Australian Government

Australian Fisheries Management Authority

Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group (SESSFRAG) Chairs' Meeting 2024

Meeting minutes

9–10 April 2024
Online

Table of Contents

Agenda

Location: MS Teams
Chair Name: Dr Cathy Dichmont

Agenda Item	Purpose	Presenter
1. **Preliminaries**	For information	Chair / EO
a. **Acknowledgement of Country, welcome and apologies**		
b. **Adoption of Agenda**		
c. **Declarations of interest**		
d. **Minutes from previous meetings**		
e. **Actions arising from previous meeting**		
2. **SESSF History document update**	For advice	Sally Weekes
3. **Update from the RAG Chair's and AFMA**	For advice	RAG Chairs/ Sally Weekes
4. **Harvest strategy update**	For noting	Dan Corrie
5. **Outcomes of the management strategy evaluation for Dynamic Teir 4**	For advice	Pia Bessell-Browne
6. **Outcomes of the Pink Ling and Blue-eye working group**	For noting	Geoff Tuck
7. **Electronic Monitoring trial update**	For noting	Euan Provost
8. **Catch history project**	For advice	Paul Burch
9. **South East Australia Marine Ecosystem Survey-Voyage 1 Results**	For noting	Rich Little
10. **Buffer work report**	For noting	Paul Burch
11. **Item was moved to item 7.**		
12. **Stock assessment timetable and trigger species considerations**	For advice	Mark Grubert
13. **Upper-Slope Dogfish Survey results**	For noting	Franzis Althaus
14. **Update on School Shark close-kin assessment**	For noting	Robin Thomson
15. **Management of climate change impacts on the SESSF**	For noting/advice	Beth Fulton
16. **2025-26 Research Statement**	For advice	Sally Weekes
17. **2024 Data meeting dates**	For advice	EO
18. **Other Business**	For Noting/Advice	Chair/ Members

Agenda item 1: Preliminaries

1.a. Acknowledgement of country, welcome and apologies

Dr Cathy Dichmont (the Chair), welcomed members, invited participants and observers. The Chair opened the meeting at 9:03am with an Acknowledgement of Country. Dr Geoff Liggins is an apology for this meeting.

Table1. Meeting attendees

Chair	Dr Cathy Dichmont	
SESSFRAG members	Mr Lance Lloyd, Scientific Member (GABRAG[1] Chair)	Dr Sarah Jennings, Economic member
		Ms Sally Weekes, AFMA member
	Dr Paul McShane, Scientific Member (SERAG[2] Chair)	Dr Beth Fulton, Scientific member (CSIRO)
	Mr Sandy Morison, Scientific Member (SharkRAG Chair)	
Invited participants	Dr Franzis Althaus, CSIRO	Dr Miriana Sporcic, CSIRO
	Mr Neil MacDonald, Industry	Dr Robin Thomson, CSIRO
	Dr Paul Burch, CSIRO	Dr Geoff Tuck, CSIRO
	Dr Pia Bessell-Browne, CSIRO	Dr Ian Knuckey, Fishwell Consulting
	Dr Rich Little, CSIRO	
	Mr Simon Boag	
AFMA	Dr Mark Grubert	Mr Nathan Jackson
	Ms Cate Coddington	Dr Euan Provost
	Mr Tamre Sarhan	Mr Dan Corrie
	Mrs Jacqueline Lyons	Ms Katrina Marchant
	Ms Michelle Henriksen	
Observers	Dr Daniel Wright, ABARES[3]	Dr Tim Emery, ABARES
	Dr Geoff Liggins, NSW DPI[4]	
Exec. officer	Ms Jennifer Power-Geary, AFMA	

[1]GABRAG –Great Australian Bight Resource Assessment Group, [2]SERAG –South East Resource Assessment Group, [3]ABARES –Australian Bureau of Agricultural and Resource Economics and Sciences, [4]NSW DPI- New South Wales Department of Primary Industries.

1.b. Adoption of agenda

SESSFRAG noted the promotion of agenda item 11 to item 7 due to a delay in preparation of the paper for item 7. During the meeting SESSFRAG requested Mr Dan Corrie provide additional information on the climate risk framework after agenda item 15. The RAG adopted the agenda (Page 4) as final.

1.c. Declarations of interest

SESSFRAG followed the conflict-of-interest management process (as outlined in *Fisheries Administration Paper 12*) and updated the Declarations of Interest (**Attachment A**) via email. The Chair also called for participants to declare any further changes at this time, but none were declared**.**

SESSFRAG considered the potential for some pecuniary interest for particular research and industry attendees with agenda items listed in Table 2. SESSFRAG recognised the attendees' knowledge and ability to contribute to the discussions and agreed that it was appropriate for them to participate in the discussion but that formal recommendations would be finalised by those members with no conflicts.

Table 1: Agenda items with declared conflicts of interest

Agenda Item	Declared conflict
5. Outcomes of the Management Strategy Evaluation for Dynamic Tier 4	Mr Simon Boag Dr Ian Knuckey Mr Neil MacDonald
12. Stock assessment timetable and trigger species considerations	CSIRO Dr Ian Knuckey
16. 2025-26 Research Statement	CSIRO ABARES Mr Simon Boag Dr Ian Knuckey Mr Neil MacDonald

1.d. Minutes of previous meeting

The RAG endorsed the minutes of the August 2023 Data Meeting as a true representation of the outcomes of that meeting.

1.e. Actions arising from previous meetings

The status of existing action items is detailed in **Attachment B**.

AFMA provided the RAG with an update on the status of action items arising from previous SESSFRAG meetings. The following points were discussed:

- *Action item 31 SESSFRAG Chairs' 2021 Item 16- "AFMA to compare discard data reported in logbooks, to those recorded by the ISMP program, to determine the accuracy of operator reported discards."*

  AFMA suggested removing or re-writing this action item given that information on discards will be collected through the electronic monitoring (EM) trial. However, SESSFRAG considered that it would take too long for AFMA to collect sufficient EM data and requested that AFMA provide a comparison report with the existing logbook data to SESSFRAG no later than the August data meeting 2024. SESSFRAG also requested that a similar comparison of discard data be presented when more EM data is available.

- *Action item 4 SESSFRAG Data' 2022 Item 6- "SERAG to consider the outcomes of the Jackass Morwong CKMR scoping project and provide advice on future priorities for CKMR research."*

  SESSFRAG supported the removal of this item noting that the collection of tissue samples from Blue-Eye Trevalla and Redfish for Close-Kin Mark-Recapture (CKMR) analysis has been prioritised, and there are no current plans to sample Jackass morwong due to limited resources.

- *Action item 22 SESSFRAG Data' 2022 Item 9- "AFMA to investigate discrepancies in logbook and CDR data for Bight Redfish, Deepwater Sharks, School Shark and Eastern School Whiting in recent years and report back to the relevant RAGs in 2022"*

SESSFRAG recommended AFMA to work with Paul Burch to investigate the discrepancies for each species and consider solutions. Further, AFMA will also provide a document showing the thresholds that AFMA use for quality assurance checks to SESSFRAG members.

Agenda item 2: SESSF History document update

Purpose of the agenda:

To provide SESSFRAG with the updated Southern and Eastern Scalefish and Shark Fishery (SESSF) management history document and seek advice on any further items for inclusion.

SESSFRAG advice and recommendation:

- SESSFRAG accepted the inclusion of the $20M structural adjustment package administered by the Department of Agriculture, Forestry and Fisheries (DAFF), noting the surrender of 21 SESSF trawl boat SFRS (36 remain). Surrendered boats did not fish between 1 May 2023 and the finalisation of payments on 30 June 2023.
- SESSFRAG agreed that additions to this document should consider a wider spectrum of major events (e.g., major seismic surveys, wind farms and marine parks) in the future.

Agenda item 3: Update from the RAG Chairs and AFMA

Purpose of the agenda:

To provide a summary for SESSFRAG to note on the progress of the SERAG, SharkRAG, GABRAG and to receive an update from AFMA.

SESSFRAG noted:

Updates from Mr Lance Lloyd (GABRAG Chair):

- GABRAG undertook an assessment of Bight Redfish in 2022 and reviewed the MYTAC indicators in 2023 recommending:
  - A 999 t recommended biological catch (RBC) for 2024-25 SESSF season,
  - the extension of the multi-year total allowable catch (MYTAC) period from 3 to 4 years.
- GABRAG undertook a Deepwater Flathead assessment in 2023 and recommended a 2024-25 RBC of 1,209 t over four-years. GABRAG considered the concerns of low recruitment of Deepwater Flathead and recommended the following precautions:
  - For the MYTAC working group to monitor catches and indicator data,
  - Future catches in excess of 1,000 t to be a trigger for an early stock assessment.
  - a MYTAC period of three years with the next stock assessment for be brought forward from 2028 to either 2026 or 2027.
  - The Great Australia Bight Trawl fishery (GABTF) achieved MSC accreditation.
  - AFMA started fitting vessels in the GAB with EM gear.

Updates from Mr Sandy Morison (SharkRAG chair):

- SharkRAG considered the Gummy Shark assessment and noted:
  - Gummy Shark stock remain around target levels,
  - the RAG discussed concerns regarding the fit of growth curves to the model and how well they fitted the observed data, and this will be explored before the next stock assessment.
- SharkRAG provided advice for the School Shark bycatch TAC and an updated School Shark assessment, noting:
  - The RAG's approach to determine the unavoidable catch of school shark, assumes similar effort to that of the Gummy Shark fishery and allows for the potential abundance of School Shark (as suggested by the most recent CKMR assessment). Recent high state catches in Western Australia were identified during an out-of-session discussion when determining

the School Shark TAC with members. The RAG recommended not including state catches to remain consistent with previous methods of setting the unavoidable School Shark bycatch. The SEMAC considered two options: 1) the RAG approach of not including state catches and 2) an alternative approach including all sources of mortality using the results of the most recent Close-Kin Mark-Recapture (CKMR) assessment to set a bycatch TAC that does not prevent the stock from recovering. The Commission endorsed the SEMAC advice to adopt the second option and therefore an 8% reduction in the School Shark bycatch TAC.
  - o The Gummy Shark TAC was subsequently reduced by 8% to constrain the fishing effort and ensure the School Shark RBC was not exceeded.

SESSFRAG discussed:

In relation to the School Shark and Gummy Shark TAC setting process for the 2024-25 season:

- The Commission determined TAC's that differed to the SharkRAG advice which resulted in lower School Shark TAC and downscaling of the Gummy Shark TAC.
- Industry have concerns regarding the reduction of the Gummy Shark TAC due to the catches of School Shark by state fishers and the potential impacts of this on industry.
- AFMA will continue consultation with state fisheries to assist in constraining School Shark catches.

