Pacific. WCPFC-SC17-2021/SA-IP-17

b. The three values for steepness (0.65, 0.8 and 0.95) and three vectors M-at-age (from the diagnostic case of the 2021/2025 WCPFC assessment)_to be included in the reference grid should be those which were presented to the RAG; and all other parameters should be set at the median values derived from the 25-model ensemble developed during the 2021 stock assessment.

c. A short technical paper should be prepared and presented at the next meeting of TTRAG outlining the process used to select additional migration parameters for application in the robustness test scenarios.

d. Other robustness tests should include implementation error, undercatch scenarios, and constant catch projections.

Action

CSIRO to prepare a short technical paper that details the agreed reference grid and describes the selection process for migration parameter values for application in the robustness test scenarios.

Agenda Item 6. Summary of seabird interactions and proposed changes to management arrangements

41. The RAG noted the presentation from AFMA summarising seabird interactions in the ETBF and WTBF between the 2020 winter and 2024 summer TAP season, which highlighted:

a. Fishing in higher latitude areas comes with greater risk of seabird interactions, especially in the area south of 40°S latitude.

b. On some occasions, the ETBF and WTBF have exceeded the TAP bycatch rate performance criteria.

c. There is potential for increasing effort to target southern bluefin tuna fishing.

d. Interactions occur during both setting and hauling of longlines.

e. Strengthened management is one option to reduce the risk of seabird interactions for the fishery.

f. Industry concerns about the level of regulation in the fishery, specifically that mitigation should not unnecessarily stifle innovation or disadvantage good performance.

g. AFMA have legislative obligations to manage, mitigate and minimise seabird interactions.

h. This is an important issue for ongoing consideration by the RAG.

42. The RAG noted the presentation from Dr Sam Thalmann, Wildlife Biologist from Marine Conservation Program on the species diversity in the area, specifically:

a. Macquarie Island is dominated by breeding species such as black-browed, grey-headed, and wandering albatrosses.

b. Tasmania (40–42°S) has high diversity with both breeding and foraging species from New Zealand and sub-Antarctic regions.

c. The northern ETBF area has lower diversity, primarily foraging species like flesh-footed shearwaters.

43. The RAG agreed that resolving species identification from industry records remains a key issue.

Recommendations

44. A number of proposals provided by AFMA to the RAG are focussed on management, rather than science, but the RAG noted that simplification of conditions and wording of conditions would be practical.

45. Regarding the proposed management changes when fishing in the area south of 40°S during the summer TAP season, the RAG agreed:

a. Scientific evidence supported that night setting is the most effective mitigation approach.

b. Managing offal when hauling can help reduce the risk of seabird interactions while hauling; because the data indicates that interactions occur when hauling.

c. Considering a newly proposed move-on rule following 5 seabird interactions and if exceeding the bycatch rate, for the purposes of a mitigation approach and based on the available data, the number of interactions that triggers a move-on response should be less than 7 to reduce the risk to the fishery.

46. Regarding the broader suite of proposed management changes for the ETBF and WTBF, the RAG agreed:

a. For a boat that is exceeding the bycatch and has had a ‘significant’ number of interactions, the number that triggers a requirement for additional mitigation should be reduced from 10. Based on the data provided, the RAG agreed that every number less than 10 is likely to provide continual improvement.

b. The condition relating to unreported seabirds can be managed through a compliance process.

c. Regarding the AFMA suggested requirements for further additional mitigation, when an additional interaction occurs (irrespective of life status), those requirements presented to the RAG would allow AFMA to intervene earlier.

d. A prohibition on offal discharge would be impractical. Managing offal when hauling can help reduce the risk of seabird interactions while hauling; because the data indicates that interactions occur when hauling.

Agenda Item 7. Recent Estimates of NER for the ETBF

47. The RAG noted the presentation by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) on the updated estimates of net economic returns (NER) for the ETBF, based on a new non-survey methodology developed by ABARES, which highlighted:

    a. The previous in-person survey method did not provide consistent and timely economic indicators for the fishery due to declining response rates.

    b. The NER estimate for 2024 was slightly positive but near zero, indicating marginal profitability.

    c. Financial returns have declined due to rising input costs (labour, fuel, inflation, repairs and maintenance) and stagnant or declining output prices.

    d. ABARES will further refine the methodology, including resolving some data discrepancies, and plans to publish results as experimental estimates.

