Great Australian Bight Resource Assessment Group (GABRAG)

Meeting 2

6 December 2022

Microsoft Teams

Minutes

Contents

Great Australian Bight Resource Assessment Group (GABRAG)

Meeting 2 – 6 December 2022

Mr Lance Lloyd (the Chair) opened the meeting at 09:32 AEDT.

1.0 – Preliminaries

1.1 Welcome and apologies

1. The Chair:

    - Welcomed members and observers to the meeting; and

    - Made an Acknowledgement of Country paying respect to this country's First People and Traditional Custodians of the land throughout Australia. Acknowledging Australia's Traditional Custodians of Country and recognising their continued connection to land, waters and community. We pay our respects to the *Mirning* people, where we fish and study, and their cultures and to Elders past present and emerging.

2. The GABRAG (the RAG) members noted the Acknowledgement of Country, that the meeting was being recorded, and commenced proceedings.

3. The RAG noted the current membership and attendees (Table 1) noting that all attendees were present and that there were no apologies.

Table 1. A list of GABRAG members and other attendees.

Members	Position
Mr Lance Lloyd	Chair
Mr Andrew Penney	Scientific member
Dr Anthony Moore	Scientific member
Dr Eriko Hoshino	Economics Member
Mr Jim Raptis	Industry member
Mr Neil MacDonald	Industry member
Ms Marcia Valente	Industry member
Dr Mark Grubert	AFMA Member
Executive Officer	**Organisation**
Ms Michelle Henriksen	AFMA

Invited Participants	Organisation
Dr Geoff Tuck	CSIRO[1]
Dr Paul Burch	CSIRO
Dr Sandra Curin-Osorio	CSIRO
Dr Caroline Sutton	CSIRO
Mr Mike Gerner	AFMA Staff
Dr Nastaran Mazloumi	AFMA Staff
Observers	**Organisation**
James Woodhams	ABARES[2]
Dr Daniel Wright	ABARES
Mr Daniel Corrie	AFMA Staff
Mr Oliver Lilford	AFMA Staff

1.2 Declarations of interest

4. The RAG attendees declared conflicts of interest as outlined in *Fisheries Management Paper* 1. Members and participants reviewed and updated the Declarations of Interest included at Attachment A.

5. The Chair asked attendees to identify if they had any conflicts of interest with specific agenda items (Table 2).

6. Attendees with a declared conflict of interest for any agenda item left the meeting while the remaining members discussed their participation in these items.

7. The RAG decided that participants would be included for the discussion but would be excused from the meeting for any recommendation made by the RAG.

Table 2. Participation in items where there were declared conflicts of interest.

Agenda Item	Potential conflicts of interest	Discussion Participation	Recommendation Participation
6.0 GABT data collection	Dr Geoff Tuck Dr Paul Burch Dr Sandra Curin-Osorio Dr Caroline Sutton	Present	Not present for any decisions and recommendations

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[1] Commonwealth Scientific and Industrial Research Organisation
[2] Australian Bureau of Agriculture and Resource Economics and Sciences

Agenda Item	Potential conflicts of interest	Discussion Participation	Recommendation Participation
7.0 Assessment for Bight redfish	Mr Neil MacDonald Mr Jim Raptis Ms Marcia Valente	Present	Not present for any decisions and recommendations of Bight redfish Total Allowable Catch (TAC).
8.0 GABFIS	Mr Neil MacDonald Mr Jim Raptis Ms Marcia Valente Dr Geoff Tuck Dr Paul Burch Dr Sandra Curin-Osorio Dr Caroline Sutton	Present	Not present for any decisions on future Fisheries Independent survey (FIS) progression.
9.0 GABT research plan 24-25 priorities	Dr Geoff Tuck Dr Paul Burch Dr Sandra Curin-Osorio Dr Caroline Sutton	Present	Not present for any decisions and recommendations for future research

1.3 Adoption of agenda

8. The RAG adopted the agenda (Attachment B) as final.

1.4 Minutes of previous meeting

9. The RAG noted the final minutes of the 2022 GABRAG 1 meeting of 11 October are currently being finalised and will be available in early 2023.

1.5 Actions arising from previous meetings

10. The RAG specifically discussed the following item:

Action Item 16: October 2020 – Agenda Item 5

Dr Ian Knuckey to analyse the impact of environmental variables on catch rates, using data collected during the GABFIS.

- The RAG noted that the FRDC project will deploy data loggers across several fisheries and contribute to the Integrated Marine Observation System (IMOS). The information collected by these loggers can be used if GABFIS is either continued or discontinued.

- Scientific member, Andrew Penney, highlighted the need to confirm the deliverables from the FRDC project and confirm if there is any revision under the FRDC to look at correlations, or if the project is only about collecting environmental data and feeding it into the IMOS system.