SESSFRAG noted:

Updates from Dr Paul McShane (SERAG Chair):

- SERAG considered assessments for Silver Trevally, Deepwater Shark (east and west stocks), Blue-Eye Trevalla (slope) and Mirror Dory.
- SERAG noted:
  - o The Silver Trevally assessment was completed in collaboration with NSW Fisheries.
  - o The current assessment as a Tier 1 model is perceived to lack the exploration of uncertainty that a full Tier 1 assessment would usually provide.
  - o A Silver Trevally working group considered issues relating to various catch per unit effort (CPUE) data sets, recruitment uncertainty, and age data.
  - o Tier 4 assessments of Mirror dory, Blue-Eye Trevalla (slope), Deepwater Shark (east and west).
  - o A Dynamic Tier 4 is being explored for Deepwater Sharks and Blue-eye Trevalla but not yet considered suitable.
- SERAG recommended that Dynamic Tier 4 assessments continue for both Western and Eastern Deepwater Shark stocks but that additional work (including Management Strategy Evaluation (MSE) testing) be completed before the method can be formally adopted.
- SERAG considered the effects of closures noting that about half the stock of Deepwater Sharks are protected and suggested that targets applicable to open areas be considered in the context of the whole stock not just the exploitable biomass.
- SERAG noted in relation to the RBC advice provided:
  - o There is merit in progressing Blue-Eye Trevalla (slope) to a Tier 1 assessment to better understand stock dynamics and quantify uncertainty.
  - o The identification of undocumented catches during the catch history project has potential implications for Dynamic Tier 4 assessments, which are being considered by the Blue-Eye Trevalla and Pink Ling working group.
  - o CPUE of Mirror Dory has increased significantly over the last two years, which has increased the recommended RBC. This increase may be constrained through the application of the large change limiting rule.
  - o For Orange Roughy, there is a need to validate catch and age models and data sources for data-limited stocks.
  - o There is a project proposal to evaluate methods for using otolith weight as a proxy for age in the assessment of data limited Orange Roughy stocks.
- SERAG considered requirements to provide RBC advice for Hagfish if and when it transitions from exploratory fishery to a managed fishery.

- SERAG discussed rebuilding species, the impacts of closures, structural adjustments, and the general issue of spatial and temporal changes to management and their effects on rebuilding species, particularly:
    - Jackass morwong
    - Eastern Gemfish
    - John Dory
    - Eastern Redfish
    - Blue Warehou
- SERAG noted:
    - Climate change and the prolonged upwelling from the Great Australian Bight might be linked to the El Nino and a potential factor in the non-recovery of some stocks and an important consideration in the dynamic B_0 project.
    - Projects looking at the effects of spatial closure and managing stocks outside the closures is of interest.

Updates from Ms Sally Weekes (AFMA):

- The outcomes of the AFMA Commission meeting:
    - Commission appreciated the quality of advice coming from the RAGs,
    - The amendments to the SESSF Harvest Strategy were adopted, including the 'trigger species' category and associated criteria.
    - The Commission deviated from RAG/MAC advice in relation to the lower Gummy and School Shark TAC and Deepwater Flathead TAC.
- SESSFRAG discussed the implication of the Commission's decision to reduce the Deepwater Flathead TAC from RAG advice, on the basis of evidence of low recruitment and that this does have implications for future RAG advice. Updates from AFMA:
    - The review of the Harvest Strategy Policy continues.
    - Eastern Redfish is being considered for listing under the EPBC Act with a decision to be made by the Minister for the Environment in late 2025. AFMA will provide a submission to Threatened Species Scientific Committee (TSSC) for consideration in June 2025.
- The structural adjustment in the Commonwealth Trawl Sector (CTS) and additional trawl closures implemented in 2023 appear to be reducing catches of at-risk species.

Agenda item 4: Harvest strategy update

Purpose of the agenda:

For SESSFRAG to note an update provided by Mr Daniel Corrie on the recent changes to the SESSF Harvest Strategy Framework, and progress towards a multi-species harvest strategy (MSHS).

SESSFRAG noted:

- The AFMA Commission approved updates to the SESSF Harvest Strategy at its March 2024 meeting to incorporate a 'Trigger Species' category following consultation with relevant advisory committees and a MSHS workshop in October 2023.
- Phase 2 of the MSHS project is expected to be undertaken through an FRDC-funded project.
- The transitional arrangements for the existing harvest strategy were supported by SESSFRAG and the relevant advisory committees in 2023 and SEMAC and the Commission in 2024.
- SESSFRAG previously agreed to the changes to the assessment scheduling. These changes included scheduled assessments in 2024/25 to be undertaken whilst the stock assessment schedule would be reset from 2026 based on a 2 or 4 year MYTAC.
- Trigger species and the set criteria is currently being explored as a part of the MSHS project.
- The changes to the MYTAC process will be implemented in 2024.
- ComRAC considered the proposal at its April 2024 meeting. AFMA is expecting feedback on revisions to the scope before it is supported.

SESSFRAG discussed:

- The climate risk framework allows an assessment of climate impacts at the species level, and can be used to support the development of 'climate-ready' harvest strategies.
- The climate risk framework considers the results from the MSE testing and how climate change impacts can be considered and mitigated for those species
- The timeframe for phase 2 of the harvest strategy being unclear as it is dependent on the scope and level of support for the work.
- Exploring all components of Phase 2 (e.g., HSP review, climate impacts, buffers etc) and ensuring they are appropriately considered before implementing it to ensure it is complete.

Action item 1 -

MSHS project team to present results of MSE testing for the 'trigger species' approach. In that regard, SESSFRAG should then consider how trigger species impacted by climate change can be effectively addressed under the AFMA Climate Risk Framework.

Agenda item 5: Outcomes of the Management Strategy Evaluation for Dynamic Tier 4

Purpose of the agenda:

CSIRO presented an updated MSE of the Dynamic Tier 4 assessment method following a request from SERAG to revise the biomass assumptions during the reference years.

SESSFRAG noted:

- The Dynamic Tier 4 method was developed as part of the MSHS project. The Dynamic Tier 4 assessment can be fitted to multiple CPUE time series.
- Three error implementation options have been developed, including:
  - Deterministic
  - Penalised likelihood and;
  - State space
- Dynamic Tier 4 assessments were attempted in 2023 but were not used for management purposes due to concerns regarding assumption that biomass was B_{MSY} (i.e. B_{40}) during the reference years and interactions with the 20:35:48 hockey stick harvest control rule. Further testing has been undertaken to assess the assumption that biomass was B_{MEY} (i.e. B_{48}) during the reference years and whether this change resulted in any differences in the performance of the method.
- MSE testing was conducted by CSIRO and performance of the Dynamic Tier 4 was compared against the empirical Tier 4 and Tier 1 management strategies. Tiger Flathead, Silver Warehou, School Whiting and a non-overfished version of Redfish were included in the simulations.
- The impact of incorrectly specifying reference years was investigated as well as how sensitivity to this assumption differs between Tier 4 and Dynamic Tier 4.
- The results of the three error variant options were presented to SESSFRAG. Dr Bessell-Browne suggested the most statistically rigorous option, which performed as intended should be considered for use. There was adverse behaviour from the state space option, which tended to estimate process error near zero and fitted like the deterministic variant. CSIRO used the penalised likelihood variant to compare performance against other management strategies (Tier 1 and Tier 4) and has recommended it for Dynamic Tier 4 use for moving forward.
- The MSE found that Tier 1 had the best performance across the range of investigated performance criteria followed by Dynamic Tier 4 (penalised likelihood) and then Tier 4. All Tier 1 and Dynamic Tier 4 probabilities were below the CFHSP 10% threshold of falling below the limit reference point assuming the reference years are correct.
- The probabilities of experiencing a 0 t RBC were highest for the Tier 4 management strategy.

- Catch variability was highest for Tier 4 with Tier 1 and Dynamic Tier 4 showing similar results.
- Incorrect reference year specification had a larger impact on the Tier 4 results compared to the Dynamic Tier 4 results.
- Since the last update, MSE results have shown improved performance metrics for Dynamic Tier 4 compared to the Tier 4 management strategy, when using the same reference year assumptions. Dynamic Tier 4 had reduced variability in RBCs, reduced sensitivity to chosen reference years with fewer assumptions required and the option to fit multiple CPUE series (which may be beneficial for some species in the SESSF).
- Penalised likelihood was the best performing error variant option.
- Dr Bessell-Browne explained a review of the historical catch series and their agreed reference years is needed before Dynamic Tier 4 can be used as an assessment method, because the Dynamic Tier 4 method fits to the complete exploitation history, not just the catch during the reference years.
- It was highlighted that some reference years and assumptions no longer make sense for species such as Deepwater Shark that were previously assumed to be in an unfished (i.e. B_0) state during the reference years, but the historical catch series extends 20 years prior to those reference years. Dr Bessell-Browne suggested this may resolve some inconsistencies noted in last year's Dynamic Tier 4 Deepwater Shark assessment.

SESSFRAG discussed:

- Some assessment methods are more appropriate for use for some species than they will be for others due to variation in the bias in CPUE indices and the level of associated uncertainty. The use of CPUE as an index of abundance continues to be a concern and must be considered when deciding on appropriate assessment methods to be applied.
- Concerns were raised regarding the use of fishery dependent CPUE as an index of abundance for many species, as this relationship is questionable especially when considering recent management amendments and area closures. It was noted that this will impact both Tier 4 and Dynamic Tier 4 assessment methods. Members agreed that these considerations should be addressed as best as possible when deciding on assessment types for individual species.
- There was overall agreement that the Dynamic Tier 4 penalised likelihood assessment should be an accepted assessment method in the SESSF. However, it was noted that it should be applied on a case-by-case basis dependant on the quality of data, if the CPUE is considered to represent relative abundance and there is an agreed catch history. Members agreed the appropriate method adopted for each species should be discussed at their respective RAGs due to the familiarity of those members with the relevant species' information.
- The appropriateness of using the Dynamic Tier 4 assessments for Deepwater Shark and Blue-Eye Trevalla was discussed.
- AFMA noted that five species are to be assessed using Tier 4 approaches in 2024 and recommended that Deepwater Shark East and West and Blue-Eye Trevalla be assessed as a Dynamic Tier 4 and Mirror Dory and Oreos as empirical Tier 4. This would allow transition into the new method. CSIRO noted Oreos currently do not have an agreed catch history and time constraints, necessitating the use of an Empirical Tier 4. Members agreed to this transitional approach, however, requested that an Empirical Tier 4 be run alongside so differences could be observed to inform future decisions.