Recommendations

48. The RAG agreed that, for future estimates of NER in the ETBF:

    a. SBT operations contribute significantly to overall profitability in the ETBF and should be included. A revised NER estimate including SBT may be presented at the next TTRAG meeting.

    b. Continued improvement of the beach price estimation is important to ensure NER calculations accurately reflect market conditions, particularly given current data inconsistencies and gaps in catch reporting,

    c. A comparison of the NER estimates to the Economic Conditions Index (ECI) and augmentation of the NER estimate with an indicator of fleet technical efficiency would be useful to clarify the extent to which economic changes are driven by market conditions, operational or management factors.

Agenda Item 8. ETBF and WTBF Ecological Risk Management - Response to the 2025 Ecological Risk Assessments

49. The RAG noted the presentation from AFMA , including an overview of the ecological risk assessments (ERA) process for ETBF and WTBF, recent changes to the ERA methodology including the additional information provided by the ABARES, key results, data on interaction numbers for the high-risk species in the ETBF and WTBF including estimated bycatch rates, marine turtle mitigation and existing management including international obligations and Australia's National Recovery Plan for Marine Turtles 2017-2027and noted the following:

    a. Six marine turtles and two cetaceans were identified as high-risk in ETBF. Three marine turtles and one cetacean were identified as high-risk in the WTBF.

b. The final ERA reports incorporated the additional information on turtle trophic level and post-capture mortality, resulting in changes to the overall risk score for some, but not all turtle species.

c. Turtle bycatch rates in both ETBF and WTBF (0.143/1,000 hooks for loggerhead turtles and 0.043/1,000 hooks for leatherback turtles, respectively) were low in comparison to estimates of global bycatch rates (0.215/1000 hooks, Domingo *et al*. 2025).

d. Turtle interactions increased following the introduction of EM in 2015, then declined.

e. Approximately 20% of turtle interactions were reported as unidentified turtles.

f. Current mitigation measures used in both the ETBF and WTBF include mandatory use of circle hooks, line cutters and de-hookers, bycatch handling guidelines and electronic monitoring; and are compliant with international obligations of the WCPFC and IOTC.

50. The RAG noted that ABARES is undertaking a small project to investigate and identify potential fishery, environmental, behavioural or other factors that might lead to higher rates of turtle interactions with ETBF vessels. Industry participants highlighted similar work being undertaken by Kylie Scales (University of the Sunshine Coast).

51. The RAG discussed the ERA results, the need for and design of management actions to mitigate the impact of the fishery on high-risk species, noting:

a. The high proportion of unidentified turtle interactions limits the precision of risk assessments, and there is potential for improved identification of turtle species through EM footage and fisher education.

b. Further research on understanding post-release mortality for turtles, spatial and seasonal analyses of turtle interactions relative to nesting areas, and the evaluation of mitigation effectiveness is needed to ensure that the impacts are properly understood and addressed to include in future ERAs and to develop ecological risk management (ERM) strategies.

c. Having regard for the current management in place, which is already meeting international standards, there may be limited scope for improving relevant management arrangements to respond to ERA outcomes.

52. Industry members expressed concern about disproportionate regulatory burden compared to other sectors as they are already implementing many best-practice mitigation measures and supported promoting Australia's mitigation efforts internationally.

Recommendations

53. The RAG agreed that further work is required to understand the scope of the fisheries to address the outcomes of the ERAs before providing advice on the proposed ERM response (bycatch strategy, data strategy and research priorities) and agreed to:

a. Review available literature on turtle and cetacean bycatch and mitigation, with respect to AFMA's existing management arrangements.

b. Consider recent outcomes of Tuna Australia's FRDC project (Improving the effectiveness, efficiency and safety of mitigation tools for protected species interactions in the Eastern Tuna and Billfish Fishery) regarding best-practice turtle mitigation.

c. Assess the scope of the fisheries to address the ERA outcomes, and to improve ERA risk outcomes for the high-risk species in future assessments.

d. Provide advice on potential research priorities and management or mitigation actions, at a future meeting of TTRAG.

e. Species identification should be improved where possible and suggested approaches used in other fisheries could be reviewed.

54. Noting concerns about the ERA methodology, a lack of understanding or consultation of recent changes to the methodology and the difficulty in interpreting ERA and residual risk outcomes, the RAG agreed that a technical review of the ERA methodology/process should be undertaken as a research priority.