- Industry member, Jim Raptis, noted many trawlers have monitoring equipment collecting seabed temperature data on every shot for the benefit of the skippers. Making this information available is possible if there is advice to record it. Industry to seek this advice on how this data could be made available.

- Following discussions in Action Item 8.0, the RAG supported the removal of this action item due to the FIS not continuing in its current form.

2.0 – Management and Industry updates

2.1 Manager's Update

11. The RAG noted the following updates provide by the Great Australian Bight Trawl Sector (GABTS) manager, Dr Mark Grubert:

- Former graduate Nathan Jackson has joined the Demersal and Midwater Fisheries Commonwealth Trawl Sector team as Senior Management Support Officer and will be based in Canberra. Oliver Lilford has begun a graduate placement with AFMA and will be working within the climate adaptation team based in Canberra.

- Mike Gerner has returned to AFMA as Senior Manager of the Electronic Monitoring (EM) Team.

- AFMA staff attended the Marine Stewardship Council (MSC) assessment meeting of the GABTS on 16 November 2022.

- The Fisheries Research Development Corporation (FRDC) recently funded the project *"Trials of oceanographic data collection on commercial fishing vessels in South East Australia"* developed by Fishwell Consulting. AFMA is aware contract fishing for the FRDC project "*Improving and promoting fish-trawl selectivity in the Commonwealth Trawl Sector and Great Australian Bight Trawl Sector of the SESSF*" was undertaken in late October to early November 2022.

- AFMA acknowledge that the Great Australia Bight Industry Association (GABIA) are seeking advice from CSIRO regarding an optimal harvest size for Deepwater Flathead in the GAB as soon as practicable.

- Terms of the 2022-23 co-management agreement between AFMA and GABIA will be finalised following approval for the Terms of Reference and membership of the GAB Trawl Fishery Data Working Group discussed/approved in Agenda Item 6.0.

12. Scientific member, Andrew Penney, mentioned the current inefficiencies experienced when receiving data out of the AFMA database. AFMA acknowledges this issue with Mark Grubert stating the AFMA Commission is aware of the problem and the organisation is developing ways to expedite the data request process.

2.2 Industry Update

The RAG noted the following updates provided by Industry member Jim Raptis:

- Harsh winter weather has interfered with trawling operations with cold and windy conditions extending through to abnormal months. Deepwater Flathead catches are consistent with good catches of School and Gummy Shark, along with reasonable catches of Orange Roughy. However, some species are absent which has been linked to climate conditions.

- Market prices are high reflecting higher demand and a shortage of landed fish. The industry is seeing a requirement of two-week trips to make it viable. Overall, total landed catch is being impacted by extremely high fuel prices the absence of species.

- GABIA noted some fleets have been down in capacity with boat repairs ongoing due to delays in ordering equipment. It was noted that some boats have been out of action since July 2022, with no progress due until late January 2023.

2.3 Electronic Monitoring (EM) Team Introduction

13. AFMA staff member, Mike Gerner, introduced the EM team and workplan going forward. The RAG noted:

    - AFMA received packages of funding under the previous government to look at data transformation and electronic monitoring. AFMA are currently aware of the limitations to move data out of AFMA which has been raised as a priority.

    - The current program for the Gillnet Hook and Trap (GHAT) fishery and Eastern and Western Tuna fisheries is transitioning away from a single source supplier to a standards-based approach to provide more flexibility in the equipment used.

    - AFMA are looking for opportunities where EM can be used in other fisheries. The EM team aim to work with the Data Working Group (DWG) to investigate where EM can play a role in various spaces. Mike requested feedback or advice on how EM can be feasible and assist in data collection in the GAB fishery.

    - Jim Raptis requested whether the EM team can liaise with Ian Knuckey and explore the possibilities of utilising the OLRAC system and how this can assist with the electronic monitoring of data. Mike Gerner noted this request.

    - Andrew Penney discussed there are aspects which need to be adjusted in replacement of observes to ensure no usable information is lost. Questions have previously been raised from multiple providers where EM systems prefilled information fields (e.g., standardised depths) and skippers didn't manually fill it out causing a loss in data. Andrew Penney asked whether AFMA requests providers to periodically respond to AFMA requirements to update the logging software. Mike noted the comments by Andrew Penney agreeing to look at what requirements are put out to service providers.

3.0 – MSC assessment outcomes

14. Neil MacDonald provided an update on the status of the MSC certification process for the GABTS, including outcomes from the stakeholder meeting on 16 November and the expected timeframe for finalisation.

15. The RAG noted:

    - No third-party stakeholder lodged a comment or expression of interest which was surprising given the challenges the trawl fishery faced when going through the assessment process.

    - The assessment team has now finalised the assessment report which will be sent to third party review through selection by MSC. The report will be provided to the RAG but note scoring does not change from the draft report. At this stage, the fishery meets the required 80% criteria assessments.

