



Australian Government

Australian Fisheries Management Authority

Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group (SESSFRAG) Data Meeting 2023

Meeting minutes

30–31 August 2023

Hobart

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Agenda

Location: Hobart/MS Teams

Chair Name: Dr Cathy Dichmont

Agenda Item	Purpose	Presenter
1. Preliminaries <ul style="list-style-type: none"> a. Acknowledgement of Country, welcome and apologies b. Declarations of interest c. Adoption of Agenda d. Minutes from previous meetings 	For decision	Cathy Dichmont
2. Actions arising from previous meetings	For information	AFMA ¹
3. Data collection programs <ul style="list-style-type: none"> a. ISMP⁵ annual report b. SIDaC⁶ annual report c. Fish Ageing Services (FAS) annual report (including ageing plan for Orange Roughy) 	For discussion	a. AFMA b. Mr Simon Boag c. Dr Kyne Krusic-Golub
4. CKMR sample size and CVs	For discussion	Dr Robin Thomson
5. Review of CPUE standardisation	For discussion and advice	Dr Miriana Sporicic
6. Catch & Discard Data <ul style="list-style-type: none"> a. 2023 Discard Reports (Data to 2022) b. 2023 Catch report (Data to 2022) 	For advice	a. Dr Roy Deng and Dr Toni Cannard b. Dr Franzis Althaus
7. Describing age-based assessment using SS-DL approach for non-eastern Orange Roughy	For advice	Dr Paul Burch
8. Climate change <ul style="list-style-type: none"> a. Climate and ecosystem status report for the SESSF b. Climate influence on SESSF species 	For discussions	Ms Alice McDonald
9. Transition to a new SESSF harvest strategy <ul style="list-style-type: none"> a. Outcomes of MSHS project c. Transitioning from old to new 	For advice	Mr Dan Corrie
10. MYTAC and data summary review	For advice	AFMA
11. SESSF Data and ISMP plans <ul style="list-style-type: none"> a. Recommended changes 	For advice	AFMA
12. 2023 stock assessment Q&A <ul style="list-style-type: none"> a. Brief opportunity for stock assessors and/or SESSFRAG members to seek guidance or clarity on upcoming stock assessments 	For advice	CSIRO
13. 2023 Chairs meeting dates	For decision	EO
14. Other business		

¹AFMA – Australian Fisheries Management Authority, ²TAC – Total Allowable Catch, ³MYTAC – Multi-Year Total Allowable Catch

⁴CKMR– Close Kin Mark Recapture, ⁵ISMP– Integrated Scientific Monitoring Program, ⁶SIDaC – Shark Industry Data Collection

Agenda item 1. Preliminaries

1.1 Welcome and apologise

Dr Cathy Dichmont (the Chair), welcomed members, invited participants and observers to the meeting with an Acknowledgement of Country.

Table1. Meeting attendees

Chair	Dr Cathy Dichmont	
SESSFRAG members	Mr Lance Lloyd, Scientific Member (GABRAG ⁷ Chair)	Dr Sarah Jennings, Economic member
	Dr Paul McShane, Scientific Member (SERAG ⁸ Chair)	Ms Sally Weekes, AFMA member
	Mr Sandy Morison, Scientific Member (SharkRAG Chair)	Dr Beth Fulton, Scientific member (CSIRO)
Invited participants	Mr Simon Boag, Industry	Dr Robin Thomson, CSIRO
	Ms Franzis Althaus, CSIRO	Dr Geoff Tuck, CSIRO
	Ms Caroline Sutton, CSIRO	Dr Ian Knuckey, Fishwell Consulting
	Mr Neil MacDonald, Industry	Dr Kyne Krusic-Golub, Fish Ageing Services
	Dr Paul Burch, CSIRO	Dr Nick Hill, CSIRO
	Dr Pia Bessell-Browne, CSIRO	
	Dr Roy Deng, CSIRO	
	Dr Toni Cannard, CSIRO	
	Dr Miriana Sporcic, CSIRO	
AFMA	Mr Dan Corrie	Mr Tamre Sarhan
	Dr Mark Grubert	Mr Henry Oak
	Dr Lara Ainley	Ms Alice McDonald
	Ms Anna Willock	Mr Jack Sullivan
Observers	Dr Steph Brodie, CSIRO	Mr James Woodhams, ABARES
	Mr Tim Emery, ABARES	
	Mr Daniel Wright, ABARES	
Exec. officer	Ms Michelle Henriksen, AFMA	

⁷GABRAG –Great Australian Bight Resource Assessment Group, ⁸SERAG –South East Resource Assessment Group, ⁹ABARES –Australian Bureau of Agricultural and Resource Economics and Sciences

1.2. 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 prior to the meeting.

SESSFRAG members considered the potential for some pecuniary interests for particular research and industry attendees with agenda items listed in Table 2.

SESSFRAG recognised the relevant 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 the members with no conflicts. To this effect it was noted that Scientific Member Dr Beth Fulton, would participate in the discussion but not in the provision of advice, because of the potential conflict identified for CSIRO with specific items.

Table 1: Agenda items with declared conflicts of interest

Agenda Item	Declared conflict
4.0 CKMR sample size and CVs	CSIRO
5.0 Review of CPUE standardisation	CSIRO
9.0 Transition to a new SESSF harvest strategy	Mr Simon Boag, Dr Kyne Krusic-Golub, Dr Ian Knuckey, and CSIRO
10.0 MYTAC and data summary review	Mr Simon Boag, Dr Kyne Krusic-Golub, Dr Ian Knuckey, and CSIRO
12.0 SESSF Data and ISMP plans	Mr Simon Boag, Dr Kyne Krusic-Golub, Dr Ian Knuckey, and CSIRO

1.3. Adoption of agenda

SESSFRAG recommended the removal of agenda item 11.0 *Review of SESSF species catch* due to a delay in the preparation of this paper and the item being recommended for discussion at the SESSFRAG Chairs meeting in 2024. The RAG adopted the agenda (Page 1) as final with the noted change.

1.4. Minutes of previous meeting

SESSFRAG endorsed the April 2023 Chairs Meeting minutes, as a true representation of the outcomes of that meeting.