Action

ABARES and Tuna Australia to confirm that the research projects led by ABARES and Kylie Scales, respectively—each investigating potential fishery, environmental, behavioural, or other factors contributing to elevated turtle interactions with ETBF vessels—are complementary in scope.

Agenda Item 9. ETBF and WTBF Fishery Indicators

55. The RAG noted that the three tropical tuna quota species in the ETBF and all quota species in the WTBF are now managed under multi-season TACC setting procedures; and, per the procedures, 2025 is a non-TACC setting year and a reduced set of fishery indicators were reviewed.

56. The RAG noted the presentations from Dr Ashley Williams (CSIRO) on the catch, effort, size, and CPUE indicators for quota species in the ETBF and WTBF and discussed:

a. Recent trends; data discrepancies; key changes in the fishery relating to the increasing catches and discards of yellowfin tuna and striped marlin in the ETBF; increased catches of SBT in the ETBF; and implications for management and future assessments.

b. Catches of yellowfin tuna and striped marlin were high in 2024 in the ETBF, compared to catches over the last 20 years. Swordfish catch remained stable, with a notable increase in effort and targeting in late 2024. Catch of albacore tuna catch decreased in 2024.

c. Discards of striped marlin in 2024 increased proportionally with catch, due to quota limitations. The RAG noted concerns about the impact of discards on total mortality

of striped marlin and identified a need to better understand the motivation for discarding, and if this has changed over time.

d. The nominal CPUE showed expected trends, but weight-based nominal CPUE was misleading due to underestimation in logbook catch data. The RAG recommended to remove weight-based nominal CPUE analysis from future indicator reports (because they are difficult to interpret) and to rely on catch disposal record data for weight-based analyses.

e. There are potential discrepancies, particularly in 2024, between the conversion rates used for logbook estimates, catch disposal records, processors and stock assessments which should be investigated.

57. Having regard for recent increases in striped marlin catch, discards and CPUE the RAG considered revising the constant catch approach for striped marlin (currently set to 351 t) and discussed the need for management strategy evaluation (MSE) to support a revised striped marlin harvest strategy. This is discussed further under agenda item 10.

58. The RAG noted the industry request that the WTBF yellowfin TACC return to 5,000 t.

Recommendations

59. The RAG endorsed the CPUEs for swordfish and striped marlin in the ETBF, confirming there were no apparent issues, and for the data to be used to inform the application of the modified swordfish harvest strategy and the striped marlin constant catch approach.

60. For other ETBF and WTBF species, the RAG agreed that there were no indicators that demonstrated a significant change in either fishery that would warrant alternative TACC advice.

Action

Industry to provide information on the motivation for discarding striped marlin; and if this has changed over time.

Action

AFMA to investigate potential discrepancies in the conversion rates used across processors, catch disposal records and by CSIRO.

Agenda Item 10. Multi-season TACC Setting Procedure for Striped Marlin in the ETBF

61. The RAG noted the draft multi-season TACC setting procedure for striped marlin in the ETBF, and discussed:

a. Increased catches and discards of striped marlin in the ETBF over the past four years, which may increase in association with yellowfin tuna, raises uncertainty about the stock status, waste and unaccounted mortality.

b. A desire from industry to increase the TACC of striped marlin which may facilitate industry to maximise catches and reduce discards.

c. Quota limitations may contribute to increased discarding of striped marlin.

d. The current constant catch harvest strategy for striped marlin would require MSE tested options, if there was a desire to review it or increase the TACC.

Recommendations

62. Having regard for the current striped marlin constant catch approach and the proposed multi-season TACC setting procedure, the RAG agreed:

a. MSE testing of the striped marlin harvest strategy, including constant catch projections should be considered as a research priority.

b. To discuss the draft multi-season TACC setting procedure for striped marlin in the ETBF at a future TTRAG meeting.

Action

AFMA to provide advice on scope to set a ETBF striped marlin TACC for the 2026 fishing season that is greater than 351 t (and by how much), stepping away from the constant catch approach; or whether a change from the constant catch approach would require formal procedures (such as a review of the harvest strategy and MSE).

Agenda Item 11. ARC Research Priorities

63. The RAG noted that the close-kin mark recapture (CKMR) design project has been endorsed by the Fisheries Research and Development Corporation (FRDC) and is pending contract finalisation of the project.