SESSFRAG advice and recommendations:

- In principle for Tier 4 species, the assessment method will be transitioned to use Dynamic Tier 4. This is based on MSE results that have shown that this approach has improved performance compared to the empirical Tier 4 because it provided improved performance statistics, reduced variability in RBCs and reduced sensitivity to chosen reference years with fewer assumptions required and the option to fit multiple CPUE series. This transition should, in practice, be applied on a case-by-case basis;

- As with all assessments, there should be a review that each species meets the assumptions of the assessment approach, especially with respect to CPUE indexing abundance;

- Reference periods were recommended to be reviewed for all Tier 4 species.

- All Dynamic Tier 4 assessments require an agreed historical catch time-series.

- For 2024, Blue-Eye Trevalla and Deepwater Shark (E and W) will be test cases for the application of the Dynamic Tier 4. However, the empirical Tier 4 will also be run as part of bridging analyses.

Agenda item 6: Outcomes of the Pink Ling and Blue-Eye Trevalla working group

Purpose of the agenda:

In preparation for assessments of eastern Pink Ling and Blue-Eye Trevalla (slope) in 2024, a working group, a sub-group of SERAG, was established to ensure data, parameters and model structures were appropriate for these two assessments. The decisions and outcomes and of the working group were presented by Dr Geoff Tuck.

SESSFRAG noted:

- Patrick Cordue declined an offer to undertake the Pink Ling assessments in 2024 and so this work will be completed by CSIRO. A working group was created to ensure that the transition from the CASAL model used by Patrick Cordue, to the Stock Synthesis platform used by CSIRO, occurs smoothly and in an agreed manner.
- Due to the complexity of the transition from CASAL to Stock Synthesis it was decided to proceed with the eastern Pink Ling assessment only, as the western stock of Pink Ling was assessed at 91% of B_0 in 2021.
- This group is also undertaking preparatory work for the Dynamic Tier 4 assessment of Blue-Eye Trevalla this year.
- The first step in the transition of the Pink Ling assessment will be to use the input data and parameters applied by Patrick in CASAL to the Stock Synthesis platform. If the results are comparable then the usual process of including updated/ new data and process will be undertaken. However, if there are major departures from what would be expected when bridging, then further exploration will be needed.
- Updates for Pink Ling:
  - The working group has met twice in 2024.
  - Regarding the trawl CPUE, differences exist between data and model structures used by Patrick Cordue and standard methods applied by CSIRO. However, trends in standardised CPUE were found to be similar.
  - Access to the CASAL input files means replication can occur using the data and model parameters Patrick Cordue used. It was noted that there was some data in the input files that was not documented in the report.
  - CSIRO will use an updated CPUE series following the standard CSIRO approach. It is also developing a non-trawl CPUE series, that includes trials of incorporating Blue-Eye Trevalla catches as a covariate.
  - CSIRO noted that in the 2021 assessment, catch is well documented, however, discards were not estimated. Initial investigation of discard data revealed some high discard rates which are being investigated.
  - Little port length frequency data was used by Patrick Cordue. This will be included in the 2024 assessment.
  - Dr Bessell-Browne suggested best practice is to estimate discard proportions within the assessment and estimate a retention function. This takes into account whether any size based discarding has been occurring.
  - The 2021 assessment used dome-shaped age-based selectivity for the trawl fleet. CSIRO plans to use length-based selectivity.

- Updates for Blue-Eye Trevalla:
  - The assessment is scheduled to be updated in 2024
  - The empirical Tier 4 assessment uses catch and CPUE from 1997, however removals are known to commence from approximately 1950-60's. The working group will review an extended historical catch series for use in the 2024 assessment.
- Methods are being developed to explore using Pink Ling catch as a covariate in the GLM for Blue-Eye Trevalla (non-trawl) CPUE standardisation and there will be exploration of the targeting behaviours of fishers for both Pink Ling and Blue-Eye.

Agenda item 7: Electronic Monitoring trial update

Purpose of the agenda:

For SESSFRAG to note the progress on the Electronic Monitoring (EM) trials being undertaken in the CTS and Great Australian Bight (GAB) as presented by Dr Euan Provost.

SESSFRAG noted:

- The project status update in the CTS, including**:**
  - The project plan has been approved.
  - Procurement of hardware is at various stages.
  - A governance structure has been determined with reporting periods still to be established.
  - Installations are scheduled to start in April 2024.
  - A business reference group (BRG) has not commenced yet for the CTS trial.
  - Only travel has been spent from the financial allocation for this trial.

- Certain vessels will be allowed into the Murray Dogfish closure in 2024 on a trial basis under the restriction of having EM for data collection.

- The project status in the Great Australian Bight:
  - One EM system has been installed on a vessel in late December with two more to be installed in April 2024.
  - The final vessel's EM will need to be installed later, in stages, when available.
  - Delays in contracting and procurement of hardware has impacted installation times but has not impacted the project completion date.
  - Only travel has been used from the budget so far and the actual costs of the installation and hardware will be known next month.
  - There is an observer trip planned where the EM data will be compared directly to the observer data.
- The data to be collected by EM cameras:
  - The comparison of data between EM and observer will be similar to what observers currently collect e.g., discard composition, catch composition, length measurements, and Threatened Endangered and Protected species interactions.
  - Camera placement has been carefully considered to achieve optimal data collection and minimise the need to estimate catch numbers and catch composition.
  - The EM review will be conducted by AFMA personnel.

Agenda item 8: Catch history project

Purpose of the agenda item:

Uncertainty around catch histories for SESSF stocks can lead to incorrect or biased stock assessment results which could impact management decisions. This project seeks to develop, and document agreed catch histories for SESSF quota species.

SESSFRAG noted:

- The background of the catch history project:

    o Bias in catches can impact assessment outcomes,

    o For many stocks, catch data in the AFMA database differs to that used in stock assessments and the reasons are not always available,

    o Knowledge exists in some reports and scientists who were involved in the early days of the fishery and are nearing retirement.

- The objectives of the catch history project are:

    o To hold a workshop with the scientists who developed the catch histories to discuss potential issues,

    o Prepare a report that documents current accepted catch histories, alternative catch histories, presents the unmodified catch data from the AFMA database and update the report as additional information is identified,

    o Make available the source literature and spreadsheet to SESSFRAG.

- The reasons for uncertainty with existing catch histories:

    o The SESSF was established in 1985 there were already established state fisheries on the continental shelf which led to:

        ▪ Separate reporting requirements for each jurisdiction which overlapped with some species when Commonwealth fisheries were established,

        ▪ Catch records for some stocks date back to the early 1900's,

        ▪ Dual endorsed vessels after 1985 reporting both to State and Commonwealth Governments,

    ▪ In addition, there are;

        ▪ Issues relating to logbook entries and quota reporting issues,

        ▪ Reporting to a species level,

        ▪ Burst bags which lead to unreported discards,

        ▪ Generally, Tier 1 species have the most documentation with lower Tiered stocks having less.

- The summary of the workshop held in Hobart in September 2022 focused on shelf and slope stocks on the East coast:

    o Scientists from NSW, VIC and TAS, AFMA and other scientists in the Commonwealth were in attendance.

    o Each species was examined including their stock structure and sources of catch histories to fill in potentially missing information.

- The results of the species that did not have their catch histories examined during workshop 1 but SESSFRAG requested to be examined included:

    o SharkRAG stocks; Gummy Shark, School Shark, Sawsharks and Elephantfish had catch histories documented in the late 1900's, early 2000s which will be added to the Catch History Report.

- o GABRAG stocks; Bight Redfish, Deepwater Flathead have developed catch histories which have not changed much in the last 15 years with a catch series existing for GAB Orange Roughy to be looked at later this year. These will be added to the Catch History Report.

- The species not covered in workshop 2:

  - o Deepwater stocks (Orange Roughy and byproduct species)

    - Documented catch histories exist for Orange Roughy stocks

    - There is less information available for byproduct species (e.g., Oreos)

  - o Available information available will be added to the Catch History Report.

  - o Non-quota species (e.g. Ocean Jackets, Frostfish, Squid)

  - o Non-quota species that do not have stock assessments and no formal work was undertaken by past SESSF RAGs to develop catch histories for these species.

  - o Some information for a few species exists prior to the establishment of the SESSF.

  - o A catch series needs to be developed and documented as a part of any future stock assessment for these species. Once developed it would be included in the Catch History Report. However, it will not be completed as a part of this project as developing new catch histories is outside of the project scope.

- SESSFRAG noted the stocks with assessments in 2024 and their catch history updates:

  - o Pink Ling has little uncertainty as they had minimal exploitation prior to 1980's.

  - o School Whiting have catch recorded back to 1942 but there is uncertainty related to the split between School and Stout Whiting in the NSW trawl Whiting catch.

  - o Silver Warehou have catch recorded from 1980 with small catches likely prior to this. There is uncertainty derived from Blue Warehou and Silver Warehou being recorded together as "Tassie Trevally" until the early 2000s.

  - o Deepwater Sharks catches were reviewed for the Tier 5 assessment in 2021.

  - o Mirror dory were reviewed for Tier 4 assessments in 2020.

- SESSFRAG noted the update of Blue-Eye Trevalla catch history:

  - o Catches of Blue-eye pre-date the establishment of Commonwealth fisheries though there are some state records for Tasmania, NSW, Victoria and South Australia.

  - o Some of the early catches are unlikely to be in the most recent assessment.

  - o An agreed historical catch series is being developed and will be reviewed by the Blue-eye/ Pink Ling working Group later this year.

- SESSFRAG noted the future work of this project as:

  - o Catch histories are being prioritised for stocks with assessments in 2024,

  - o A Draft report will be circulated before the SESSFRAG Data meeting,

  - o Feedback will be sought from stakeholders and revisions will be made,

  - o Catch histories will be available for RAGs undertaking assessments in 2024.

Agenda item 9: South-East Australian Marine Ecosystem Survey- Voyage 1 results

Purpose of the agenda item:

Dr Rich Little provided a presentation on the preliminary results from SEA-MES voyage 1 (July 2023). This presentation speaks to the everchanging climate hotspots of the South East marine areas and using the Bax and Williams survey[1] as a baseline informing on the impact, if any, fishing may have on the marine ecosystems.

SESSFRAG noted:

- The main objectives of this study are to document the changes in the ecosystem using a previous study as baseline data. The second objective is to consider what has caused those changes.

- The two-principal hypothesis are:

  - 1) the habitat hypothesis - modification of structured benthic habitat has caused changes and

  - 2) climate hypothesis - changes in the oceanography has led to changes. Both led to the Trophic hypothesis which suggests there will be changes in the food web and this information provided the basis for the survey's creation.

- A qualitative ecosystem model is being used to map indicators and their interactions with components of the ecosystem.

- Methods being used include trawl, midwater trawl for plankton species composition, Conductivity Temperature Density (CTD) measurements at point locations and cameras to measure benthic habitat throughout the system.