Agenda item 2: Actions arising from previous meetings

SESSFRAG noted that status of actions items detailed in Attachment B, discussing, and providing advice regarding the following items:

- Action item 14 SESSFRAG Data 2022 Item 8.0 – FAS and AFMA to check whether school whiting length and age data were collected in port or on-board to understand the discrepancy in ages between 2020 and 2021

SESSFRAG accepted the explanation from AFMA regarding sampling differences for School Whiting between 2020 and 2021 and this action is now considered complete.

- Action item 28 SESSFRAG Data 2020 Item 12.0– AFMA and CSIRO to liaise with the states regarding estimates of discards for SESSF quota species and consider establishing a discard and recreational fishing working group to consider a set of decision rules, in particular:
 - a. Whether to apply commonwealth discard rates to state catches when commonwealth and state gear types or management controls differ;
 - b. How to estimate state discard rates and total catches where Commonwealth discard rates are not applied because of differences in gear type or management controls; and
 - c. Whether the approach used to determine recreational catch weights for shark species should be extended to other SESSF species as part of the 2021-22 Data Services Contract.

SESSFRAG accepted the recommendation by AFMA to remove this item given its age and that parts of the action item are unlikely to be progressed until after the MSHS and associated data collection and monitoring programs are operationalised.

- Action item 36 – CSIRO to seek feedback from MSC, ABARES, and DAFF on the two methodologies identified for measuring risk under the discount factor project.

SESSFRAG supported the recommendation by AFMA to remove this action item given the project has been finalised.

- Action item 38 SESSFRAG Chairs' 2022 Item 9.0 – The RAG to discuss the implications of the MSHS project on the ageing plan and the inclusion of non-quota species, such as leatherjackets, at the Chairs' 2021 meeting.

SESSFRAG supported the recommendation by AFMA to remove this action item given its age and ageing plans for species will be reconsidered as the stock assessment schedule is updated and the MSHS is operationalised.

Agenda item 3: Data collection programs

SESSFRAG noted and provided the following advice on the updates of various data collection and monitoring reports.

ISMP annual report 2022

AFMA introduced the agenda item and provided an update on the ISMP annual report 2022.

SESSFRAG noted:

- Electronic data collection is currently in the trial phase, with a possible benefit for SIDaC to adopt AFMA's data capture software.

Commonwealth Trawl Sector (CTS)

- Limited observer resources were available in 2022 due to commitments in other fisheries and low staffing levels but increased towards the second half of the year resulting in improved achievement of targets.
- No effort in Zone 10 targeting Royal Red prawn due to the one fisher in this fishery transitioning to a new vessel.
- For the second quarter, delays regarding onboarding of new staff and buddy trips for training continued. COVID-19-related reasons and vessel availability also contributed to this.
- There was minor catch of Orange Roughy in the Southern Zones (Maatsuyker, Pedra Branca and Cascade).
- Limited observer coverage levels across the CTS resulted in limited collection of biological samples, however, sampling effort improved as the year progressed.
- There were limited opportunities for Jackass Morwong otolith collection in the CTS earlier in the year but increased in the fourth quarter following prioritisation of these species.
- Reduced fishing effort in 2022 resulted in reduced trawl-based School Whiting length collections.
- AFMA continues to train observers to ensure appropriate sample collection across species, including less familiar species.

- Electronic data collection is currently in the trial phase, with a possible benefit for SIDaC to adopt AFMAs data capture software.

Great Australian Bight (GAB)

- Targets were not achieved in the first half of the year but increased in the third quarter.
- GAB length data collection in Adelaide continues for Bight Redfish, with Deepwater Flathead prioritised for sampling in 2022.
- Otolith collection increased in the third quarter of 2022 within increased coverage levels.

SESSFRAG advice and recommendations

- There were concerns regarding the over collection of data for the Blue Grenadier spawning zone resulting from a management requirement for 100 per cent observer coverage in this sector that ties up observer resources at the expense of data collection in the broader fishery, where it was difficult to achieve data collection targets.
- SESSFRAG recommended that AFMA look at alternative options for meeting the required observer coverage levels to better achieve data collection targets in the broader fishery during the Blue Grenadier spawning period.
- To provide a more holistic view of total sampling coverage, SESSFRAG recommended AFMA to provide summaries of the GABIA crew-based data collection program at future data meeting, noting crew-based collection will be re-introduced in September 2023.

SIDaC report

Mr Simon Boag provided an update on the SIDaC annual report for 2022.

SESSFRAG noted:

- Industry overshot Gummy Shark data collection targets for the first couple of years but have since worked to stay closer to the target across the strata as there is a cost associated with collecting, processing, and storing samples.
- Sampling targets for School Shark were achieved for the first time in the second quarter of 2022. It was noted by CSIRO that due to a move towards CKMR, there may no longer be a need to provide an even sampling distribution across the strata's for both spatial and temporal coverage that the current SIDaC sampling plan was designed to cover. Going forward, CKMR does not require length frequency data. The changes to the sampling plan will be discussed at the Shark Resource Assessment Group (SharkRAG) in 2023.
- Boats in the fishery are currently not fishing in all zones every quarter, making it difficult to achieve targets set for that zone.
- There is a need to ensure that individual samples can be linked in the data base, back to an individual fishing operation.
- SIDaC aims to improve sampling targets for finfish species through incentives for on-board crew. It was noted there is room for better coordination between vessels and projects to reach targets. It was recognised that relationships may be difficult to maintain, as interest and effort from crew needs to be upheld.

SESSFRAG advice and recommendations

- To allow for a better assessment of achievement of targets, the SIDaC annual report should include a target column with length frequency and vertebrae targets and samples collected, separated.
- AFMA to remove the sample collection of Ribaldo from the data plan and communicate with the respective sampling teams.

Fish Ageing Services (FAS) annual report

Dr. Kyne Krusic-Golub provided an update on the newly aged data and asked SESSFRAG to provide advice on the proposed ageing plan for 2023 and 2024 assessment year.