64. The RAG discussed current research priorities to support the management of the ETBF and WTBF, specifically:

a. The continuation of scientific advice to support harvest strategy development, stock assessments, CPUE standardisation and the annual review of fishery indicators.

b. Development of methods to collect tissue samples during industry size-monitoring activities to proactively support a future, potential CKMR implementation project.

c. MSE and harvest strategy review for striped marlin in the ETBF, as previously discussed at agenda item 10.

d. Having regard for previously raised concerns, the RAG considered a need to review the ERA methodology and process which, due to the wide-ranging implications of ERA outcomes, is a cross-cutting issue across all Commonwealth fisheries.

e. Noting gaps in growth data for small sized swordfish and striped marlin, there is a need to improve growth estimates for billfish. Additionally, there is potential to collaborate with the South Pacific Community (SPC) to improve regional growth estimates.

f. There is a need to improve discard weight estimates in logbook data through industry education on logbook reporting accuracy.

Recommendations

65. The RAG agreed to include the following new research priorities on the 2026-27 ETBF and WTBF Annual Research Statement (**Attachment D**)**:**

a. Provision of scientific advice to support harvest strategy development, stock assessments, CPUE standardisation and the annual review of fishery indicators.

b. Improving growth estimates for billfish.

c. Review of the ERA methodology.

d. MSE for striped marlin in the ETBF, pending further advice from CSIRO on the feasibility and scope.

e. Tissue sample collection to support CKMR studies (FRDC).

66. The RAG agreed that the continuation of scientific advice is the highest, essential priority for the ETBF and WTBF.

Actions

Tuna Australia to discuss with FRDC about how method development for tissue sample collection can be included in the CKMR design project.

CSIRO to provide further advice on the feasibility and scope to undertake MSE for striped marlin.

Agenda Item 12. TTRAG Priorities and Meeting Schedule

67. The RAG reviewed the meeting schedule and priority items for upcoming meetings and noted that the next TTRAG meeting is scheduled for 16–17 September 2025, likely to be held online.

68. Key priorities for the next TTRAG meeting include reviewing additional fishery indicators and stock assessment updates; application of the modified swordfish harvest strategy and striped marlin constant catch approach (in the ETBF); finalising TACC advice for TTMAC and AFMA; and continuing progress under the swordfish MSE workplan.

Agenda Item 13. Other business

Recent developments in science and research

69. The RAG noted the update from Julian Pepperell on several research projects:

    a. A large recreational fishing project on alternate methods for monitoring catch and effort led by the University of Tasmania has compiled 14 datasets from Australia and New Zealand, some dating back 90 years. Objectives include identifying performance indicators and improving monitoring of recreational catch and effort. The project has an intention to run a workshop.

    b. A study on juvenile black marlin revealed potential spawning outside currently known areas; acoustic tagging of sailfish in the Gulf of Carpentaria further shows repeated presence over a 12-month period; and genetic studies by a PhD student at the University of Queensland confirmed sailfish population structure differences across ocean basins.

Analysis on yellowfin tuna quota trading in the ETBF

70. The RAG noted the presentation from AFMA on yellowfin tuna quota trading, catch, discards and market responsiveness in the ETBF over recent years, and discussed:

    a. In 2024, the yellowfin tuna (YFT) TACC was nearly fully caught (98% of the adjusted TACC).

    b. An associated increase in YFT discards was also observed, increasing from 76 t in 2022 to 219 t in 2024. Both YFT catch and discards increased late in the season (October to December). Discarding levels in 2025 so far have remained high.

    c. The number of quota transactions in 2024 was 209 across 71 entities, an increase compared to previous years but noting that the information includes trades between related entities and that a single quota unit can be traded multiple times.

    d. The yellowfin quota market appeared to show a responsiveness to increased catches in 2024 (and increased demand for quota).

    e. Average values may be skewed by very large trades.

71. Industry felt the cumulative trend for 2025 needs to be corrected and this is perhaps due to the related entities doing larger trades at the start of the fishing season.

72. The RAG agreed that this kind of analysis, across all quota species, provides additional and useful context to discussions and recommended:

    a. Trades between related entities should be separated from the rest of the market.

    b. Some trades have fixed prices, which may skew the analysis and don't necessarily reflect the market prices.