    - The report will be with the external review team for two months and then will progress to MSC for assessment and certification.

    - If there is no third-party interest, they will have no chance the appeal the results.

4.0 – Climate change and ecosystem update

16. The RAG noted the following update provided by Dr Nastaran Mazloumi on AFMAs climate change and ecosystem program:

    - The commission endorsed the addition of a standing agenda item, the "Climate and ecosystem update", in RAG and MAC meetings where the annual/seasonal Total Allowable Catch/Effort (TAC/TAE) for different species are considered.

    - The commission endorsed the production of climate and ecosystem status reports including information on climate and ecosystem indicators update, snapshots of fishery climate sensitivity analysis and species projections, and the collation of climate studies relevant to each fishery. Status reports will include climate sensitivity information and consideration of climate impacts into species summaries (or similar).

    - Projections suggest that southern Australian is likely to experience the following conditions in the next 30 years:

        Further increases in average water temperature of up to 1.2°C by 2024;

        Marine heatwave conditions for an additional 200 days a year;

        Oxygen decreases by a further 5% on top of the already 2% decrease since 1950;

        Further 30% increase in acidification; and

        Sea level rise by a further 10-20 cm on top of the already 15 cm increase since 1950.

    - These changes may lead to a decline in primary production of up to 20% and a decrease in the abundance of key demersal target species by 20%. Of the 46 southern Australian fishes examined so far, more than 20% are rated as being highly sensitive to environmental change.

17. Andrew Penney noted the monitoring of environmental indicators can improve, but the history of understanding the indicators as mechanisms of changes in stocks is not a good one. Fish themselves are the best indicators of the environment, but we won't be able to provide predictive relationships between climate indices and fishable fish stocks. In terms of managing the fishery, we are still left to understand how the fish stocks have been impacted which is where opinions become divided.

18. Nastaran responded to Andrew Penney's comments and noted that when assuming, the best approach is to have the best assumption possible whilst being aware of the risks in the short term. We can't do much with a long-term response without having that information available. Best for managers to adapt and respond at the right time even if we don't know understand the full picture.

19. Scientific Member, Andy Moore, recommended analysing the results by the SARDI project in the GAB which may provide useful information.

20. Industry member, Jim Raptis, noted a new challenge to the fishing sector that do not have the level of comprehension to fully understand how this will affect their livelihoods. If the decisions start to dramatically hinge on the ability to survive financially, industry will end up having to determine they do not have the best interpretation of the models being utilised. Industry may need to engage a great cost for independent bodies to provide alternative interpretations.

21. CSIRO staff member, Geoff Tuck, highlighted the global difficulty regarding a standardised model for climate indices. CSIRO will monitor the scientific literature relating to this topic. Industry's offer of EM monitoring of environmental change and the relevance to monitoring of changes in water is important.

22. Andrew Penney noted that Jackass Morwong in the South East Trawl is sure to be environmentally impacted demonstrating strong evidence as an environmental driver, although unsure of which driver this is. The opposite opinion is often expressed by conservation groups who contend that fisherman need to prove it was definitely an environmental effect.

23. AFMA staff member, Daniel Corrie, acknowledged the complexity of the issue and highlighted that AFMA is considering a dynamic B_0 approach. Some species are far less productive now than they were historically (i.e., three or four decades ago) but AFMA is still required to maintain the species at B_{20}, even if the B_{20} has shifted.

24. Daniel Wright noted it would be great to have the information at the stock level in the GAB zone. Also including Jackass Morwong at the stock level rather than management unit.

5.0 – Orange Roughy ageing protocols

5.1 Consistency in ageing protocols

25. The RAG noted a review of the ageing protocols for GAB Orange Roughy and the ageing of otoliths collected in 2021 presented by Dr Paul Burch.

26. The RAG noted the following:

- Fish Ageing Services (FAS) 2009 stocks review was potentially bias in ageing protocols used historically. Review involved re-reading a sample of Orange Roughy otoliths in the GAB and cascade aged in a similar way showing no issues using the ageing data already received for the GAB.

- 357 otoliths were collected from the Eastern GAB in 2021, with 317 successfully aged. The mean age was 39.8 years and the maximum age 106 years.

- Age and length frequency show male and females have similar trends needing to be estimated in the GAB once fishing data is available.

- Sampling needs to develop a consistent time series of age data for the GAB Eastern zone. CSIRO suggests a target of a at least 500 otolith per year. Observers can be requested to record gonad stage information, to enable an estimation of maturity, which is important for this fishery as its likely not a spawning fishery in the West.

- CSIRO propose an age data process to provide a Tier 3 base case assessment and provide this information to the SESSFRAG chairs meeting in 2023.