SESSFRAG noted and discussed:

- The majority of registrations come from various FIS, industry and Fishwell surveys from south east trawl in zones 20 and 40, with a major focus on Blue Grenadier. FAS are only receiving Gummy Shark as School Shark are going directly to CSIRO.
- Species reaching their sampling target include:
 1. Blue Grenadier both spawning and non-spawning;
 2. Eastern Blue Warehou;
 3. Pink Ling;
 4. Western Silver Warehou;
 5. Trawl caught School Whiting;
 6. Trawl caught Tiger Flathead, and;
 7. Western Orange Roughy.
- Gummy Shark and Deepwater Flathead are well represented for the GAB trawl sectors.
- Due to an upcoming Tier 1 assessment for Silver Warehou, an effort was made to catch up on ageing samples for this species.
- Gummy Shark (vertebrae and length frequencies, age errors), ages ranged between 2-18 in 2018-2013 and 2021-2022 represented by younger age classes.
- The Deepwater Flathead age error result of 2.08 suggests ageing is precise for this species, showing no bias.
- Blue Grenadier was updated from 2022, noting 2021 was completed in previous years. The stock is made up of an older population, rarely seeing fish younger than 4-5 years old in the spawning fishery.
- School Whiting appeared to be a progression of 3–4-year-old fish, with a question if sampling in 2021 has influenced the strong representation of 3-year old's, however noted no cause for concern.
- Selected samples for Orange Roughy Cascade from 2020 and 2021 are being prepared for ageing that will be completed by the end of 2023. FAS will be comparing historical samples from 1999 and 2004 to ensure the results are consistent with sample results following the adoption of the updated Orange Roughy ageing plan. Bias is present in the historical ageing data for Orange Roughy Cascade, with the need to further discuss how to progress with the analysis of historical data and what samples would be required to be re-aged, either in their entirety or in sub-samples. The re-ageing of historical otoliths will be further discussed at SERAG 2023.
- Following a discrepancy detected in the mean otolith weight at fish length data for 2015, FAS seek advice on suitable assessment options to consider if a different stock is coming into the Cascade Orange Roughy population or if the discrepancy is being represented by a length issue coming into the data. Noting that years between 1996 and 2007 present heavier otoliths possibly representing older fish, with 2008-2021 presenting less of a difference. FAS will confirm lengths used for otolith samples is standard length to check the discrepancies.

- GAB samples require further work to determine which GAB zones the samples were collected from. CSIRO attempted to match vessel name and date of catch with logbook/observer shot with little success. FAS asked for feedback on the ageing plan for 2023-24 and SESSFRAG provided recommendations under agenda item 11.
- SESSFRAG noted the updates on ongoing work to support the stock assessment process including continued migration of age error and precision age data into a customised database format.
- Part of project was to collate the samples coming from older FIS's into one place coming from industry and Fishwell, leading to a delay in registrations with a majority now remaining as archived samples.
- CSIRO noted ageing is inaccurate for School Shark, and CSIRO is working to progress DNA ageing as an alternative method. Vertebrae collection and ageing is still required whilst DNA ageing is progressed and refined. Ageing of School Shark may be undertaken by CSIRO once DNA ageing is proven to be reliable and cost-effective.

ACTION item 1 – 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.

ACTION item 2 - AFMA to liaise with SSIA/SETFIA regarding the adoption of the AFMA electronic observer data collection system.

ACTION item 3 - AFMA to include GABIA crew-based data collection summaries in the annual ISMP reports presented to SESSFRAG.

ACTION item 4 - SSIA to include a column for data collection 'target' to allow for a comparison with total 'achieved', separated by length frequency and otoliths.

ACTION item 5 – 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.

ACTION item 6 – AFMA to remove the collection of Ribaldo lengths from the data plan and communicate the revised plan to the relevant data collection teams.

ACTION item 7 – Fishwell, FAS and CSIRO to collaborate and identify catch locations/zones for old GAB orange roughy samples.

ACTION item 8 - FAS to work with GABIA, CSIRO and Fishwell on the utility of using fish length to otolith weight ratios to provide information on stock status for non-assessed Orange Roughy. CSIRO to provide advice if this requires a project.

Agenda item 4: CKMR sample size and CV's

Purpose of the agenda:

To provide SESSFRAG members with an overview of the sample sizes required to support Close Kin Mark Recapture (CKMR) assessments of key SESSF species identified through the CKMR project and prioritise species to start collecting samples for now.

SESSFRAG noted:

- The presentation by CSIRO on the CKMR design and what annual sample collection totals are feasible.

- The species identified by the CKMR working group as suitable species to progress with CKMR analysis include:
 1. Eastern Redfish
 2. Eastern Jackass Morwong
 3. Tiger Flathead
 4. Blue-eye Trevalla
- Approximate annual sample size targets were presented for each species, to achieve acceptable CVs after a 6-year sampling period.
- CSIRO recommended also calibrating epigenetic data through the collection of tissue samples across the age ranges; this would eventually make otolith collection redundant.
- Large sample sizes are required for initial CKMR abundance estimates, but the sampling demands decline thereafter.

SESSFRAG discussed:

- The value of collecting fewer samples that may result in higher CV's but can still support management decisions based on upper and lower confidence bounds.
- The benefit of starting the collection process as soon as practicable to start working out the logistics. Further, Blue-eye Trevalla is expected to take longer to get appropriate spatial coverage and therefore the sooner sample collection can start the better.
- Samples from discarded catch is as valuable for the CKMR assessment as retained catch – the source is unimportant. Discards might provide samples from young animals, which would be valuable for epigenetic ageing and provide more recent abundance estimation for CKMR.
- The number of samples required for CKMR, while higher than other sample collection targets, was achievable, particularly if spatial information is not required as it appeared for most species not to be important, therefore making port sampling in one or a limited number of locations, feasible.
- Collecting tissue samples in conjunction with existing sampling programs by industry would be a cost-efficient way of obtaining samples for CKMR.
- Future discussions are required regarding whether CKMR data are to be used in a stand-alone assessment or as an additional index into the current Tier 1 stock assessments.

SESSFRAG advice:

SESSFRAG recommended

- Progressing the CKMR sample collection for 1) Blue-eye Trevalla due to the complex spatial structure and high monetary value of the stock, and 2) Eastern Redfish because it can be sampled from the one location and that the species is under a bycatch TAC. Further, that in six months' time, samples collected be re-evaluated to assess progress, identify any logistical problems, and discuss ageing viability with an estimate of the cost involved.