Quota carryover provisions

73. The RAG discussed the issue of underutilised quota and the 10% carryover rule and noted:

a. Industry reported difficulty accessing quota to lease due to inflated prices and limited availability. The quota market is perceived as being controlled by a few entities, creating barriers for smaller or independent operators.

b. Over the years, significant volumes of quota have remained unused, potentially affecting stock dynamics and management decisions.

c. There is a need for a clear framework to explain and justify carryover provisions to the AFMA Commission.

d. Further exploration of the quota market and its implications for fishery access and sustainability would be useful.

e. Having regard for the proposal to increase carryover provisions to 20% and the feedback provided by the AFMA Commission, a response from TTMAC to clarify the context and rationale behind current quota trading and carryover practices should be developed.

Close of meeting

74. The Chair thanked the RAG members, invited participants, observers, and presenters for their participation in the meeting, and closed the meeting at 11:55 am on 17 July 2025.

Attachment A – Adopted agenda

DAY 1: Tuesday 15 July 2025, 9:00 am to 5:00 pm		
30 mins 9:00 – 9:30	**1. Preliminaries** 1.1 Welcome and apologies 1.2 Adoption of agenda 1.3 Declarations of interests 1.4 Actions arising from previous meetings 1.5 Out of session correspondence	Chair
45 mins 9:30 – 10:15	**2. Member Updates**	Members
15 mins 10:15 – 10:30	**MORNING TEA**	
30 mins 10:30 – 11:00	**3. Climate and Ecosystem Status Report** Discussed the updated Climate and Ecosystem Report for 2025	CSIRO
30 mins 11:00 – 11:30	**4. Application of Climate Risk Framework to Swordfish in the ETBF** Considered the outcomes of the trial application and provide advice.	AFMA
60 mins 11:30 – 12:30	**5. Swordfish Harvest Strategy Review – OM Conditioning** Reviewed results regarding conditioning of the operating model and progress against the MSE workplan.	CSIRO
60 mins 12:30 – 1:30	**LUNCH**	
120 mins 1:30 – 3:30	**Swordfish Harvest Strategy – MSE results** (Continued)	CSIRO
15 mins 3:30 – 3:45	**AFTERNOON TEA**	
45 mins 3:45 – 4:30	**6. Summary of Seabird Interactions and Proposed Changes to Management Arrangements** Considered updated data on seabird interactions in the ETBF and WTBF; and proposed changes to current management arrangements in response to current and emerging risks.	AFMA
30 mins 4:30 – 5:00	**7. Recent Estimates of NER for the ETBF** Considered experimental work to estimate NER for the ETBF.	ABARES
DAY 2: Wednesday 16 July 2025, 9:00 am to 5:00 pm		
90 mins 9:00 – 10:30	**8. ETBF and WTBF Ecological Risk Management - Response to the 2025 Ecological Risk Assessments** Reviewed of ETBF and WTBF ERA results, residual risk assessment, additional information, management arrangements and proposed ERM response.	AFMA

15 mins 10:30 – 10:45	**MORNING TEA**	
105 mins 10:45 – 12:30	**ETBF and WTBF Ecological Risk Management - Response to the 2025 Ecological Risk Assessments** (Continued)	AFMA
60 mins 12:30 – 1:30	**LUNCH**	
60 mins 1:30 – 2:30	**9. ETBF and WTBF Fishery Indicators** Reviewed of ETBF swordfish CPUE index; annual review of other ETBF and WTBF fishery indicators, noting 2025 is a non-TACC setting year for WTBF and for ETBF tropical tunas.	CSIRO
30 mins 2:30 – 3:00	**10. Multi-season TACC Setting Procedure for Striped Marlin in the ETBF** Considered draft multi-season TACC setting procedure for striped marlin in the ETBF.	AFMA
15 mins 3:00 – 3:15	**AFTERNOON TEA**	
105 mins 3:15 – 5:00	**Spare time** Agenda item 7 was moved to this time due to discussion under the agenda item 6 went overtime. Agenda item 6 was further discussed during this time	
DAY 3: Thursday 17 July 2025, 9:00 am to 12:00 pm		
90 mins 9:00 – 10:30	**11. ARC Research Priorities** Considered the current research needs of the fishery and provide advice on research priorities to be included on the Annual Research Statement for funding in 2026-27.	AFMA
15 mins 10:30 – 10:45	**BREAK**	
45 mins 10:45 – 11:30	**12. TTRAG Priorities and Meeting Schedule** Discussed key priorities for TTRAG	AFMA
30 mins 11:30 – 12:00	**13. Other Business** Discussed issues as raised by any members including recent developments in science and research, analysis on yellowfin tuna quota trading in the ETBF, and quota carryover provisions.	Chair