5.2 Matching otolith sample data to observer data to identify location of capture

27. The RAG noted the review of the Orange Roughy Ageing Metadata and matching of missing location data to the observer logbook presented by Dr Caroline Sutton.

28. The RAG noted the following:

- CSIRO received data from FAS which was recorded by area. For the GAB, there are a total 67 un-aged otoliths. Logbook batch by vessel, day, month, and year provided position data for 58 batches which were added to the database. 10% of the batches provided positional data.

- In the SESSF region, six position matches were errors in the recording or were outside Orange Roughy zones and weren't included. Seventy-five per cent of FAS areas matched positions in the correct areas. Fifty-eight per cent of logbook zone number matched position.

- In the GAB, 100% positional matches occurred for zone number and area. Logbook data often was not informative for batches without positional data. No additional GAB matches and not as precise as expected. For example, the number of matches ranged from 1-10 matches per area.

- In addition to vessel and data of catch, other possible fields to look at include observer number, observer trip, zone, location, and supplier. CSIRO suggest finding better data matches with CDR and offered advice from industry.

- CSIRO requested whether industry have records of fishing locations of up to 20-30 years ago or if this is available from other sources. CSIRO note this would be useful in order to have better positional information before investing in the task of ageing the samples.

29. Industry to work with boat operators to gather positional information from historical records (20-30 years). CSIRO and FAS to provide industry with vessel/date and industry to fill in the gaps.

> **Action Item 1: Industry/CSIRO/FAS**
>
> Industry to gather positional information from historical records (20-30 years) of fishing locations to CSIRO. Industry to receive vessel and date information from CSIRO and fill in the information gaps. FAS and industry to progress out of session within the GABT data working group.

6.0 – GABT data collection

30. Dr Mark Grubert introduced the Terms of Reference corroborated for the GAB Data Working Group along with the proposed list of members to attend.

31. The RAG approved the Terms of Reference and list of membership.

7.0 – Assessment for Bight Redfish

32. The RAG noted the Bight Redfish final base case assessment outcomes presented by Dr Sandra Curin-Osorio.

- A final base case assessment of 2022-23 spawning stock biomass of 66% of unfished spawning stock biomass (compared to 63% in the 2019 assessment). The Spawning Stock Biomass (SSB_o) is estimated to be 4, 535 t (compared to 4,019 t in 2019).

- Two sex model with a single growth curve which was estimated for females and males. Discards were minimum and not included.

- Natural mortality estimated was at 0.1065 (2019 assessment M = 0.1025). Recruitment deviations 1960 to 2007 (was to 1960-2003, in 2019).

- The model was re-run based on the suggestions by the October 2022 GABRAG meeting such as excluding 2002-03 and 2004-05 port length data, incorporating WA state catches (535 t total), estimating growth curve parameters separately for females and males, and excluding the last three GAB-FIS data points (sensitivity).

- Inclusion of the sensitivities had little impact on the finalised assessment for 2022.

- Most fits are comparable to those in the 2019 assessment. Overall, good fits to length and age data but poor fits to CPUE and FIS abundance indices.

- CSIRO recommends a 3-year average RBC of 994 t for 2023-24 to 2025-26.

33. Industry member, Neil MacDonald, highlighted the inconsistencies between CPUE and FIS length data. Clarity was requested on the cause of the failure and if it is something that is able to be adjusted or altered in the Integrated Scientific Monitoring Program (ISMP).

34. CSIRO noted when all information is considered the model is doing well. It was highlighted that for one particular set of series of length data there is a consecutive overfitting and underfitting of lengths. The model required some shifting of the fit line compared to the observed. The under-and-over fitting represents to CSIRO as something to flag as something to pick up from the data. Overall, these assessments have a lot of information going into the model and it is not uncommon to see an inconsistency on this scale.

35. Andrew Penney agreed there is no concern for the trawl fit data as it is driven by only two years and highlighted that length fits are very good. However, he was concerned with the strong residual patterns of consistently over and under of failure to fit with the CPUE. There is a need to think about why the model is overestimating both CPUE and FIS for the last three points, and that if there was a better fit, the model would pull the stock assessment slightly down (yet still above target).

36. CSIRO acknowledges that CPUE is not a great index for abundance. CPUE is fluctuating more than the stock can based on the model estimate of the stock size and what the catches are. Positive signs for the stock from the age structure are providing confidence that unless there is a refuge where older fish are aggregating, the stocks are in a healthy state.

37. The RAG note that the FIS is consistently seeing low abundance when the assessment thinks there should be seeing an increase due to the good recruitment after 1990. This raises questions about whether FIS and Industry are getting low CPUE due availability or catchability problems. However, there is still no concerns as the stock remains above target. It was noted there is such a small area of fish in the GAB from Commonwealth fleets and Industry is catching lower quantities.