ACTION item 9 – AFMA to work with the relevant data collection programs and start collecting tissue samples for CKMR analysis for Eastern Redfish and Blue-eye Trevalla and report back in around six months' time regarding progress.

Agenda item 5: Review of CPUE standardisation

Purpose of the agenda:

For SESSFRAG to consider the CPUE standardisations undertaken for SESSF species by Dr Miriana Sporcic (CSIRO). SESSFRAG to 1) provide advice on the implications of the day/night data issue on the 2022 RBC advice, and 2) discuss and provide advice on a preferred standardisation approach to use in 2024 to account for recent management changes in the Commonwealth Trawl Sector.

Day/night data

SESSFRAG noted:

- The data error following the introduction of the Agency Data Capture (ADC) platform. ADC Logbook data is collected in Coordinated Universal Time (UTC); in 2022, to standardise time data across systems and facilitate conversations with stakeholders, these data were converted from UTC back to Sydney local time. CSIRO were unaware of the change because the time zone identifying label was not updated. Consequently, the times in the ADC collected data used to nominate day/night in the CPUE standardisations used in stock assessments in 2022 were incorrectly assumed to be in UTC time. The MYTAC working group identified that this error may have had a impact on the RBC and TAC advice for Mirror Dory East during the 2023–24 fishing season.

SESSFRAG discussed and recommended:

- SESSFRAG advised that the slight difference between the old CPUE time series (based on erroneous data) and the updated CPUE (using corrected data), for Mirror Dory would not have a significant impact on RBC advice and associated TAC decision for this stock during the 2023-24 fishing season.

Effect of structural adjustment and closures on CPUE

SESSFRAG noted:

- To account for the impact of the structural adjustment and spatial closures in future CPUE standardisations, CSIRO suggested that a comparison could be undertaken 1) with and without the recent CTS closures implemented, and 2) with and without vessels going in or out of the fishery. The analysis could use data from the five most recent years for the selected species identified as those most likely impacted:
 - Mirror Dory
 - Silver Warehou
 - Jackass Morwong
 - Flathead
 - School Shark

SESSFRAG discussed and recommended:

- The benefits of starting to explore the analyses now to allow adequate time in the lead up to 2024 assessments, versus it being too premature and a hypothetical exercise using historical data as the impacts of the structural adjustment and closures are not yet fully realised. Further, the analysis would still need to be updated prior to the assessments and there may be new factors that arise in the data that still need to be examined, e.g., there will be shifts in effort from high CPUE areas to lower CPUE areas that will not be evident in the data at least for 12 months, if not longer.
- SESSFRAG recommended updating the CPUE standardisations in 2024, to allow for one complete year of data to become available post buy-out, using standardisation methods used previously for closures. Then update the CPUE standardisations in 2025 that would be used in the 2026 stock assessments for Flathead, School Whiting, Bight Redfish, and Silver Warehou.

Tier 4 assessment inputs for 2023

SESSFRAG noted:

Dr Miriana Sporcic (CSIRO) sought advice from SESSFRAG on the upcoming Tier 4 assessments and proposed changes to the discard estimate rules.

- Dr. Paul Burch (CSIRO) to provide drafts of catch history and discard documents to the relevant RAGs which will provide information to potentially revise the catch histories.

Mirror Dory East

- CSIRO now uses the AFMA CDR FACT table in the AFMA Datawarehouse to source CDR catches. This table contains data from 1992–1997, while the previous CSIRO extract began from 1998.
- The discard rule includes 1) use mean discard estimates from years where data exists (1986-2020), and 2) the same average discard estimates will also be used to forward fill any missing years (i.e., 2011-2014, 2016, and 2018).
- The proposal was to forward fill missing values with the most recent estimate.
- SESSFRAG discussed the issue of forward filling the most recent estimate for Mirror Dory East, and the inability to know if one point in the data would be suitable, due to Mirror Dory often showing a cyclical trend in discards. For example, based on the 2022 Data Summary report, the most recent discard estimate is the highest on record and would therefore not necessarily provide a suitable representative estimate for following years. The RAG noted that estimates are also sensitive to sampling in that particular year and suggested using an average from historical data.

Mirror Dory West

- No updates to CDRs prior to 1998.
- Status quo method (same as last year).

Ribaldo catches

- New CDR data from 1992 to 1995 and 1998.
- Options for assessment include 1) Use new CDRs and LOG (depending which were greatest, for the relevant early period (prior to 2005), which produces less total catch between 2002-2004 compared with the status quo for the same period, or 2) status quo method which was previously accepted.
- State catches from NSW in 2011 has changed from the previous estimate (from 1.415 t to 1.632 t)

Ribaldo discards

- Years 1986 and 1997 are backfilled using mean discard estimates from 1998-2004 (9.91%).
- Proposal to replace missing values from 2009 with most recent estimates from previous years, which will apply to 2020-2022 discard estimates.

Royal Red Prawn

- New CDR data from 1992-1998.
- Options for assessment include 1) use new CDR between 1992-1998. Total catch (incl. NSW) is less than the total catch using combined values, except for 1998 where total catch (new CDR values and NSW catch combined) is greater than the values [530.4 vs 438.9], or 2) Status quo, using previously accepted estimates 1992-1998.

SESSFRAG discussed and recommended:

Mirror Dory

- SESSFRAG recommended for Mirror Dory East using the rule as per 2020. The method includes using discards available in the data set excluding forward fills, retaining the average and using the average to backfill where data is not available in years prior to 1998. Then, forward fill through to

2011 through to 2014, 2016 and 2018, in years where no data is available since 2018, use same average number opposed to forward filling with the single most recent estimate.

- SESSFRAG recommended using the status quo method for Mirror Dory West.

Ribaldo & Royal Red Prawn

- SESSFRAG recommended using the status quo method for Ribaldo (catches and discards), and Royal Red Prawn.