Attachment B – Register of declared interests, TTRAG 44, 15-17 July 2025

Name	RAG position/ organisation	Declared Interests	Potential conflicts identified at TTRAG 44 and how they were managed
Cathy Dichmont	Chair	Has a consulting company but has no pecuniary interests in the tuna fisheries. Has been appointed as a science member of the USA's Western Pacific Regional Fishery Management Council's Science and Statistical Committee. See an agenda for last month's meeting in Honolulu. This is US centric of course focusing on Federal waters and does not compromise anything with Australian interest or their independence as a chair. She is also a member of COMRAC, NSA and Qld RAC.	Nothing declared
Lara Ainley	AFMA Member	Employee of AFMA, which includes a salary. Manager of the tropical tuna fisheries. No pecuniary interest in tropical tuna fisheries.	Nothing declared
Ashley Williams	Scientific Member, CSIRO	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries. Is the PI for the project on Data Management, Assessment and implementation of Harvest Strategy for Australia's Tropical Tuna and Billfish Fisheries	Declared a potential conflict with agenda item 11 as a research provider. The RAG agreed that they may engage in the discussion, but not in recommending outcomes or decisions.
Brent Wise	Scientific Member, ABARES	Employee of ABARES, involved in aquatic environment and ecosystem research including fisheries. Has no pecuniary interest in the Australian tropical tuna fisheries.	Declared a potential conflict with agenda item 11 as a research provider. The RAG agreed that their influence on a final decision was minimal and that may participate in the discussion in its entirety.
David Ellis	Industry Invited Participant	Is currently the CEO of the industry association, Tuna Australia which includes a salary paid by industry. Is the PI on the following projects:	Declared potential conflicts with agenda items 4, 5, 6, 8, 9 and 11 as the CEO of Tuna Australia and on behalf of Tuna Australia members. The RAG agreed that for agenda items 4, 5, 6, 8 and 9, they may participate in the discussions in their entirety. For agenda item 11, as a research provider,

Name	RAG position/ organisation	Declared Interests	Potential conflicts identified at TTRAG 44 and how they were managed
		• FRDC Project 2020-041. Improving the effectiveness, efficiency and safety of mitigation tools for protected species interactions in the ETBF. • FRDC Project 2021-078. Improving the management of wildlife interactions in pelagic longline fisheries • FRDC Project 2021-063. Future Proofing: Integrating community quota, product supply, product innovation and market diversification in Australia's Tropical Tuna Industry.	the RAG agreed that they may engage in the discussion, but not in recommending outcomes or decisions.
Denham Parker	Invited Participant Scientific, CSIRO	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries. Is the Co-investigator for the Scientific advice management of Tropical Tuna and Billfish Fisheries project Declared an interest in Agenda item 5 and was excluded from formalising any recommendations.	Declared a potential conflict with agenda item 11 as a research provider. The RAG agreed that they may engage in the discussion, but not in recommending outcomes or decisions.
Gary Heilmann	Industry Member	Director of a processing company; no longer holds ETBF boat or quota SFRs	Declared potential conflicts with agenda items 4, 5, 6, 8 and 9 as an industry representative. The RAG agreed that they may participate in the discussions in their entirety.
Julian Pepperell	Scientific Member	Independent fisheries research consultant and representative of the recreational fishing sector. Is involved in projects including monitoring and research on pelagic fish landed at game fishing tournaments, analysis of gamefish tagging data and assessing current data and alternate data collection methods relating to recreational catches of tropical tuna and billfishes.	Declared a potential conflict with agenda item 11 as a research provider. The RAG agreed that they may engage in the discussion, but not in recommending outcomes or decisions.