38. Industry discussed a trend of observing Bight Redfish in February and March due to spawning. However, the stocks don't often come out to the fishing zones in high numbers causing a variation in the CPUE. An inverse relationship was noted between Deepwater Flathead and Bight Redfish. Industry also highlighted that Bight Redfish are a seasonal species and generally appear during late summer-autumn contributing to the availability/seasonality and the lack of CPUE as a strong indicator.

39. CSIRO noted the inverse relationship between the two main stocks and flagged this as an action to include Deepwater Flathead as a factor for GLM for future analyses and sensitivities.

40. The RAG highlighted the improvements in the quality of CSIRO assessments and level of analysis and praised the work done. It was also noted future analysis should consider whether environmental factors are affecting the seasonal availability cycle

41. Industry discussed their preference of investing in a 3-year cyclical base case assessment and taking this approach more frequently in place of additional sources of data currently used. Industry state this will provide them with more confidence in RBC recommendations in the future.

42. The RAG supported reviewing the assessment at 3-year intervals. The RAG note there needs to be clear indication on the RAGs faith on the utility and confidence in the assessments.

43. The RAG noted the next Deepwater Flathead assessment is due in 2024 dependent on the FIS continuing in 2023. The RAG highlighted the importance of ensuring Bight Redfish and Deepwater Flathead assessments do not occur in the same year.

44. The RAG supported the final base case and suggested that a MYTAC RBC for Bight Redfish based on a 3-year average of 994 t.

> **Action Item 2: CSIRO**
>
> CSIRO to include Deepwater Flathead as a factor for GLM for future analyses and sensitivities.

8.0 – GABFIS

45. The RAG noted the position statements provided by GABIA and AFMA regarding the progression of a GABFIS (FIS) in 2023-24 and whether a FIS should be considered a research priority in 2023-24.

46. Industry received responses from both active and inactive SFR holders, who saw little value in the FIS in terms of cost and merit in the assessment process. Industry would like to see funds directed to other projects. Industry noted that the FIS has been of some use for providing periodic snapshots of other indicators such as monitoring species composition, which is a conversation industry is willing to have in the future with a FIS. Industry first pushed the FIS to determine the extent of the Bight Redfish stocks to set appropriate TACs. Industry state no review was done to take on industry's points to improve the survey. There is concern for no return in investment for this particular fishery and are not willing to fund this further.

47. Economics member, Dr Eriko Hoshino, acknowledged the focus of the FIS to understanding how reducing uncertainty impacts on potential yield in terms of a TAC doesn't apply to GAB cases as it doesn't impact on stock assessment. However, the FIS is favourable for MSC certification where GABIA can directly benefit from certification and market access.

48. AFMA discussed navigating alternative options for opportunities to fund a FIS, or something similar, to ensure that necessary data is collected.

49. Andy Moore noted surveys over a broader area over a single year may be beneficial to see if abundance is different throughout the GAB. This will allow the RAG to see abundance changes throughout the GAB or if the model is not indexing properly, however acknowledges industry would not have to cover these high costs. It was concluded this data is valuable from a scientific member perspective.

50. Andrew Penney raised concerns that if a FIS is not conducted regularly, then no abundance index will be generated for future stock assessments. It was noted that a new strategy to collect the information must be designed as the initial FIS design was to pick up shifts in distribution. A point was made that the two indices of abundance currently used - CPUE and the FIS - suffer from the same problems within the model and there are other availability issues impacting the abundance assessments. Other options such as periodic surveys to collect biologicals (to inform maturity and spawning schedules) may also be beneficial to collect species composition for risk assessments.

51. CSIRO supported the discussions stating that a FIS needs to be done completely or not at all. CSIRO raised concerns on the loss in confidence by Industry in the FIS and wants to re-gain that confidence if the FIS is to continue. Suggests investment forensic investigation of why there is a loss in confidence in and if there is a reason identified which isn't currently clear for why the FIS is not fitting the assessments. Recommended pursuing through a dedicated research project and the GABT data working group.

52. The RAG supported the suggestion by Marcia Valente to focus a study throughout a broader area such as through a South Australian survey to see if the stocks are aggregating inshore. A further suggestion was to also include a survey throughout the GAB as a one-off to clarify the issue of abundance, with a possibility of gaining funding through FRDC.

53. The RAG stated the FIS is well designed scientifically with good value but acknowledge the financial costs to industry. The RAG supported the discontinuation of the FIS in its current form and to begin a process to capture this data through a benchmark survey which may be funded through external bodies.

9.0 – GABT Research plan – 24/25 priorities

54. The RAG noted the research proposals "*Stock assessment for target species in the SESSF for 2023-25*" and "*Fish ageing for SESSF quota species 3-year project ending 2025-26*" that were put forward for consideration by the AFMA Research Committee (ARC). These projects, if funded, will then be included in the GABTS Annual Research Statement for 2024-25.