Proposed Tier 4 plan for 2023 meetings

- SESSFRAG supported CSIRO providing updated assessments and RBCs for Mirror Dory (east and west), Ribaldo, and Royal Red Prawn at SERAG 1 2023, but also noted that Ribaldo and Royal Red Prawn have been proposed as trigger species under agenda item 9.0. If this proposal is accepted, then the assessments for these species will not proceed. The draft new dynamic Tier 4 assessments, along with the traditional Tier 4 assessments for comparison of methodology, would be provided for Blue-eye Trevalla and Deepwater Sharks at SERAG 1, followed by RBCs derived from the accepted method at SERAG 2
- Concerns were raised regarding how valid the outputs of the Royal Red Prawn assessment in 2023 would be due to such low catches in recent years and that deferring the assessment until more data is available may be more appropriate. SESSFRAG noted that the discussion under Agenda Item 9 would likely address this discussion.

Agenda item 6: Catch and Discard data

Purpose of the agenda:

- To update SESSFRAG on changes/issues relating to SESSF data and seek advice on the treatment of a number of data issues.

SESSFRAG noted:

- The data issues presented by Franzis Althaus (CSIRO) outlined in the Catch and ISMP Discard reports.
- Roughskin dogfish one CAAB code for the deepwater shark basket was missing from the data impacting historical logbook catch. Historical issues are still present for paper logs coming through impacting a small set of data going forward.
- WA catches have not been included in assessments to date. Deepwater flathead showed minor changes in previously reported catches, with more substantial catches of Bight Redfish.
- NSW confirmed an increase in School Shark catch for 2020 by 6 t.
- Discard estimates were not reduced for Mixed Oreos, following potential bias that may be due to a hidden strata in deeper waters, with observer effort in that year also potentially oversampled in deepwater zones.
- The same methods were run for the 2022 discard estimates to compare against the 2021 results which were consistent. The data presents 8 strata's and 4 species groups, with 17 species failing the validity test.

SESSFRAG recommended:

- SESSFRAG supported the removal of non-trawl strata from the discard estimation for Gummy Shark and School Shark from 2024 onwards. There is little observer data for the GHAT sector, with little information provided for the strata remaining in the data.

- SESSFRAG endorsed using a sliding average operation time of the same fishery and gear codes and keeping the day/night field static for CPUE calculations in Tier 4 assessments.
- SESSFRAG recommended updating the labelling of the discard tables to reflect only the data used in that calculation.

Agenda item 7: Describing age-based assessment using SS-DL approach for non-eastern Orange Roughy

Purpose of the agenda:

CSIRO is proposing the use of the Data Limited Stock Synthesis (SS-DL) tool (Cope 2023) to provide age based assessments of Cascade Orange Roughy and Great Australian Bight (GAB) Orange Roughy stocks in 2025. At its last meeting in April 2023, SESSFRAG requested that before it approves this method for use, it is presented with a more detailed explanation of how SS-DL differs from the old Tier 3 assessment (as the latter is no longer accepted). CSIRO presented additional information for SESSFRAG to consider.

SESSFRAG noted:

- SS-DL provides two methods for age and length-based assessments, requiring inclusion of biological parameters pre-specified within the assessment and providing an interface to input Stock Synthesis information.
- There are age-data only models and models that use both catch and age data, implemented as an age-structured, integrated assessment model without the use of an index.
- Rudd et al. 2021 tested the models in Stock Synthesis by using systematic data reduction from existing Tier 1 assessments. This work was also simulated using Stock Synthesis with four different life histories 1) short-lived and slow-growing, 2) short-lived and fast-growing, 3) long-lived and slow-growing, and 4) long-lived and fast-growing
- Given the use of these models is intended for Orange Roughy, Dr Burch focused on the results of the long-lived, slow-growing scenarios, along with high recruitment variables versus low recruitment, different sample sizes in length data and different number of years of length data. The simulation presented relative error for low recruitment, with variability declining sharply as you increase length data.
- CSIRO recommended implementing age-and catch-based methods for the Cascade and GAB Orange Roughy stocks, particularly given there have been no successful acoustic surveys for these stocks. If accepted by SERAG and GABRAG, the SS-DL method would provide estimates of stock status.
- SESSFRAG discussed the merits of age only assessment methods compared with age and catch assessments. It noted that age (or length) only assessments were only used when catch data were not available or were unreliable. SESSFRAG decided that catch data should be included where available.
- There is the possibility of replicating the simulation study or a systematic data reduction for eastern Orange Roughy assessment (or both) if funding is available.
- An age-length key could provide more valuable information compared to age data alone which is useful for when fishing a non-spawning aggregation with varied length and age classes. Cascade and GAB Orange Roughy have historically been caught from both spawning and non-spawning aggregations. However, recent catches are assumed to have not been from spawning aggregations.
- New recruitment is expected to be occurring in the GAB. Questions were raised whether the model could understand or account for this if it is occurring. It was noted the age data can estimate the recruitment in the GAB zones.

- If catch records are a good reflection of the fishery, Cascade and GAB Orange Roughy remain viable to use with the SS-DL assessment method.

SESSFRAG discussed and recommended:

- Before accepting these assessment methods, SESSFRAG recommended taking the data rich eastern zone Orange Roughy assessment, removing the index data and then undertaking systematic data reduction of the annual age data and comparing how the assessment performs. CSIRO will provide a scope of the proposed work to SERAG and GABRAG in 2023.
- SESSFRAG also recommended that a separate but related piece of work be included to examine whether a signal of stock status can be detected in the length frequency information from the eastern stock. This is in light of the number of length samples collected for GAB Orange Roughy and being able to get some use out of them, based on the assumption that if the approach works in the eastern zone, then the approach could be used in the GAB.

ACTION item 10 – CSIRO to investigate age and length data to see if it is informative of the status of the eastern Orange Roughy stock.

ACTION item 11 – CSIRO to present a scope of the proposed simulation to both SERAG and GABRAG in 2023.

Agenda item 8: Climate change

Purpose of the agenda:

For SESSFRAG to note the update on the climate adaptation work and the draft Climate and Ecosystem Status Report for the SESSF.

SESSFRAG noted:

- The ecosystem status report presented by Dr Steph Brodie CSIRO, along with the projected forecasts for the SESSF.
- The need to capture Industry comments about what is being seen on the water, and what real time impacts are being felt.
- Demersal/bottom temperatures would provide valuable information. Temperatures across the water column and on the shelf are currently available in the report, noting bottom temperatures are easier to integrate for historic data compared to the most recent data in 2023.