Name	RAG position/ organisation	Declared Interests	Potential conflicts identified at TTRAG 44 and how they were managed
Pavo Walker	Industry Member	Owner of several ETBF boat SFRs and holds a Coral Sea permit and minor line permit.	Declared potential conflicts with agenda items 4, 5, 6, 8 and 9 as an industry representative. The RAG agreed that they may participate in the discussions in their entirety.
Rich Hillary	Scientific Member, CSIRO	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries. Is the Co-investigator for the Scientific advice management of Tropical Tuna and Billfish Fisheries project Declared an interest in Agenda item 5 and was excluded from formalising any recommendations.	Declared a potential conflict with agenda item 11 as a research provider. The RAG agreed that they may engage in the discussion, but not in recommending outcomes or decisions.
Robert Curtotti	Economics Member, ABARES	Employee of ABARES, involved in fisheries economic research related to the ETBF. Has no pecuniary interest in the Australian tropical tuna fisheries.	Declared a potential conflict with agenda item 11 as a research provider. The RAG agreed that their influence on a final decision was minimal and that may participate in the discussion in its entirety.
Terry Romaro, OAM	Industry Invited Participant	Director of a company that owns ETBF boat statutory fishing rights (SFRs), minor line SFRs, ETBF longline SFRs, 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 SFR holder. Director of a company who owns a fish processing facility in Port Lincoln, and a Director of Tuna Australia.	Declared potential conflicts with agenda items 4, 5, 6, 8, 9 and 11 an industry representative and Director of Tuna Australia. The RAG agreed that for agenda items 4, 5, 6, 8 and 9, they may participate in the discussions in their entirety. For agenda item 11, as a research provider, the RAG agreed that they may engage in the discussion, but not in recommending outcomes or decisions

Name	RAG position/ organisation	Declared Interests	Potential conflicts identified at TTRAG 44 and how they were managed
Stephanie Brodie	Invited participant	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries.	Nothing declared
Don Bromhead	Observer	Employee of ABARES, researcher, no pecuniary interest in the Australian tropical tuna fisheries.	Nothing declared
Stephanie Blake	Observer	Employee of ABARES, involved in scientific research, analysis and stock status determinations for Commonwealth tuna fisheries. No pecuniary interests in any Commonwealth tuna fisheries.	Nothing declared
Natalie Couchman	Invited participant	Employee of AFMA, which includes a salary. Manager of the Climate Adaptation and Strategic Reform team. No pecuniary interest in tropical tuna fisheries.	Nothing declared
Dan Corrie	Observer	Employee of AFMA, which includes a salary. Senior Manager of the Climate Adaptation & Strategic Reform team. No pecuniary interest in tropical tuna fisheries.	Nothing declared
Robert Wood	Observer	Employee of AFMA, which includes a salary. Senior Management Officer in the tropical tuna fisheries team. No pecuniary interest in tropical tuna fisheries.	Nothing declared
Shayer Alam	Executive Officer, AFMA	Employee of AFMA, which includes a salary. Senior Management Officer in the tropical tuna fisheries team. No pecuniary interest in tropical tuna fisheries.	Nothing declared

Attachment C - Summary of Actions and Recommendations

Table 1. TTRAG Action Items. Status and progress

Number	Action	Meeting Raised	Responsibility	Status at TTRAG 44
1.	TTRAG to be provided an update in the new year on the Management Procedure for bigeye tuna.	TTRAG 35	ABARES/AFMA	**NOT YET ACTIONED:** To be discussed at a future TTRAG meeting.
2.	TTRAG Executive Officer to investigate options for holding a teleconference meeting to allow the RAG to consider any additional information and further discuss draft ERA results.	TTRAG 40	TTRAG EO	**COMPLETE:** TTRAG considered the additional information in July 2024. TTRAG met in January 2025 (TTRAG 43), and they agreed to finalise ERA and to proceed with the development of the Ecological Risk Management (ERM) process.
3.	Grahame Williams to provide available tagging data to CSIRO and liaise with New South Wales Department of Primary Industries to enable further data to be available to CSIRO.	TTRAG 41	Grahame Williams and CSIRO	**COMPLETE:** Tagging data has not been obtained yet and there is no immediate need for the data. The RAG considered that the data can be available at any time and therefore, no need to keep it as a standing action item and can be marked as complete.
4.	AFMA to follow up again on the request to have depredation included in e-logs and check whether any information/data on this has come through.	TTRAG 41	AFMA	**IN PROGRESS:** Amendment to the logbook has been drafted, waiting implementation from Data team to be included during next API update.
5.	AFMA to follow up whether it is possible to estimate discard sizes through EM review processes; and understand what would be required from the EM service provider to undertake additional research	TTRAG 41	AFMA	**COMPLETE:** AFMA confirmed with the EM team who advised that estimates of discard sizes are not currently possible. EM currently records piece counts for