55. Industry discussed the possibility of a future Tier 3 or Tier 4 stock assessment for Ocean Jackets as they are a marginal species, but worthy of consideration, if industry is to increase their catch. There are plans to scale up production of Ocean Jackets through trap fishing in South Australian waters. If this occurs, then industry expects that SARDI (or a similar consortium) will co-fund a formal assessment.

56. The RAG noted GABIAs recommendation of progressing the analysis of targeted Orange Roughy otoliths and other biologicals be a matter of priority in the near term.

57. The RAG noted the assessment criteria scores pre-filled by AFMA and fully supported the decision to progress both proposals to the ARC, noting, a requirement for an itemised list of cost recovered items.

58. The RAG supported the proposal to bring the Deepwater Flathead assessment forward by one year, thereby providing funds in the 2024-25 budget to for a broader survey design in replacement of a FIS.

59. The RAG recommends including the alternative FIS survey design in the research plan for 2024-25.

10.0 – Other business and action items

60. The Chair noted the proceedings and asked the RAG if there were any further items for discussion.

61. CSIRO presented a catch report for Orange Roughy and asked RAG members if they had any recollections of historical catches and also for their acceptance of the catch series for Orange Roughy in the GAB. Industry offered to search company records to inform the catch series. The RAG suggested that discussions be progressed through the GABT data working group. CSIRO will present a revised catch series analysis at a later date if new information becomes available.

62. All action items from previous meetings were updated and two new items arose from GABRAG 2. The status of action items at the close of the meeting are summarised in Attachment C.

11.0 – 2023 Meeting Schedule

63. The RAG agreed the two meetings would be held in October and November 2023, with the final dates to be decided based on member availability.

12.0 – Close of meeting

64. The Chair thanked the RAG for their contribution and closed the meeting at 16:40 AEDT.

Attachment A – Register of Interests

Name	Membership	Declared interests
Lance Lloyd	Chair	- No interest in the fishery pecuniary or otherwise - Member of GABMAC and SESSFRAG - Board Member, AwF – Aquaculture without Frontiers (Australia) - Director – Lloyd Environmental Pty Ltd. - Research Fellow – Federation University Australia
Andy Moore	Scientific member	- No personal pecuniary interest - Employed by ABARES – interest in sources of funding for research purposes - Involved in the Gemfish stock structure project and the Western gemfish Tier 1 assessment - Senior Research Fellow – University of Queensland - Principal Investigator on the National Recreational Fishing survey - Co-investigator on school whiting stock structure and biology project - Scientific member on GABRAG
Andrew Penney	Scientific member	- Director of Pisces Australis Pty Ltd, an Australian registered marine/coastal research and management consultancy based in Canberra - interests in any opportunities in this regard. - Currently Principal Investigator on FRDC Projects Nos 2017-180: Design and implementation of an Australian National Bycatch Report: Phase 1 – Scoping; and 2019-036: Implementation of dynamic reference points and harvest strategies to account for environmentally-driven changes in productivity in Australian fisheries. - Independent scientific member on the AFMA South East RAG, the Tropical Rock Lobster RAG and the Small Pelagic Fishery RAG.

		Member of the AFMA ERA Technical Working Group.
		• Deputy Scientific Member on the New South Wales Fisheries Total Allowable Fishing Committee Sep 2020 to Sep 2023.
		• No shareholding and hold no positions relating to any other companies, including any fishing companies or industry associations.
Eriko Hoshino	Economics Member	• Employed by CSIRO, Marine Resource Economics Group
		• Adjunct with the University of Tasmania, Tasmanian School of Business and Economics (TSBE) & IMAS
		• Principal investigator (PI) on characterising socioeconomic contribution of the tropical tuna fisheries in Indonesia project
		• Acquiring funding for research purposes
Jim Raptis	Industry member	• GABMAC Industry Member
		• Operates two boats in the GABT Fishery and owns four GABT SFRs as well as quota in the SESSF
Neil MacDonald	Industry member	• Director NMAC (SA) P/L
		• Executive Officer of the Great Australian Bight Industry Association (GABIA)
		• Executive Officer of Charter Boat Association South Australia
		• Executive Officer Southern Fishermen's Association
		• Executive Officer of Saint Vincent Gulf Prawn Boat Owner's Association
		• Executive Officer of Marine Scale Net Fishers Association
		• Committee support services South Australian Rock Lobster Management Advisory Committee & Research Sub-Committee
		• Support services South Australian Professional Fishers Association
		• Chair of CGG Gippsland MSS Scientific Advisory Committee
		• GABMAC Industry Member