The results from the Voyage in July last year:

Environmental-DNA

- Environmental DNA (e-DNA) is being used to indicate species which have been present and may be used to calculate abundance. CTD's and specific e-DNA samplers are being used to collect samples which are then coupled against traditional sampling methods (e.g., trawling).

- Species matches from e-DNA showed there were a few species that were not represented in the trawl samples.

Ocean temperature conditions

- The trend since 1992 shows waters are warmer with a forecast of this warming trend continuing.

- During the voyage there were 2 anticyclonic eddies that encroached onto the shelf creating warmer surface waters.

Bass Strait and Eastern Australian Current (EAC) water

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[1] Bax, N. J., & Williams, A. (2000). Habitat and fisheries production in the south east fishery ecosystem. *Final Report to Fisheries Research Development Corporation. Project*, (94/040), 46.

- Sampling in the through flow for the Bass Strait found that the water was dense, cold, high in oxygen and heading deeper which then pushed up high nutrient water from the bottom.

- Bass Strait intrusion affects impact on what is living in the water column such as plankton. These impacts were measured with CTD's and midwater plankton tows.

- The CTD filtered seaweed and measured pigments, flow cell cytometry and particulate organic matter.

- Multi-net plankton tows were used to sample community composition, bulk biomass estimates and samples for isotopes.

- The next voyage will utilise a different net to target myctophids using a 16m^2 rectangular midwater trawl.

- At depths of less than 100 m there was an abundance of "green slime" (*Thalassiosira partheneia*).

Catch composition

- In comparison with to the historical survey of Bax and Williams (2000) in the mid-1990's, the SEA-MES voyage sampled one-third of sites that were repeated, one- third were new and one-third that were one time only and caught:

  - A higher proportion of small pelagic species, Jack Mackerel, Gemfish (628kg in one SEA-MES voyage compared to a total 174kg over four Bax and William's voyages), Flathead, Blue Grenadier and Stingarees in the south;

  - slightly higher amounts of Eastern School Whiting;

  - Fewer Redfish (34 individuals caught) and Jackass Morwong.

Benthic habitat

- There were clear signs of fishing activity, such as abandoned gear;

- Camera footage indicated a high abundance of Jackass Morwong in closures.

Seabird detection

- AI counting of seabirds was used and this approach will be further investigated on the next voyage.

Agenda item 10: Buffer work report

Purpose of the agenda item:

SESSFRAG to note progress on the development of an approach to ascertain differential risk for data rich (Tier 1) stocks in the SESSF and incorporating that risk, through a 'buffer', into harvest control rules that set a Recommended Biological Catch (RBC). The proposed buffers in the presentation include a buffer used to manage the differential risk by stock is referred to as a 'species buffer'. A buffer used to manage the risk associated with different assessment tiers is referred to as a 'tier buffer', and the buffer used to manage the risk associated with passing of time since the last assessment is referred to as a 'time buffer'

SESSFRAG noted:

- Concerns have been identified with the SESSF harvest strategy and this project seeks to address two of them:

- o Species that are assessed using Tier 1 stock assessment have different risks of them being below the Limit Reference Point (LRP) (<10%) due to data quality, or life history characteristics.

  - o Here 'risk' is defined as the probability of the spawning stock biomass falling below the limit reference point (i.e. B_{20}).

  - o The CFHSP states that the probability of the stock biomass being below the limit reference point must be less than 10%.

  - o Risk of the stock being below the LRP increases as the confidence in most recent assessment outputs erode with time (i.e. longer time interval between assessments).

- Risk mitigation due to uncertainty in Tier 1 assessments is currently achieved by introducing 'species' buffers, which reduce catches to account for uncertainty in assessments and management processes.

- Tier buffers account for the uncertainty in a Tier 1 assessment for SESSF 'species 'and 'time' buffers accommodate the uncertainty due to setting a particular length of multi-year TACs.

- CSIRO outlined that the idea of these buffers would be to reduce the risk due to uncertainty by reducing the RBC. If utilised, the Tier 1 buffer would be a set percentage (e.g., 10%) used for annual assessments whereas a time buffer compounds over time. An alternative would be to create a buffer based on the average or to make the time buffer constant.

- The trigger species in the new harvest strategy would be utilising the time buffer which provides an incentive to update assessments.

- Quantifying assessment uncertainty is achieved by developing high and low productivity scenarios for each species by modifying the assumed values of natural mortality (*M*), steepness (*h*) and mean unfished recruitment (*R$_0$*) in operating models (OM).

- For MSE studies we require that there is minimal bias in estimates of management quantities such as spawning biomass and stock status between the OM and the assessment for the scenario where both are identically specified (the status quo).

  - o For Tiger Flathead there was relatively little bias between the OM and the assessment for the status quo scenario, providing confidence in the results for this species.

- For School Whiting, while B_0 estimates were relatively unbiased there was substantial bias in estimates of current biomass and hence stock status. The bias in the status quo scenario for School Whiting suggest that it may not pass external review and it is not yet ready to provide management advice for this species.

- CSIRO presented simulation work using MSE to estimate 'species' and 'time' buffers for two SESSF stocks that approximate Tiger Flathead and School Whiting:

  - o The Tier 1 'species' buffer for Tiger Flathead was 9% and for School Whiting was 14% before the risk of falling below the LRP is lowered to 1 year in 10.

  - o 'Time' buffers when applied as a 4-year MYTAC to Tiger Flathead and School Whiting (noting the bias) were 10-15%[2] and 19% respectively.

- These buffers depend on uncertainty in the operating model, specifically what is assumed for the lowest productivity scenario.

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[2] Simulations for Flathead were still underway at the time of this presentation.

- The addition of a third stock would add rigor to the analysis.

- Future work for this project:

  o Check the results as there are simulations still running,

  o Complete an analysis for two or three SESSF stocks (Tiger Flathead, School Whiting and Silver Warehou).

  o There are 11 SESSF stocks with Tier 1 assessments but not all species have operating model inputs developed. One solution may be to create these for all 11 species with a time buffer based on an average value, but this could create problems because of variability between species.

  o Estimate the economic impact of the buffers and,

  o Seek feedback from SESSFRAG on the level of uncertainty to use for the lowest productivity scenario

- This work was undertaken as part of the MSHS project which has now completed

- Further testing or integration of this work including the testing of the constant buffer and alternative buffer will need to be completed as a part of the Phase 2 for the Muti-species Harvest Strategy project.

- The updating of these buffers would not happen often (maybe 10-15 years) or if there is a drastic change in the stock or assessment inputs.

SESSFRAG discussed:

- CSIRO asked if there was appetite to test the 'alternative' buffer which would be based on an average. SESSFRAG indicated their interest in observing the simulated impacts of an alternative buffer.

- One member noted that the time buffer requires people to check in with stock status with some regularity in a fast-changing system and the alternative buffer may not be receptive to this change and may encourage complacency.

- An industry participant indicated concern about adding another risk component and buffer driven by something industry cannot control (climate change) and suggested that the existing Tier 1 buffer is sufficient.

- SESSFRAG agreed it would like CSIRO to present both options and consider them in the context of MSE results for different species. This could potentially be done through the next iteration of the Multi-Species Harvest Strategy project, if funded.

Agenda item 11: This item was moved to item 7

Agenda item 12: Stock assessment timetable and trigger species considerations

Purpose of the agenda item:

For SESSFRAG to provide advice on amendments to the stock assessment schedule for the SESSF and the review timetable for two trigger species.

SESSFRAG Noted/ Discussed:

Deepwater Flathead assessment timeframes:

- The next assessment for Deepwater Flathead is currently scheduled for 2028.

    o The Great Australian Bight Resource Assessment Group (GABRAG) questioned the 5-year gap between assessments for this species.

- The Great Australian Bight Industry Association (GABIA) has requested that the assessment is performed prior to the expiration of the Marine Stewardship Council (MSC) certificate in 2028. The suggested timeframe being either 2026 or 2027.

- One industry member requested that the Deepwater Flathead assessment be brought forward to 2026.

- This request was supported by SESFRAG once it was identified that the Bight Redfish assessment does not rely on CPUE and can be conducted in 2025 (which is an "off-year" for data processing).

Silver Trevally

- AFMA has recommended a 3-year Multi-Year Total Allowable Catch (MYTAC) for Silver Trevally, so another Tier 1 assessment of Silver Trevally would ideally be conducted in 2026.

- As it is a joint assessment, AFMA will consult with NSW DPI Fisheries and plan for another joint assessment in either 2026 or 2027. CSIRO noted that NSW often update their assessments annually and if this assessment is scheduled in a non-data processing year the Commonwealth CPUE would not be able to be used. However, NSW CPUE would be available and the outputs from the most recent NSW assessment could be used.

School Shark

- The School Shark assessment initially scheduled for 2024 has been postponed to 2025 due to delays with epigenetic ageing.

- AFMA advised SESSFRAG that SharkRAG will consider the timing of the School Shark assessment that follows the 2025 assessment when it meets in July 2024.

Alfonsino and Smooth Oreo (Cascade)

- Alfonsino and Smooth Oreo dory Cascade (which are now considered trigger species) were last assessed in 2013 and 2010, respectively; well beyond the 6-year time buffer used to initiate a review of assessment options and the TAC for trigger species.

- AFMA noted the catches of both these species have been very low for six years. The intent of the trigger species process is when the six years conclude all available indicators are reviewed by the RAG to inform decision-making relating to either maintaining the TAC, or altering it based on the available data. Though, these species are currently due to be reviewed, it was queried if this should be deferred given their low catch rates.

- ABARES noted that Smooth Oreo dory (other) is a trigger species and believed it should be included in this list as the most recent assessment was undertaken over a decade ago and there were issues with the underlying assumptions of that assessment. AFMA explained that under the new harvest strategy framework for trigger species, it does not require a formal assessment unless the catch exceeds the specific trigger threshold.

Royal Red Prawn

- A review of assessment options should be conducted in 2024 as it has exceeded its trigger catch amount and there are conditions of the MSC certification to fulfil.

- The catch of Royal Red Prawn during the current SESSF season has already exceeded the 50 t review trigger initially suggested for this species (by almost 100 tonnes). This being the case, AFMA will bring forward the consideration of assessment options for this species (by SERAG) from 2026 to 2024. This work is also linked to a condition on the MSC certificate for Royal Red Prawn.

SESSFRAG advice and recommendations:

- The Deepwater Flathead assessment will be brought forward to 2026;

- The Bight Redfish assessment will be brought forward to 2025;

- When the Silver Trevally assessment will occur will be decided out of session after AFMA and CSIRO have discussed what is occurring with NSW DPI assessments of this stock.

- The timing of the next School Shark assessment will be discussed at SharkRAG in 2024.

- The review of assessment options for both Alfonsino and Smooth Oreo Cascade will occur in 2024.