Number	Action	Meeting Raised	Responsibility	Status at TTRAG 44
	objectives, like this for example, and assess whether this should be incorporated into long term EM review protocols.			retained and discarded catch. Weights and lengths are not estimated. Lengths for retained catch may be possible in the future; however, a Proof-of-Concept study will need to be conducted to identify if is feasible for the ETBF and WTBF fleets.
6.	CSIRO to investigate size data availability for the WTBF and usefulness as a fishery indicator.	TTRAG 42	CSIRO	**COMPLETE:** CSIRO confirmed that size data for the WTBF is available, which was discussed later during the agenda item 9.
7.	Economic Member to explore the following for future economic reports: • Possibility of building in a composite cost index in place of a proxy (for fuel and bait) in future. • Develop some supporting indicators for the ECI (e.g. cost of freighting good overseas) to give some context to the ECI. • Include volume as well as value int total exports in future reports/presentations.	TTRAG 42	ABARES	**IN PROGRESS:** ABARES has developed a composite cost index approach and relevant freight movement data which will be incorporated into the ECI for the September 2025 meeting. The cost items to be included in the composite cost index will include fuel, bait, repairs and maintenance and labour. At agenda item 7, ABARES presented an update on recent estimates of NER for the ETBF.

Table 2. TTRAG Action Items relating to CPUE. Status and progress as of 1 July 2025

Number	Item	Meeting Raised	Responsibility	Status at TTRAG 44
1.	The RAG recommended using revised data each year and accepting minor changes for the catch summary tables. Any change greater than 1% will be flagged and brought to the attention of the RAG for discussion and advice.	TTRAG 38	CSIRO	**COMPLETE:** CSIRO checks the catch data each year, and if there are any changes to catches in previous years >1%, then inform the RAG. The RAG noted that this reflects the current process and considered the action item as completed.
2.	TTRAG discuss and provide advice at its meeting in March 2024, on priority need to undertake simulation testing of the CPUE standardisation. The RAG identified the following four CPUE refinement priorities: Priority refinement (1-3), further discussion needed for priority 4 simulation testing of CPUE. 1. Continue the implementation of metiers approach. 2. Move from area-based approach to explicit spatial approach. 3. Improve inclusion of oceanography covariates e.g. Eddies. 4. Simulation test of the CPUE standardisation- To be discussed in March TTRAG during research gaps.	TTRAG 38	CSIRO, TTRAG	**IN PROGRESS:** TTRAG 41 agreed that including oceanography co-variates remains a priority but confirmed that this work is paused while MSE testing of the swordfish harvest strategy is underway.
3.	Tuna Australia and CSIRO to investigate potential erroneous logbook reporting regarding 45 hooks between floats. Tuna Australia to follow up with operator if error is identified.	TTRAG 38	CSIRO, Tuna Australia	**IN PROGRESS:** Tuna Australia contacted all ETBF operators regarding 45 hooks per basket. However, have not received any responses to the query. AFMA

Number	Item	Meeting Raised	Responsibility	Status at TTRAG 44
				to verify whether the erroneous entry has been corrected in the logbook system.
4.	AFMA to examine VMS data to check and verify sets reported on logbooks as having mainline lengths greater than 100km.	TTRAG 24	CSIRO, AFMA	**COMPLETE**: At TTRAG 37 (March meeting 2023), CSIRO presented distributions of variables used in the CPUE standardisation to identify appropriate thresholds for outliers/erroneous entries. TTRAG 41 confirmed this was intended to be a once-off check to verify whether 1,000 km mainline lengths are accurate, to allow identification and agreement of a threshold. AFMA examined logbooks to understand mainline lengths used in the ETBF: - There are about 32,210 data entries for mainline length in the ETBF ranging from 0.001-1,389 km, highlighting uncertainty in the data. - The average mainline length for the ETBF 50 km and the median longline length is 52 km. - On 335 cases, the length is greater than 100 km and in only one case the length exceeds 1,389 km. - VMS data does not align well to logbook records and is not useful to verify mainline lengths. However, does indicate that mainline lengths greater than 1,000 km are likely to be incorrect.