		• Gulf St Vincent Prawn Fishery Management Advisory Committee (SVGPBOA) Member • Gulf St Vincent Prawn Fishery Research Sub-Committee (SVGPBOA) Member • Lakes & Coorong Fishery Management Advisory Committee (LCFMAC) • Director of the Australian Council of Prawn Fisheries
Marcia Valente	Industry member	• Committee Consultant for Silver Phoenix Holdings who hold two GABT SFRs
Mark Grubert	AFMA Member	• Employed by AFMA. Manager of the SESSF Trawl Sectors • No pecuniary or other interest
Michelle Henriksen	Executive Officer (EO)	• Employed by AFMA, Senior Management Support Officer, SESSF Trawl sectors. EO of GABRAG and GABMAC. • No pecuniary or other interest
Mike Gerner	AFMA Member	• Employed by AFMA. Manager of the Electronic Monitoring program. • No pecuniary or other interest
Geoff Tuck	Invited Participant	• Employed by CSIRO. Involved in stock assessments • Interest in obtaining funding for future research • Principal investigator (PI) on SESSF stock assessment project • Project leader CSIRO Marine Visual Technologies project team on automated catch detection and species identification • Scientific member of SERAG
Paul Burch	Invited Participant	• Employed by CSIRO, assessment Scientist. Involved with acquiring funding for research purposes • CSIRO representative on the Fisheries Statistics and Information Working Group • PI on the data services contract

Caroline Sutton	Invited Participant	• Employed by CSIRO, Assessment scientist. Acquiring funding for research purposes
Sandra Curin-Osorio	Invited Participant	• Employed by CSIRO, Assessment scientist. Acquiring funding for research purposes
Daniel Corrie	AFMA Staff	• Employed by AFMA, Senior Manager of Demersal and Midwater Fisheries. • No pecuniary or other interest.
Nastaran Mazloumi	AFMA Staff	• Employed by AFMA, Senior Management Officer, EO of SESSFRAG. • No pecuniary or other interest.
James Woodhams	Observer	• Employed by ABARES. No interest, pecuniary or otherwise
Daniel Wright	Observer	• Employed by ABARES. No interest, pecuniary or otherwise
Oliver Lilford	Observer	• Employed by AFMA, graduate • No pecuniary or other interest

Attachment B – Agenda

Time (AEDT): 9:30-16:40

Location: Microsoft Teams

Chair Name: Lance Lloyd

Approximate time	Item	Purpose	Lead presenter
09:30 – 10:00	**1.0 Preliminaries**		
	1.1 Welcome and apologies	For action	Chair
	1.2 Declaration of interests	For action	Chair
	1.3 Adoption of agenda	For action	Chair
	1.4 Minutes from previous meeting	For noting	Chair
	1.5 Actions arising from previous meetings	For noting	Michelle Henriksen
10:00 – 10:30	**2.0 Management and Industry updates**		
	2.1 AFMA update	For noting (30 mins)	Mark Grubert GABIA Mike Gerner
	2.2 Industry update		
	2.3 EM team introduction		
10:30 – 10:45	**Break (15 mins)**		
10:45 – 11:00	**3.0 MSC assessment outcomes**	For noting (15 mins)	GABIA
11:00 – 11:30	**4.0 Climate change and ecosystem update**	For noting (30 mins)	Nastaran Mazloumi
11:30 – 12:00	**5.0 Orange Roughy ageing requirements**		
	5.1 Consistency in ageing protocols	For noting (15 mins)	Paul Burch
	5.2 Matching otolith sample data to observer data to identify location of capture	For noting (15 mins)	Caroline Sutton
12:00 – 12:30	**6.0 GABT data collection**	For advice (30 mins)	Mark Grubert GABIA
12:30 – 13:00	**Lunch (30 mins)**		
13:00 – 14:30	**7.0 Assessment for Bight Redfish**	For advice (90 mins)	Sandra Curin-Osorio
14:30 – 15:30	**8.0 GABFIS**	For advice (60 mins)	Mark Grubert
15:30 – 15:45	**Break (15 mins)**		

Approximate time	Item	Purpose	Lead presenter
15:45 – 16:30	**9.0 GABT Research Plan – 24/25 priorities**	For advice (45 mins)	Mark Grubert
16:30 – 16:35	**10.0 Other business & action items**	For advice (5 mins)	Michelle Henriksen
16:35 – 16:40	**11.0 2023 meeting schedule**	For noting (5 mins)	Michelle Henriksen
16:40	**Close**		