- Further consideration is needed for Smooth Oreo non-cascade assessments and if the decision to not use the depletion based stock reduction analysis (DBSRA) in 2019 and implement a weight of evidence approach constitutes a review under the new harvest strategy criteria for trigger species. If it does not, then a review will occur in 2024 if it does, it will fall to a process in 2026.

- The Royal Red Prawn catch during the 2023-24 season has triggered a review in 2024.

Action item 3 -
AFMA, CSIRO and NSW DPI to discuss the timing of the next Silver Trevally joint assessment.

Action item 4 -
AFMA to summarise the information on Smooth Oreo (other) presented to SERAG in 2020 with respect to the 6-year review cycle for trigger species.

Agenda item 13: Upper-slope Dogfish survey results

Purpose of the agenda item:
For SESSFRAG to note the results from the Upper-Slope Dogfish Survey as presented by Dr Franzis Althaus. This case study aimed to determine the status and recovery of depleted or declining species of Southern Dogfish and Harrison's Dogfish within the context of AFMA's upper slope Dogfish management strategy.

SESSFRAG Noted:

- The purpose of the Upper Slope Dogfish Management Strategy was to halt further decline and support the recovery of the two species of Dogfish using a multi-faceted management approach. This approach led to those species being listed as conservation dependant with the condition a monitoring program be in place. A monitoring program was later formulated by CSIRO.
- The structure of the monitoring project was developed from a workshop in 2018 with the project beginning in 2022.
- The results of the survey from the different regions sampled include:

Flinders region in 2022

   o When compared with data from a previous 2009/10 survey, there was a more even spread of male and female Harrisson's Dogfish along the entire length of the closure.
   o In 2009/10 the data showed that females were predominantly found in the southern parts of the closure and males in the northern parts with little to no Dogfish in the centre.
   o The mean CPUE for Harrison's Dogfish has increased from 5.29 (2009/10) to 8.01 (2022).

Hunter region in 2023

- o   Harrison's and Southern Dogfish were caught in this region.
- o   Male and female Harrison's Dogfish were found distributed throughout the entire area including adults and juveniles.
- o   Only adult male Southern Dogfish were found in the sampling area

Endeavour region in 2023

- o   Historically there was a large catch of Southern Dogfish and not very many Harrison's Dogfish. However, this sampling found a higher abundance of Harrison's Dogfish.
- o   Predominantly males with few female Harrison's Dogfish were found and all were adults.
- o   Southern Dogfish had a large proportion of males and all were adults.

Port MacDonnell region in 2023

- o   Only Southern Dogfish were caught with a mean CPUE of 17.6.
- o   Males and females were found throughout, with most catches occurring in a canyon area which were predominantly male,
- o   Very few juveniles were found.

Murry region in 2023

- o   There is no historical data for this region,
- o   Southern Dogfish were caught, both male and female with juveniles and adults represented
- o   Juveniles were found in shallower sets

Results of the Baited Remote Underwater Video systems (BRUVS)

- o   Gulper Sharks were observed in the Flinders region on 6 of the 17 BRUVS and 1 deep BRUV.
- o   Gulper Sharks were observed in the Port MacDonnell region on 2 of 6 BRUVS.
- o   All together there were 23 successful conventional and 2 deep BRUVS.
- o   Observations of the BRUV footage found there was only ever one Dogfish observed at any time (MaxN=1) however these may not be the same individual.

- •   Due to the difficulties associated with BRUVS, the limited ability to collect standardised length and sex data, and the inability to tag, BRUVs were determined non-suitable as a primary tool for Gulper monitoring.
- •   AFMA enquired as to how frequently these surveys should occur. Previous advice has been that surveys should occur between 5-10 years.
- •   The 60-mile closure was not sampled due to logistical issues and therefore does not have baseline data. Dr Franzis Althaus stated it would be beneficial to survey this area as it is believed to be not fished or fished very little and may inform the carrying capacity of habitat.

Agenda item 14: Update on School Shark Close-Kin Mark-Recapture assessment

Purpose of the agenda item:
SESSFRAG to note the update of the School Shark CKMR assessment as presented by Dr Robin Thomson.

SSSFRAG noted:

- •   3,000 tissue samples have been collected through the SIDaC program,

- •   A new method of mtDNA analysis is underway to see if half-sibling pairs share a mother or father

- •   The recommendations from the AFMA review panel to improve School Shark CKMR were:

- o   Improve on the vertebral ageing estimates,

- o   Explicitly incorporate 'skip breeding' into the model,

- o   In addition, the review panel recommended that stock structure investigated as it may be important for management purposes (while not impacting the CKMR analysis).

- Work is underway to improve aging:
  - Epigenetic aging has worked well for teleosts such as southern bluefin tuna When looking at School Sharks there is confidence that epigenetic aging can work however it is difficult to calibrate the epigenetic clock because vertebral ages are poor. A pilot project aimed at investigating the potential to use bomb radio carbon ageing to develop a calibration set showed poor results.
  - A more promising method using known time at liberty from (same cohort) full sibling pairs Is currently under development at CSIRO.
- Next steps of this project:
  - The proof of concept and code development for the new full sibling pairs based method should be completed July 2024
  - Methylation reads for all 6,000 sharks should be completed by 2025
  - Code development for first cousins and skip breedings to be completed in 2024 or early 2025.
  - Once epigenetic ageing has been developed for School Shark, it will be possible to stop collecting vertebrae as they will no longer be needed for ageing. However, epigenetic clocks are tissue specific so before changing the tissue sampling protocol, testing will be necessary to ensure that the new tissue collections provide useable age estimates.

Agenda item 15: Management of Climate Change impacts on the SESSF

Purpose of the agenda item:

For SESSFRAG to note the presentation by Dr Beth Fulton on the climate influences on the SESSF during the 2023-24 season. Furthermore, to discuss in relation to the climate risk framework the implications of the environmental conditions present in the SESSF through 2023-24 and the exposure of the species to environmental stress.

SESSFRAG Noted:

- The ocean is getting hotter each year and for the observational future it is at temperatures not recorded previously.
- The surface temperatures over SESSF were the hottest they have been in recorded history, and the Great Australia Bight had a strong cold upwelling.
- Colder upwellings may not be positive as the organisms such as plankton may have become accustomed to the water temperature so a sudden cold upwelling may have the same impact as that of heat.
- The summer heatwave is located along the shelf near Tasmania and this has the potential to impact different species at both juvenile and adult stages.
- A comparison of water temperatures against the preferred temperature ranges for some SESSF species indicated that twelve of the twenty-seven species analysed exceeded the maximum preferred temperature range in 5% of cells, while for Gemfish at more than 17% of cells. For 15 species, the maximum preferred temperature range was more than 10% higher in 2024 than 2012.
- Primary production is declining in general with a 30% decline in the past decade. For the eastern part of the SESSF specifically, most months the primary production was low. This signalled that the temperatures may have been too high for fish and their food sources, these shifts in temperatures are potentially leading to changes in food sources and their becoming harder to find.
- The creation of the Ecosystem Traits Index is a management tool which can be used as a warning system to cue management action. A definitive scoring for 2023 is not possible until catch data are available.
- The Bureau of Meteorology is indicating that the El Nino may be ending, and a La Nina may form however there is no certainty of this.
- The advice on what steps could be taken included:
  - Examination of comparable years to gain insights as to what might occur regarding catches and recruitment.

- o Studies on the thermal tolerances of the larvae of commercial species.
- o Careful monitoring of any intensification of fishing activity to ensure that the species in question can handle increased fishing and environmental pressures.
- o Consideration of any species that could be transitioned to managed species whilst considering current target species.

SESSFRAG discussed:

- Buffers potentially may not be enough to mitigate the speed of climate impacts for some species as action probably could not be taken quickly enough.
- The importance of collecting and analysing data quickly so that management decisions can be expediated.
- Up until now "shocks" have not been MSE tested for the majority of single species in the SESSF. The dynamic B_0 project tested a 50% reduction in R_0 over 10 years for three species. However, CSIRO suggest that any future MSE work for the SESSF should include scenarios with changing productivity. Especially when testing a full harvest strategy.

SESSFRAG advice and recommendation:

- That MSE testing undertaken in the SESSF should include climate change scenarios including continuous and small but also extreme (but realistic) cases.

15.1 Climate risk framework

SESSFRAG requested Mr Daniel Corrie provide an overview of the AFMA Climate Risk Framework and its application.

SESSFRAG noted:

- The climate change framework will be presented to SESSFRAG at the data meeting in August once it has been applied in practice to a few species.
- The climate risk framework is a risk-based approach to assessing and then, where possible, mitigating the impacts of climate change on individual species.
- The climate risk framework is not meant as an additional layer of precaution where management arrangements or precautions are already in place. Instead, it is intended to identify species at risk from climate where no precautionary measures are in place and prompt action.
- The climate risk ranking utilises a set of four criteria to compare against the available information for that species to evaluate its risk to climate change. The next steps are to apply the climate risk ranking against the stock status of that species to provide management guidance. This will be reviewed by the RAG to identify what is already being done and consider suggesting the application of precautionary adjustments, if required. The climate risk ranking is based on predicted climate impacts and current stock status. Mitigation options are then explored across the management, scientific and industry adaption pathways.
- AFMA will trial the Climate Risk Framework across five domestic fisheries in 2024 and attempt to include some retrospective application to selected species to explore scenarios of management adjustments and what their potential impacts could have been.
- The first working group was held on the 4 April 2024 and the key takeaways will be considered before being presented to SESSFRAG in August 2024.
- There is a level of flexibility in the framework to be able to respond to climate impacts in a timely manner with consideration of the limited time available for RAG meetings.

> **Action item 5 -**
>
> AFMA to present the climate risk framework with some species in consideration against that framework at SESSFRAG Data meeting 2024.

Agenda item 16: 2025-26 Research Statement and Assessment Schedule

Purpose of the agenda item:

To seek advice from SESSFRAG on research priorities to be included in the 2025–26 Annual Research Statements for the Southern and Eastern Scalefish and Shark Fishery (SESSF) and the Great Australian Bight Trawl (GABT) Fishery, including the assessment schedule for relevant species. The RAG noted the research cycle for priorities.

SESSFRAG noted:

- Five projects were put forward with three being supported.
- The Eastern Pink Ling stock assessment is being undertaken as a part of CSIRO's existing stock assessment project.
- An independent review of the Blue Grenadier Tier 1 assessment be completed at no cost for AFMA.
- Two projects were not supported:
  - Evaluating contributing factors to catch per unit effort in the SESSF was recommended by ARC to be reworked and submitted for consideration by ComRAC for FRDC.
  - Deepwater Shark Habitat characterisation project was not supported due to budget constraints and other projects of a higher priority.
- Deepwater Shark habitat characterisation project was not supported by the ARC as there was no funding. However, there is more information available now including GIS data and information about the benthic habitat. This data could improve understanding of how the closures may protect Deepwater Sharks and the surrounding habitat.