SESSFRAG discussed and recommended:

SESSFRAG recommended that the status report be updated as per the following:

- Expanded the report over multiple pages to better cover the information relevant to the SESSF.
- Inclusion of the number of fishable days would be helpful to capture implication on human health and safety.
- Information on how to interpret the southern annular mode box would be helpful.
- Explanation of the Antarctic oscillation webpage should be included as well as providing a general link to the Australian ocean data network (AODN).

- Where the report refers to ‘productivity’, that this index be amended to relate only to the total productivity eaten by the fish so as to better indicate the short-term and long-term impacts felt by upcoming projected heatwaves.

ACTION item 12 – 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.

Agenda item 9: Transition to a new SESSF harvest strategy

Purpose of the agenda item:

For SESSFRAG to provide advice on the proposed changes to the stock assessment and data analysis schedule.

Trigger species

SESSFRAG noted:

- The Multi-species Harvest Strategy (MSHS) project report is expected to be finished in late 2023. A workshop is also due to be held in October 2023, providing outcomes for the modelling and principal ideas.
- The proposal is to only undertake critical assessments in 2024 and 2025 and reset the assessment schedule from 2026 onwards, in order to free up resources and redirect them to the research needs for the fishery.
- The TACs for trigger species were based on the information available at the time, which was outdated for some species.
- It is important to ensure that the criteria used to nominate trigger species and the triggers themselves are consistent with the policy requirement to avoid the limit reference point.
- The introduction of closures and removal of effort via the structural adjustment has reduced the risk profile of the fishery. Regardless of the assessment outcomes and TACs set, catches of some species/stocks are now so low and sporadic that the impacts of fishing are considered very low.
- Two approaches for trigger species are likely to be components of the new assessment schedules. The indicator species approach identifies species representative of the productivity, value, and vulnerability in a group of species, while monitoring the status on the most vulnerable. RBCs of non-indicator species are adjusted based on changes to the RBCs of the indicator species. The trigger species approach includes only key commercial species assessed regularly. By-product species catch and CPUE are monitored with assessments only occurring if breakout conditions are met. If no breakout rules are met the TAC is rolled over subject to a time buffer (possibly over a 6-year period as proposed in the MSHS project).
- The following criteria used to determine a trigger species:
 - Stock is estimated to be above the target reference point (TRP), or $F > F_{MSY}$; and
 - TAC is less than 75% caught; and
 - It is flagged as a non-indicator species under MSHS.
- If these criteria are met, management decisions include:
 - Maintain the current TAC;
 - Set a trigger at 75% of current TAC (unless otherwise specified);

- Monitor available indicator data;
- Consider an assessment every 6 years unless triggered.
- In addition to evaluating the proportion of TAC caught, information about discards and state catches should also be considered to understand the total mortality against the RBC, if this information is available.
- Application of the proposed criteria demonstrate adherence to the policy objectives to avoid the limit reference point.
- SESSFRAG had no concerns regarding species-specific catch triggers, provided there is careful consideration of total mortality as part of the annual MYTAC review process.

SESSFRAG discussed and recommended:

- SESSFRAG endorsed the proposed species list for inclusion as trigger species along with the associated trigger limits.
- Susceptibility to climate change should be considered when reviewing annual triggers. Climate sensitivity rankings are considered through the MYTAC working group process.
- Due to legislative requirements for testing under harvest strategy and control requirements, it was noted to this is an interim process until the MSHS is implemented. This approach is consistent with the MSHS project which that will be discussed further in upcoming workshops. It is a risk-based approach for species that are minor components of the fishery.

Implementing the ‘SMARP Alternative’ stock assessment and data analysis schedule

SESSFRAG noted:

- The proposed changes to the 2024-25 assessments and data processing requirements:
 - Species/stocks have been arranged based on the RAG which consider them and the habitat in which they live (i.e., shelf, slope or deepwater).
 - The Eastern Orange Roughy assessment was scheduled for 2024 but has been postponed to 2025 because the acoustic optical survey for this stock has been deferred to 2024.
 - Bight Redfish and Tiger Flathead assessments have been deferred from 2025 to 2026. This will avoid multiple Tier 1 assessments running close in schedules, allowing a reset to occur in 2026. Both stocks are assessed either at or above the target reference point with the RBCs either under caught (Bight Redfish) or constrained (Tiger Flathead). The risks of postponing either Tier 1 assessment is therefore low.
 - Blue Grenadier Tier 1 assessment to remain as scheduled in 2025.
 - Silver Warehou has no updated information on age and recruitment, only CPUE and catch data is available. The stock is currently on a 3-year MYTAC based on a low recruitment scenario, with 35% of the TAC caught in 2022-23.
 - Ocean Perch, Saw Shark, and Gemfish West assessments were proposed to be cancelled as they now become trigger species.
 - Jackass Morwong and John Dory assessments have been cancelled. These species are overfished which is likely to undermine the stock assessment and unlikely to change the current management approach.
 - Mirror Dory, Blue-eye Trevalla (slope) assessments have been cancelled for 2024. Both stocks are assessed annually. Stocks are proposed to move to a 2-year MYTAC subject to outcomes of the 2023 stock assessments.
- RAGs would continue to assess the incoming data during the ‘off-years’ (i.e., non-assessment years), and discuss research and re-invest effort into improving upcoming assessments.