Attachment C – Progress of Action Items from previous meetings

Complete/Redundant	Underway	Yet to start	Need further advice

Agenda Item	No.	Action Item	Responsible entity	Timeframe	Progress
2.1 /Oct 2020	10	As an extension component to the 'non-eastern Orange Roughy data and assessment options' AFMA to consider which lines of evidence and criteria would be used to consider allowing targeted fishing for non-eastern Orange Roughy stocks.	AFMA	As soon as practicable	Underway - AFMA will consider this item subject to finalisation of the non-eastern Orange Roughy assessment and ongoing data collection.
5/Oct 2020	16	Dr Ian Knuckey to analyse the impact of environmental variables on catch rates, using data collected during the GABFIS.	Dr Ian Knuckey	As soon as practicable	Advice required – Analysis of environmental data was not a contracted deliverable in the 2021 GABFIS. Subject to the 2024 FIS being supported, collection and analysis of environmental data can be considered a component of the next survey. AFMA also notes that FRDC has funded the project "*Trials of oceanographic data collection on commercial fishing vessels in South East Australia*" developed by Dr Knuckey. AFMA recommend removing this action item.
4/Oct 2021	2	AFMA to develop a data collection and sampling protocol working group with GABIA before the SESSFRAG data meeting.	AFMA	2022 SESSFRAG data meeting	Advice required – AFMA and GABIA have developed the Terms of Reference and membership of the GAB Trawl Fishery Data Working Group for advice/approval at Agenda Item 6.0.

5/Oct 2021	3	Fishwell Consulting and AFMA to work with Fish Ageing Services (FAS) to identify missing Orange Roughy zone data for archived Orange Roughy otoliths.	AFMA and Fishwell	As soon as practicable	Completed – Caroline Sutton (CSIRO) has finished matching Orange Roughy otolith sampling data to observer data to identify fish capture locations (for noting at Agenda Item 7.2).
5/GABMAC Nov 2021	1	Subject to the FIS being funded in 2024, GABRAG is to consider the sampling and survey design structure of the FIS.	GABRAG		Underway – Subject to the outcome of Agenda Item 8.
2.2/GABRAG Oct 2022	1	AFMA to consider increasing the level of observer coverage in the Danish seine component of the GAB Trawl sector.	AFMA	As soon as practicable	Completed – AFMA deployed an observer on a GAB Danish seine vessel on 5 October 2022 and aims to maintain a level of observer coverage on Danish seine vessels in the GAB proportional to their fishing activities.
4/GABRAG Oct 2022	2	CSIRO to re-run the Bight redfish assessment model with the following sensitivities: 1) sex-specific growth parameters; 2) addition of WA catch data; 3) removal of unusual length data; and 4) omission of the three most recent GABFIS biomass estimates.	CSIRO	GABRAG 2, 2022	Completed – CSIRO has completed this work which is presented at Agenda Item 5.
5/GABRAG Oct 2022	3	Industry to assess the financial situation, quantify the benefits, and re-assess the design of the GABFIS. Industry to determine if FIS will progress in the future before the working group is undertaken. Industry to propose any changes/additions to the survey for consideration by AFMA & the GABFIS working group.	GABIA	GABRAG 2, 2022	Completed – The GABRAG Chair and AFMA received email correspondence from GABIA regarding this matter on 2 November 2022.
5/GABRAG Oct 2022	4	AFMA to generate a value statement for the GABFIS for consideration by industry and the GABFIS working group.	AFMA	GABRAG 2, 2022	Completed – AFMA circulated a value statement to the GABRAG Chair and GABIA on 14 November 2022.

	5/GABRAG Oct 2022	5	Dr Eriko Hoshino to provide the RAG with papers outlining the economics benefits of FIS and how additional assessments translate to economic value.	Dr Eriko Hoshino	GABRAG 2, 2022	Completed – Dr Hoshino furnished AFMA with a list of research papers relating to the costs and benefits of Fishery Independent Surveys on 9 November 2022. Hyperlinks to these works are provided in the AFMA update at Agenda Item 2.1.
	7/GABRAG Oct 2022	6	AFMA to include a data analysis strategy for GAB Orange Roughy in the GAB research plan (including a possible time frame). AFMA to work with FAS and CSIRO to provide a stocktake of what Orange Roughy has been aged and to determine what is needed and incorporate into the fish ageing data plan.	AFMA/FAS/ CSIRO	GABRAG 2, 2022	Underway – This action item is progressing through the work undertaken by Caroline Sutton (at Agenda Item 7.2), and the development of the GAB Annual Research Statement 24-25 (at Agenda Item 9.0).
Action items arising from the December 2022 meeting						
	5.2 Matching otolith sample data to observer data to identify location of capture	1	Industry to receive vessel and date information from CSIRO and fill in the information gaps from Orange Roughy historical records of fishing locations. FAS and industry to progress discussions out of session via the GABT data working group.	CSIRO/Industry/ FAS	Before August data meeting	
	7.0 Assessment for Bight Redfish	2	CSIRO to investigate including Deepwater Flathead catch as a covariate for Bight Redfish in the CPUE standardisation (and vice versa) for GLM for future analysis and sensitivities.	CSIRO	The year before the next Bight Redfish assessment	