Proposed ARC projects for the 2025-26 financial year

Development of Harvest Control Rules to use with low recruitment projections

- Dr Pia Bessell-Browne noted that the use low recruitment projections in assessments of SESSF stocks is increasing and the SESSF HCR does not work as intended in these situations. There is a need to develop and test a low recruitment HCR given that many SESSF stocks are experiencing prolonged periods of low recruitment.
- SESSFRAG agreed that a research scope should be submitted to the FRDC to gauge interest in this work from other jurisdictions and fisheries. If there is broader interest, then a full FRDC proposal should be developed; if not, then a proposal should be submitted to the AFMA Research Committee.
- SESSGRAG agreed that this is a high priority project, of low-medium cost (~$100-200K), and a high feasibility of completion.

Blue Grenadier Acoustic Survey 2025

- SESSFRAG noted that this survey is completed annually using freezer trawlers to build up a time series of acoustic biomass estimates to inform assessments.
- SESSFRAG agreed this is a high priority project, of low- medium cost (~$100-200K) and a high feasibility of completion.

FRDC proposals for consideration by COMRAC 2024

Evaluation and application of a preferred multi-species harvest strategy in the SESSF

- This will be phase 2 of the MSHS project.
- SESSFRAG agreed that the Dynamic Tier 4 work from CSIRO should be included in this phase of the project.
- One member indicated their concern the uncertainty of the timing and scope of the policy when there is a potential that other groups may not recognise the merits or application of the outcomes.
- SESSFRAG discussed the importance of ensuring all those who should be involved in the decision making on the MSHS in phase 2 and in policy making are consulted to ensure this research maintains maximum value.
- SESSFRAG agreed that this project should include the integration of all the work that has been done such as the buffer work, low recruitment projections, under catch provisions, Dynamic B_0, climate

change trends and shocks. It should include stakeholders to evaluate the harvest strategy for outside of those in AFMA.

- SESSFRAG agreed that the cost of this project would be high (>$200k), of high priority (noting outcomes/ objectives of the Harvest Strategy Policy are critical to timing of this project) and high feasibility noting potential policy adoption risks which could downgrade the feasibility rating to medium.

Proposed ARC projects for the 2025–26 financial year relevant to the Great Australian Bight Trawl Sector (GABTS)

Ecological Risk Assessments for the otter trawl and Danish seine fleets in the Great Australian Bight Trawl Sector

- Industry considered this project essential as it is related to MSC certification. CSIRO noted that 2025 is a no data processing year so this may need to be amended or requires further conversation. AFMA noted from a management perspective this project should be considered a ranking of 'High' priority. It was mentioned by Dr Mark Grubert that the EM trial may be able to address some of the recommendations such as bycatch composition and a member noted this project has until 2027 to be completed.
- SESSFRAG agreed that the cost ranking of this project would be low (<$100K), the priority high and feasibility of this project ranked as high.

Collation and collection of data to support a stock assessment on Ocean Jacket in the Great Australian Bight

- An industry participant noted that a potential demand for this species may develop.
- It was suggested that this project be provided to the RACs (ComRAC, SARAC) to approach FRDC for funding as it should be a shared responsibility.
- SESSFRAG agreed that this project would be a ranking of Medium cost (~$200K) a priority ranking of low however noted that it will be high when considering the longer term and the feasibility is ranked high.

Proposed new research for the SESSF 2025-26

Evaluation of catch and age assessment methods for data-limited Orange Roughy stocks

- SSSFRAG noted the project to simulation test catch and age assessment methods for data-limited Orange Roughy stocks which incorporated evaluating otolith weight and fish length as proxies for age that CSIRO have proposed to start in early 2025 after being requested to do so during the 2023 RAG process. The information from this project seeks to inform upcoming Orange Roughy assessments however the methods need to be tested before being accepted for use in assessments.
- SESSFRAG agreed that the project should progress, however AFMA noted funding for this would happen outside of the research statement process. However, AFMA still requested ranking to be provided by SESSFRAG for this item. SESSFRAG agreed and ranked the cost as low (<$100K), priority as essential (when considering the data limited Orange Roughy stocks) and feasibility as high for this project.

Dogfish research survey within the 60-mile closure

- SESSFRAG noted that there has been limited fishing in this closure historically and the Gulper Shark population might be at carrying capacity. Surveying this closure could provide valuable baseline data for the habitat and gulper population.
- SESSFRAG agreed that the cost of such a survey would be high due to the resources required, the priority was ranked as low (medium in the longer term) and feasibility was ranked high as there is an existing plan and the survey methods have been tested in other areas.

Spatial closures and spatially explicit risk assessment methods

- SESSFRAG discussed the elements of this project with some confusion around exactly what would be the focus (Deepwater Shark closures, reference points etc).
- SESSFRAG noted the work already completed by CSIRO. Dr Geoff Tuck offered to present the outcomes of spatial closures project to SERAG in 2024.

Action item 6 -

AFMA to amend the scope to the Multi-species Harvest Strategy Phase 2 to include the outcomes of the harvest strategy, climate change trends and shocks e.g., low recruitment scenarios and buffer work (undercaught TACs), Dynamic B_0.

Action item 7 -

AFMA to discuss with various policy-based bodies (taking some examples) (ABARES, DCCEW, DAFF-fisheries) to ensure that the results of the multi species HS project conforms in practice and philosophically to their own processes.

Action item 8 -

Geoff Tuck to present outcomes of previous project on spatial closures to inform future discussions addressing spatial closures in the context of harvest strategies and methods.

Agenda item 17: 2024 Data meeting dates

The provisional date for the SESSFRAG data meeting is 21–22 August 2024

Agenda item 18: Other business

Mr Daniel Corrie's presentation on the climate risk framework was discussed at the request of SESSFRAG members after agenda item 15, in this document labelled item 15.1. No other business was discussed.

Close of meeting

The Chair thanked SESSFRAG members and invited participants for their contributions and closed the meeting.

Attachment A - Register of Interest

Table 2: Member, invited participants and observer's declarations of interest.

Participant	Organisation	conflict
Dr Cathy Dichmont	Cathy Dichmont Consulting	Director of Cathy Dichmont Consulting. Chair of ComRAC (FRDC) Contracted by various state and Commonwealth agencies to undertake various reviews and consultancies not related to SESSF. No pecuniary interest in the SESSF.
Mr Lance Lloyd	Lloyd Environmental	GABRAG Chair Member of GABMAC Board Member, AwF – Aquaculture without Frontiers (Australia) Director; Lloyd Environmental Pty Ltd. Research Fellow; Federation University Australia No pecuniary interest.
Dr Paul McShane	Global Marine Resource Management	Chair of SERAG and a member of SEMAC and SESSFRAG. No pecuniary interest in the SESSF. Principal of Global Marine Resource Management Pty Ltd. Adjunct Professor (Fisheries and Aquaculture) College of Science and Engineering, James Cook University
Mr Sandy Morison	Morison Aquatic Sciences	Director of Morison Aquatic Sciences Chair of SharkRAG Contracted by government departments, non-government agencies and companies for a range of fishery related matters including research and for MSC assessments of AFMA managed and other Australian and international fisheries. No pecuniary or other interest in the SESSF.
Dr Sarah Jennings	Independent economics consultant	Adjunct Senior Researcher, TSBE Economics member of SERAG Economic member of SEMAC Member of AFMA EWG Independent economics consultant No pecuniary or other interest in the SESSF.
Dr Beth Fulton	CSIRO	Ecosystem and climate scientist, Portfolio Leader for Integrated Marine Management. Adjunct with the University of Tasmania (Deputy Director for the Centre of Marine Socioecology). Acquiring funding for research purposes
Mr Simon Boag	SETFIA (trawl) SSIA (sharks) SPFIA (SPF)	EO SETFIA (trawl) EO SSIA (sharks) EO SPFIA (SPF) Industry member on both SERAG and SEMAC. SSIA is engaged by AFMA to collect shark industry biological data SETFIA is the PI on the Orange Roughy east AOS and ORS Cascade survey

Participant	Organisation	conflict
		SETFIA is engaged by participants within the W ORS research fishery to collect biological samples SETFIA is engaged by AFMA under co-management to undertake a variety of tasks including snapper management, ling management and consultation
Mr Neil MacDonald	GABIA	**PECUNIARY INTEREST** Director NMAC(SA) P/L **ORGANISATION SUPPORT** - Executive officer Great Australian Bight Industry Association (GABIA) - Executive officer Charter Boat Association South Australia (CBASA) - Executive officer Southern Fishermen's Association (SFA) - Executive officer Saint Vincent Gulf Prawn Boat Owner's Association (SCGPBOA) - Executive officer Marine Scale Net Fishers Association (MSNFA) - Committee support services South Australian Rock Lobster Management Advisory Committee & Research Sub-Committee (SARLAC) - Support services South Australian Professional Fishers Association **COMMITTEE MEMBERSHIP** - Great Australian Bight Management Advisory Committee (AFMA) - Member - Great Australian Bight Research Advisory Committee (AFMA) - 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) - Member - CGG Gippsland MSS Scientific Advisory Committee – Chair - Australian Council of Prawn Fisheries - Director
Dr Paul Burch	CSIRO	Employed by CSIRO, assessment scientist. CSIRO representative on the Fisheries Statistics and Information Working Group. Acquiring funding for research purposes.
Dr Franzis Althaus	CSIRO	Employed by CSIRO, Assessment scientist. Acquiring funding for research purposes. Leader on CSIRO SESSF data team (data services work)
Dr Pia Bessell-Browne	CSIRO	CSIRO assessment scientist. Acquiring funding for research purposes. PI on FRDC project: Developing a harvest control rule to use in situations where depletion can no longer be calculated relative to unfished levels.