- Under legislative requirements there would still be an obligation to annually review what information is available for overfished species, but not at an expense of examining options for these species.
- AFMA have the capacity to produce data reports at the sector level, species level, and for protected species. The proof-of-concept reports were noted and SESSFRAG highlighted that AFMA must ensure data is accurate and comparable to what CSIRO would produce in the data summary reports.
- Some Tier 4 Assessments will not have up-to-date discard estimates. AFMA and CSIRO to discuss the implications of discards incorporated into the proposed schedule.
- Adopting the proposed schedule will influence the information available for ABARES to complete the annual fishery status reports.
- Management costs will be considered as part of the longer-term transition to a revised harvest strategy and management framework.
- Incorporating climate change information into the decision-making process may offer insight into the risk associated with extending MYTACs from 3 to 4 years for some species.
- The preferred option under the strategic monitoring and assessment review (SMARP) project, involves maintaining the current 3-year MYTAC, annual collection of fishery-dependent data (logbooks, biologicals, etc), all stocks assessment with data processing carried out every 3 years, and bi-annual fishery independent surveys (FIS) (which have been discontinued). Excluding the FISs, adopting the SMARP project would result in an estimated annual saving of \$250,000.
- In comparison to the current assessment schedule, SMARP can incorporate the new MSHS whilst allowing time to pursue strategic priorities with a 3-year MYTAC still in place. However, the SMARP project involves an intense on-year for assessments and is inflexible to changes often made based on data needs/logistical issues. No CPUE and discards and additional information would be available during the off years between assessments.
- AFMA propose a 'SMARP alternative' with a 2- or 4-year MYTAC (Tier 1s shift from a 3 year to a 4-year MYTAC), with RAGs continuing to meet each year with a 1 year off and 1 year on data analysis schedule. Estimated savings are expected to be \$280,000 annually. CPUE and data processing would be 1-2 years with discards estimated every 4 years. The benefits of this approach remain similar to the SMARP project with the added advantage of maintaining flexibility in the schedule. However, there is increased uncertainty due to some species being delayed by 1-2 years through extension of MYTACs.
- Four approaches for calculating discard estimates were considered:
 - *The current approach.* Estimates updated annually and the four-year weighted average deducted from the RBC.
 - *Annual update.* Using the most recent year's estimate to deduct from the RBC,
 - *Two-year update.* Using a four-year weighted average deducted from the RBC for the next two years, or
 - *Four-year update.* Using four-year weighted average deducted from the RBC for the next four years.
- Discards estimated when adopting the 2-year approach showed less than a 10% difference and the 4-year approach was less than a 18% difference compared to the current method. It was recommended to update discards every 4 years applying a 4-year weighted average for purpose of calculating TACs.

SESSFRAG discussed and recommended:

- The assessment teams will be impacted in terms of capacity due to multiple Tier 1 assessments scheduled in a single year. CSIRO suggested shifting an assessment for a species of less concern to an off year. This would mean missing a point in the CPUE series and lengths for a single year (for the year prior). The assessment would consequently be less robust but would continue to provide a suitable assessment to produce outputs for the relevant RAGs. SESSFRAG highlighted the long-term trend is more informative than a single CPUE point that would be missed. Time series would remain available, with a recommendation to undertake CPUE bi-annually from 2024.
- While CSIRO is not the only research provider to conduct stock assessment, they are the preferred research provider for the Government.
- For a stock's partial update, CSIRO proposed running the agreed base-case model with updated catch, CPUE, lengths and ages and tuning but with no additional model structure exploration. SESSFRAG noted the suggestion and requested that SERAG confirm what a partial update looks like for species-specific assessments and the estimated costs involved.
- SESSFRAG accepted the proposed 'SMARP alternative' stock assessment and data analysis schedule, including:
 - Conducting CPUE standardisations bi-annually from 2024
 - Updating discard estimates every four years and applying a weighted average for the purpose of calculating TACs
 - Considering the need for discounted RBCs (on a case-by-case basis) in the context of recent catches and overall risk depending on how frequently stock assessments are updated.
- SESSFRAG endorsed the proposed recommendation as an interim solution until the MSHS has been adopted. If more time is necessary, a framework will be required to work under in the meantime.
- The assessment schedule does not include Ecological Risk Assessments (ERAs). These will continue to be scheduled on a 5–6 year cycle. Further discussions will be required when a trigger species is triggered, on the update of ERAs.
- Data efficiencies will need to be realised within the data management project by AFMA. AFMA to develop a formal process addressing the data concerns and utility of AFMA producing data summaries with data control and efficiencies built in.
- A CSIRO project is currently being completed exploring time under discount factors. Most of the TACs are largely under caught, with on the water implications expected to be minor. Recommendations to consider the need for discounted RBCs on a case-by-case basis as assessments are updated. How this may apply under a MSHS remains uncertain.
- AFMA to clarify the intended schedule for CPUE and discards processing for the assessment schedule. CSIRO could potentially still undertake data processing rather than 4- year or more frequently as data comes in calculated bi-annually from 2024. Tier 4 assessment would be done in the same year, updating discards assessed every four years, and applying a weighted average for the purpose of calculating TACs. Concerns raised on what goes into the assessments if discards estimates are not available at the time.
- A set of guiding principles should be developed to ensure consistent application across RAGS.
- SESSF reports produced by AFMA appear suitable with a suggestion to include spatial effort to inform the ISMP coverage, where effort is occurring for ISMP targets and effort creep.

Action item 13 – 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.

Action item 14 – 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.

Action item 15 – 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.

Agenda item 10: MYTAC data and summary review

Purpose of the agenda item:

For SESSFRAG to note the outcomes of the review undertaken by the Multi-year Total Allowable Catch (MYTAC) Working Group and consider the recommendations for species identified for additional review.

SESSFRAG noted:

Outcomes following the MYTAC working group

- Maintain the RBCs for:
 - School Whiting;
 - Blue Grenadier;
 - Pink Ling, and;
 - Orange Roughy east.
- Defer RBC advice and assessment to relevant RAGS for:
 - Blue Warehou
 - Redfish
 - Jackass Morwong
 - John Dory
 - Gemfish (east)
 - Silver Trevally
 - Mirror Dory
 - Blue-eye Trevalla
 - Orange Roughy south, west, cascade, and Albany & Esperance.
 - Deepwater Shark east and west
- Seek advice from SESSFRAG for:
 - Silver Warehou due to low catches in the 2022-23 season. Seek advice on whether this is due to operational or non-operational reasons.
 - Oreo (mixed) due to a potential over-estimation of discards as an artefact of the strata used.
 - Deepwater Flathead proposal to separate the Danish seine fleet from the Otter trawl fleet in the 2023 Tier 1 assessment as a sensitivity.