Participant	Organisation	conflict
Dr Miriana Sporcic	CSIRO	Assessment scientist. Acquiring funding for research purposes Project Leader CSIRO Ecological Risk Assessments
Dr Robin Thomson	CSIRO	Assessment scientist. Acquiring funding for research purposes PI on close kin project for School Shark. PI in CKMR Design for selected SESSF species and methods development
Dr Geoff Tuck	CSIRO	Involved in Stock assessments. Interest in obtaining funding for future research. Principle investigator on the SESSF stock assessment project. Project leader CSIRO Marine Visual Technologies project team on automated catch detection and species identification
Dr Rich Little	CSIRO	Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery. Assessment scientist. Project leader CSIRO Marine Visual Technologies project team on automated catch detection and species identification. Project leader Southeast Australian Marine Ecosystem Survey (SEA-MES) Principle Investigator for the Species Distribution project
Dr Ian Knuckey	Fishwell Consulting	**Positions**: Director – Fishwell Consulting Pty Ltd Director – Olrac Australia (Electronic logbooks) Chair – Northern Prawn Fishery Resource Assessment Group Chair – Tropical Rock Lobster Resource Assessment Group Chair – Victorian Rock Lobster and Giant Crab Assessment Group Chair – Victorian Central Zone Abalone Fisheries Resource Advisory Group Chair – Gulf of St Vincent's Prawn Fishery MAC Research Scientific Committee Scientific Member – Northern Prawn Management Advisory Committee Scientific Member – Gulf of St Vincent Prawn Fishery Management Advisory Committee Scientific Member – Tropical Tuna Resource Assessment Group Member – The Agri Collective **Current projects**: FRDC 2018-021 – Development and evaluation of multi-species harvest strategies in the SESSF NSW 2021-1238 – Developing a harvest strategy framework for Aboriginal cultural fishing in NSW DAWE Project – Multi-sector fisheries capacity building AFMA 2020-0807 – Bass Strait Scallop Fishery Survey – 2020-22

Participant	Organisation	conflict
		FRDC 2019-027 – Improving and promoting fish-trawl selectivity in the SESSF and GABTS
		FRDC 2018-021 – Development and evaluation of SESSF multi-species harvest strategies
		Traffic Project – Shark Product Traceability
		Sea Cucumber Ass. – Design and implementation of various sea cucumber dive surveys.
		Australia Bay – Queensland Gulf of Carpentaria Developmental Fin Fish Trawl Fishery
		Expert Witness – Gladstone Harbour development impacts
		WAFIC Project – Strategic Review of Western Australia's Shark Fisheries
		FRDC 2022-007 – Trials of oceanographic data collection on commercial fishing vessels in SE Australia
Mr Daniel Wright	ABARES	Employed by ABARES. No pecuniary interest in the fishery. Any future interests in projects or research will be declared as required.
Mr Tim Emery	ABARES	Employed by ABARES. No pecuniary interest in the fishery. Any future interests in projects or research will be declared as required.
Ms Sally Weekes	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mr Dan Corrie	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Dr Mark Grubert	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Ms Cate Coddington	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mr Tamre Sarhan	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Ms Jennifer Power-Geary	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Ms Michelle Henriksen	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mr Nathan Jackson	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mr Euan Provost	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mrs Jacqueline Lyons	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Ms Katrina Marchant	AFMA	Employed by AFMA, no interest, pecuniary or otherwise

Attachment B- Action Items

Completed/Redundant	Underway	Advice required	Not yet started

Action Items from previous SESSFRAG meetings

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
29	9 SESSFRAG Chairs' 2021	AFMA to incorporate the process for periodic review of stock assessments in the document 'Total Allowable Catch (TAC) setting process – Guidelines for provision of data and stock assessment processes' for further consideration by SESSFRAG. Timeline is subject to other priorities.	AFMA	As soon as practicable	<u>Underway</u> AFMA anticipates providing a draft for SESSFRAGs consideration at the August data meeting.
31	16 SESSFRAG Chairs' 2021	AFMA to compare discard data reported in logbooks, to those recorded by the ISMP program, to determine the accuracy of operator reported discards.	AFMA	Include in future discard reviews to SESSFRAG	<u>Advice required</u> AFMA suggests removing or putting this action on hold until the completion of the EM trial given one of the purposes of trialing EM is to collect discard information and should EM be implemented; feedback is provided routinely to operators on their reporting in comparison to the EM analyst.
4	6 SESSFRAG Data 2022	SERAG to consider the outcomes of the Jackass Morwong CKMR scoping project and provide advice on future priorities for CKMR research.	CSIRO	SERAG 1 2023	<u>Advice required</u> SESSFRAG and subsequently AFMA has prioritised the collection of tissue samples from Blue-Eye Trevalla and Redfish for CKMR analysis. There are no immediate plans to do similar for Jackass Morwong at this point.

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
					AFMA therefore suggests removing this action item.
8	8 SESSFRAG Data 2022	AFMA to trial an industry data collection program to supplement the ISMP program, with a focus on the western part of the Commonwealth Trawl Sector (CTS).	AFMA	As soon as possible	Not yet started
10	8 SESSFRAG Data 2022	AFMA to seek advice from SharkRAG on adjusting biological sampling targets for Gummy Shark and School Shark to better reflect recent fishing effort.	AFMA	SharkRAG 2023	Completed Advice was sought from SharkRAG in December 2023 and no changes to targets were made.
22	9 SESSFRAG Data 2022	AFMA to investigate discrepancies in logbook and CDR data for Bight Redfish, deep-water sharks, School Shark and eastern school Whiting in recent years and report back to the relevant RAGs in 2022	AFMA	As soon as possible	Advice required This item is unclear as it is currently worded and therefore resolving it is difficult without more information about the issues. Greater clarity is required else AFMA suggests removing this item. AFMA acknowledges there have been various data issues but there are now processes established or being established to resolve a number of them, including: discussions between agencies about data sharing and agencies have agreed to flag any ongoing data issues; AFMA has partially implemented an in-house QA process and intends to expand it over the next few months.

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
24	10 SESSFRAG Data 2022	AFMA and FAS to provide SERAG an overview of the fish-length/otolith-weight ratio for Cascade Orange Roughy with a view to determining if there are different stocks aggregating on the Cascade plateau each year.	AFMA & FAS	SERAG 2023	<u>Completed</u> Kyne Krusic-Golub presented on this topic at SERAG 1 2023. Plots of otolith weight against fish length for Cascade Orange Roughy caught in different years showed no clear pattern. Hence the use of this morphometric ratio does not appear to be an effective means of distinguishing different stocks of Orange Roughy.
2	2 SESSFRAG Chairs' 2023	Dr Beth Fulton to draft a document on climate change and its potential implications that can be considered by SESSFRAG at its March 2024 meeting. The outcomes of this discussion may require further amendment to the Overview of TAC setting process document (or another document).	AFMA & CSIRO	SESSFRAG Chairs' meeting 2024	<u>Underway</u> Beth Fulton will provide an update on this work at the 2024 Chairs' meeting during agenda item 15.
3	3 SESSFRAG Chairs' 2023	AFMA to summarise the potential impacts of the structural adjustment on the economics of the SESSF and what this means in terms of research and data collection for the Chairs' meeting in 2024. Previous indicators produced by the Economic Working Group should also be considered.	AFMA	SESSFRAG Chairs' meeting 2024	<u>Not yet started</u> This work will be presented at the 2024 data meeting as it is less than 12 months since these changes took effect.
5	5 SESSFRAG Chairs' 2023	Dynamic Tier 4 assessments to be undertaken for the Deepwater Shark basket and the slope stock of Blue-Eye Trevalla, along with an update to the existing Tier 4 for Blue-Eye Trevalla and 'roll-over' for Deepwater Sharks, for consideration by SERAG in 2023. The RBCs from each assessment type will not be viewed	CSIRO	For SERAG 2023	<u>Completed</u> Dynamic Tier 4 assessments were attempted for Deepwater Shark and Blue-Eye Trevalla in 2023 noting that SERAG identified that this assessment method required further work, Pia Bessell-Browne will present the

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
		until the RAG has decided on the assessment methodology to use for each stock for the 2023 TAC setting round.			outcomes of the Management Strategy Evaluation for Dynamic Tier 4 at the 2024 Chairs' meeting.
10	12 SESSFRAG Chairs' 2023	To assist with a holistic view of the SESSF in terms of species caught and interacted with, AFMA to include an agenda item for the data meeting to include (a) catch composition data for non-quota species so that any large changes are identified, and appropriate management action can be progressed which may include, for example, a stock assessment, and (b) protected species interactions.	AFMA	As soon as possible	Underway

AFMA is developing Power BI dashboards showing catch composition and protected species information and these will be presented at the 2024 data meeting. |
| 13 | 12 SESSFRAG Chairs' 2023 | AFMA and CSIRO to review the recommendations from the ABARES congruence analysis of logbook and EM data and determine what additional work is required. | AFMA to progress through SharkRAG | As soon as possible | Underway

This action item will be progressed through SharkRAG in 2024. |
| 1 | 3 SESSFRAG Data Meeting 2023 | AFMA to investigate options to better balance the achievement of ISMP observer coverage targets in the broader fishery with coverage in the Blue Grenadier spawning zones. | AFMA | | Completed

AFMA has employed additional observers since winter 2023 in order better balance coverage on freezer boats and the domestic wet boat fleet. |
| 2 | 3 SESSFRAG Data Meeting 2023 | AFMA to liaise with SSIA/SETFIA regarding the adoption of the AFMA electronic observer data collection system. | AFMA/SSIA/SETFIA | | Not yet started

Development and testing of AFMA's electronic observer data collection system is not yet complete. AFMA will consider the viability of rolling out this system to Industry once it has been deployed and tested by |

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
					AFMA observers.
3	3 SESSFRAG Data Meeting 2023	AFMA to include the GABIA crew-based data collection summaries in the ISMP annual report.	AFMA		Underway AFMA will include GABIA crew-based data collection summaries in the ISMP annual report from 2024 onwards.
4	3 SESSFRAG Data Meeting 2023	SSIA to include a column for data collection 'target' to allow for a comparison with total 'achieved', separated by length frequency and otoliths.	SSIA		Completed SIDaC reports do contain a sampling target for each species, zone, method, and data type (length/# of otoliths/# of vertebrae) under the heading "Quarterly Plan". This heading will be changed to "Quarterly Sampling Target" in future reports.
5	3 SESSFRAG Data Meeting 2023	SSIA to investigate the reasons for and address the oversampling of shark vertebrae given that there are costs associated with collection, processing and storage of samples, and report back to SESSFRAG.	SSIA		Underway Most of the over-sampling relates to Gummy Shark in Bass Strait. SSIA is addressing this issue by reducing sample batches from this area from 80 to 60 Gummy Sharks.
6	3 SESSFRAG Data Meeting 2023	AFMA to remove the collection of Ribaldo lengths from the data plan and communicate the revised plan to the relevant data collection teams.	AFMA		Completed The collection of Ribaldo lengths has been removed from the SESSF data plan and is no longer included in the ISMP plan for this fishery.
7	3 SESSFRAG	Fishwell, FAS and CSIRO to collaborate and identify catch locations/zones for old GAB Orange Roughy samples.	Fishwell/ CSIRO/ FAS		Not yet started This work will be considered during an

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
	Data Meeting 2023				Orange Roughy ageing and assessment priortisation workshop to be held after the 2024 data meeting.
8	3 SESSFRAG Data Meeting 2023	FAS to work with GABIA and Fishwell on the utility of using fish length to otolith weight ratios to provide information on stock status for non-assessed Orange Roughy.	FAS/ Fishwell/ GABIA		Not yet started This work will be considered during an Orange Roughy ageing and assessment priortisation workshop to be held after the 2024 data meeting.
9	4 SESSFRAG Data Meeting 2023	AFMA to work with the relevant data collection programs and start collecting tissue samples for CKMR analysis for Redfish and Blue-Eye Trevalla and report back in around six months' time regarding progress.	AFMA		Underway *Blue-Eye TrevallaBlue-Eye Trevalla*: collection for a trial period by SSIA will be included in the co-management arrangement. *Redfish*: AFMA is in the process of developing a CKMR sampling plan for Redfish.
10	7 SESSFRAG Data Meeting 2023	CSIRO to investigate age and length data to see if it is informative of the status of the eastern Orange Roughy stock.	CSIRO		Not yet started This work will be considered during an Orange Roughy ageing and assessment priortisation workshop to be held after the 2024 data meeting.
11	7 SESSFRAG Data Meeting 2023	CSIRO to present a scope of the proposed Eastern Orange Roughy simulation to both SERAG and GABRAG in 2023.	CSIRO		Completed Paul Burch presented a proposal for validating catch and age models and data sources for data-limited Orange Roughy stocks to both SERAG and GABRAG in 2023

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
12	8 SESSFRAG Data Meeting 2023	AFMA to update the climate indicator report based on SESSFRAG recommendations including the addition of the number of fishable days, interpretation information for the southern annular mode box and the Antarctic oscillation webpage and relating to only the total productivity eaten by the SESSF stocks.	AFMA		Not yet started The climate indicator report is produced by CSIRO under a contract with AFMA. AFMA will request that these updates are incorporated when the contract is renewed. The updated report should be available for consideration by the assessment RAGs later in 2024.
13	9 SESSFRAG Data Meeting 2023	AFMA to seek advice from SERAG 2023 on what a 'partial update' to a stock assessment should involve. CSIRO should provide options, including how they compare to a full assessment. – amended propose as an updated assessment.	AFMA/ SERAG		Completed SERAG 2023 noted that the "Partial assessment option" provides more confidence than simply inputting new catch data and new CPUE information into a untuned model. It will be a tool utilised by AFMA in situations that require it, for example if an additional Tier 1 is required and resources are limited.
14	9 SESSFRAG Data Meeting 2023	AFMA to provide an update at the Chairs' meeting 2024 on a formal process to progress communication with CSIRO to improve automated processes and data processing with steps to be implemented to identify outliers for improved data quality.	AFMA		Completed The CSIRO assessment team and the demersal team at AFMA hold a video conference every second Friday. Staff from AFMA's data management team will join every second of these meetings to address any data processing issues. Agencies have agreed to flag any ongoing data issues with AFMA. AFMA has partially implemented an in-house

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
					QA process and intends to expand it over the next few months.
15	9 SESSFRAG Data Meeting 2023	AFMA and CSIRO to discuss the implications of not having updated discard estimates available for some Tier 4 assessments and propose a way forward, for consideration by SESSFRAG in 2024.	AFMA/ CSIRO		Not yet started AFMA will discuss this topic with the CSIRO assessment team prior to the 2024 data meeting.
16	10 SESSFRAG Data Meeting 2023	AFMA to seek advice from SERAG 2023 as to the merits of a full assessment of Silver Warehou in 2024 and limited the assessment of Pink Ling that year to the eastern stock only.	AFMA/ SERAG		Completed SERAG 2023 recommended that a full Tier 1 assessment is performed on Silver Warehou in 2024 given concern for the stock. SERAG 2023 also recommended that the Tier 1 assessment for western Pink Ling be deferred to a later date in order to free up resources for the Silver Warehou assessment. The Tier 1 assessment of eastern Pink Ling will proceed as planned.
17	11 SESSFRAG Data Meeting 2023	That the following research priority be included in the plan for the SESSF – Improving the understanding of how key species in the SESSF might respond to climate change by the collection of data during the next 12 to 18 months given predictions of unusually high (and perhaps record high) water temperatures.	AFMA		Underway Given the timing of potential funding sources this priority was being pursued as a rapid response project outside of the ARC process. An update on its status will be provided at the meeting.
18	11 SESSFRAG	FAS seek advice from SERAG 2023 on the addition of cascade Orange Roughy otolith samples to the ageing	FAS/ SERAG		Not yet started This work will be considered during an

No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
	Data Meeting 2023	plan.			Orange Roughy ageing and assessment priortisation workshop to be held after the 2024 data meeting.

Action items raised by SERAG for consideration by SESSFRAG

■	SERAG 1 2023 Data Updates	AFMA and CSIRO to collaborate and add a step in the Data Summary process to ensure that research catches are identified and treated separately to logbook data (to avoid issues associated with scaling up research catches).	AFMA/ CSIRO	SESSFRAG Data Meeting 2024	<u>Completed</u> AFMA and CSIRO have discussed this topic and research catches will not be scaled in future discard reports.
■	SERAG 1 2023 Blue-Eye Trevalla (slope)	CSIRO to include catch records for Blue-Eye Trevalla (slope) prior to the traditional reference period (1997) when undertaking the 2024 assessment.	CSIRO	SESSFRAG Data Meeting 2024	<u>Underway</u> The early catch time series for Blue-Eye Trevalla (slope) is available and will be presented to SESSFRAG in 2024 for consideration.
■	SERAG 1 2023 Cascade Orange Roughy	CSIRO and FAS to investigate if Cascade Orange Roughy sampled in 1999, 2004, 2020 and 2021 were from spawning aggregations.	CSIRO/FAS	SESSFRAG Data Meeting 2024	<u>Not yet started</u> This work will be considered during an Orange Roughy ageing and assessment priortisation workshop to be held after the 2024 data meeting.
■	SERAG 1 2023 Cascade Orange Roughy	CSIRO/FAS/AFMA to discuss an Orange Roughy ageing plan including ageing requirements for each Orange Roughy stock, and the order of priority for assessments.	AFMA/ CSIRO/ FAS	SESSFRAG Data Meeting 2024	<u>Not yet started</u> This work will be addressed during an Orange Roughy ageing and assessment priortisation workshop to be held after the 2024 data meeting.
■	SERAG 1 2023 Cascade Orange Roughy	CSIRO to explore the potential use of Orange Roughy otolith weight as a proxy for age to reduce analysis costs (noting the need for validation and ground truthing of the otolith weight/age relationship every few years)	CSIRO	SESSFRAG Data Meeting 2024	<u>Not yet started</u> This work will be considered during an Orange Roughy ageing and assessment priortisation workshop to be held after the 2024 data meeting.
■	SERAG 1 2023 Western Orange Roughy	CSIRO and FAS to examine otolith weight frequencies, fish length frequencies and maturity data from Orange Roughy sampled through the WORRP. CSIRO to determine if there is now sufficient data to undertake an assessment of Western Orange Roughy.	CSIRO/FAS	SESSFRAG Data Meeting 2024	<u>Not yet started</u> This work will be considered during an Orange Roughy ageing and assessment priortisation workshop to be held after the 2024 data meeting.

Action items raised by GABRAG for consideration by SESSFRAG

🟧	5 GABRAG 2 2023	AFMA to discuss the timing of the next Deepwater Flathead assessment with SESSFRAG.	AFMA	SESSFRAG Chairs' meeting 2024	<u>Underway</u> To be discussed at the 2024 Chairs' meeting during agenda item 16.
🟩	5 GABRAG 2 2023	Paul Burch to submit a proposal for validating catch and age models and data sources for data-limited Orange Roughy stocks to SESSFRAG.	CSIRO	SESSFRAG Chairs' meeting 2024	<u>Redundant</u> This research proposal was considered and supported by SERAG and GABRAG in 2023. How the work is funded is a matter for discussion between AFMA and CSIRO.
🟧	5 GABRAG 2 2023	AFMA to discuss the timing of future ERAs for the otter trawl and Danish seine fleets in the GAB with Dr Miriana Sporcic.	AFMA	SESSFRAG Chairs' meeting 2024	<u>Underway</u> To be discussed at the 2024 Chairs' meeting during agenda item 16 Research.
🟧	5 GABRAG 2 2023	AFMA to request an update on the status of the Deepwater Dogfish project, potentially in the form of a presentation at the next SESSFRAG meeting.	AFMA	SESSFRAG Chairs' meeting 2024	<u>Underway</u> Franzis Althaus will provide an update on this project at the 2024 Chairs' meeting during agenda item 13.
🟩	5 GABRAG 2 2023	AFMA to approach John Stewart for a presentation on the stock structure of Silver Trevally and Ocean Jackets.	AFMA	SESSFRAG Chairs' meeting 2024	<u>Redundant</u> AFMA has approached John Stewart for a presentation at the 2024 Chairs' meeting but the analyses are incomplete. AFMA will request that presentations are given to SERAG and GABRAG in 2024.

Action Items and Recommendations arising from SESSFRAG Chairs' Meeting April 2024

Action Item	Agenda Item	Description	Responsibility	Timeframe
1	4	MSHS project team to present results of MSE testing for 'trigger species' approach. In that regard, SESSFRAG should then consider how trigger species impacted by climate change can be effectively addressed under the AFMA Climate Risk Framework.	CSIRO	SESSFRAG Data meeting 2024
2	8	Paul Burch to circulate the draft catch history report to RAGs before the SESSFRAG data meeting 2024.	CSIRO	SESSFRAG Data meeting 2024
3	12	AFMA, CSIRO and NSW DPI to discuss the timing of the next Silver Trevally joint assessment.	AFMA/NSW DPI/ CSIRO	As soon as possible
4	12	AFMA to summarise the information on Smooth Oreo (other) presented to SERAG in 2020 with respect to the 6-year review cycle for trigger species.	AFMA/CSIRO	As soon as possible
5	15.1	AFMA to present the climate risk framework with some species in consideration against that framework at SESSFRAG Data meeting 2024.	AFMA	SESSFRAG Data meeting 2024
6	16	AFMA to amend the scope to the Multi-species Harvest Strategy Phase 2 to include the outcomes of the harvest strategy, climate change trends and shocks e.g., low recruitment scenarios and buffer work (undercaught TACs), Dynamic B_0.	AFMA	As soon as possible
7	16	AFMA to discuss with various policy-based bodies (taking some examples) (ABARES, DCCEW, DAFF-fisheries) to ensure that the results of the multi species HS project conforms in practice and philosophically to their own processes.	AFMA	As soon as possible

8	16	Geoff Tuck to present outcomes of previous project on spatial closures to inform future discussions addressing spatial closures in the context of harvest strategies and methods.	CSIRO	SERAG 2024