SESSFRAG discussed and recommendation:

- Silver Warehou

- Both the east and west fleets show declining catches.
- SESSFRAG have previously flagged potential deterioration in spawning capacity.
- This stock is identified as a climate affected species, possibly through impacts on larvae.
- The below average recruitment is indicating the species is falling towards a non-recovery position due to non-operational reasons.
- Oreodory (mixed)
 - Flathead catches are distorting discard estimates of Oreos.
 - SESSFRAG recommended that the approach to use previous years' estimates instead, be continued until the work of re-designing the strata can be completed.
- Deepwater Flathead
 - SESSFRAG recommended that GABRAG 1 in 2023 be presented with 1) the base case assessment including trawl only, and 2) a sensitivity with both trawl and Danish seine fleets.
- SESSFRAG recommended a full assessment be undertaken for Silver Warehou in 2024, rather than an 'update'. The work involved in this would be a trade off with only doing a Pink Ling assessment of the eastern stock in 2024 given that the western stock is currently under caught and at a higher relative biomass than in the east. SESSFRAG also support the Blue Grenadier assessment to be scheduled for 2025.

ACTION item 16 – AFMA to seek advice from SERAG 2023 as to the merits of a full assessment of Silver Warehou in 2024 and limiting the assessment of Pink Ling that year to the eastern stock only.

Agenda item 11: SESSF Data and ISMP plans

Purpose of the agenda item:

For SESSFRAG to provide advice on any changes required to the SESSF Data Plan 2021-23 or the 2023 ISMP Plan.

SESSFRAG discussed and recommended:

- Removing the collection of lengths and otoliths for Ribaldo from the SESSF data plan.
- The inclusion of tissue collection for close-kin analysis of Blue-eye Trevalla and Eastern Redfish to the SESSF data plan.
- Removal of the Blue Grenadier biological sampling targets for the GAB in the SESSF Data Plan.
- That ageing be continued for those species that are now considered a 'trigger species'.
- That the FAS seek advice from SERAG 2023 regarding the addition of Orange Roughy Cascade otoliths into the ageing plan.
- That AFMA liaise with Beth Fulton regarding the collection of samples of key SESSF species off the east coast Tasmania and NSW in response to projected heatwaves over the next 12 to 18 months.

ACTION item 17 – 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.

ACTION item 18 – FAS seek advice from SERAG 2023 on the addition of Cascade Orange Roughy otolith samples to the ageing plan.

Agenda item 12: 2023 Stock assessment Q&A

Purpose of the agenda item:

For CSIRO to seek advice from SESSFRAG on upcoming stock assessments and provide an opportunity for members to raise any questions or concerns.

SESSFRAG discussed:

- How to incorporate climate drivers into assessments and that there are a number of upcoming workshops to consider how this might be achieved.
- How indices such as recruitment, natural mortality and environmental fluctuations could be used to test in CPUE standardisation to understand which climate drivers are impacting the stocks.
- The complexity in integrating climate factors into stock assessments and harvest strategies in a simplistic way was recognised. AFMA are developing a framework to identify if climate change is already accounted for in an assessment or what other mechanisms might exist to ensure that management is sufficiently precautionary. Upcoming workshops and discussions will work through these developmental stages.
- There is an FRDC project currently looking at potential updates, and prioritising species impacted by climate change and the effects on natural mortality and recruitment.

Agenda Item 13: 2024 Chairs' meeting dates

SESSFRAG agreed on the 9–11 April as a tentative date for the 2024 Chairs' meeting.

Close of meeting

The Chair thanked SESSFRAG members and attendees for their contribution and closed the meeting at 2:45 pm on Thursday 31 August.

Attachment A - Register of Interest

Participant	Organisation	Conflict of interest
Dr Cathy Dichmont	Cathy Dichmont Consulting	<p>Director of Cathy Dichmont Consulting.</p> <p>Chair of ComRAC (FRDC)</p> <p>Contracted by various state and Commonwealth agencies to undertake various reviews and consultancies not related to SESSF.</p> <p>No pecuniary interest in the SESSF.</p>
Mr Lance Lloyd	Lloyd Environmental	<p>GABRAG Chair</p> <p>Member of GABMAC</p> <p>Board Member, AwF – Aquaculture without Frontiers (Australia)</p> <p>Director; Lloyd Environmental Pty Ltd.</p> <p>Research Fellow; Federation University Australia</p> <p>No pecuniary interest.</p>
Dr Paul McShane	Global Marine Resource Management	<p>Chair of SERAG and a member of SEMAC and SESSFAG.</p> <p>No pecuniary interest in the SESSF.</p> <p>Principal of Global Marine Resource Management Pty Ltd.</p> <p>Adjunct Professor (Fisheries and Aquaculture) College of Science and Engineering, James Cook University</p>
Mr Sandy Morison	Morison Aquatic Sciences	<p>Director of Morison Aquatic Sciences</p> <p>Chair of SharkRAG</p> <p>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.</p> <p>No pecuniary or other interest in the SESSF.</p>
Dr Sarah Jennings	Independent economics consultant	<p>Adjunct Senior Researcher, TSBE</p> <p>Economics member of SERAG</p> <p>Economic member of SEMAC</p> <p>Member of AFMA EWG</p> <p>Independent economics consultant</p> <p>No pecuniary or other interest in the SESSF.</p>
Dr Beth Fulton	CSIRO	<p>Ecosystem and climate scientist, Portfolio Leader for Integrated Marine Management. Adjunct with the University of Tasmania (Deputy Director for the Centre of Marine Socioecology).</p> <p>Acquiring funding for research purposes</p>

Ms Sally Weekes	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mr Simon Boag	SETFIA (trawl) SSIA (sharks) SPFIA (SPF)	EO SETFIA (trawl) EO SSIA (sharks) EO SPFIA (SPF) Non-beneficiary Director of two fishing companies in the SSSF one of which is a significant quota owner. 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 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	<p>PECUNIARY INTEREST</p> <p>Director NMAC(SA) P/L</p> <p>ORGANISATION SUPPORT</p> <ul style="list-style-type: none"> • 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 <p>COMMITTEE MEMBERSHIP</p> <ul style="list-style-type: none"> • 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

		<ul style="list-style-type: none"> • CGG Gippsland MSS Scientific Advisory Committee – Chair • Australian Council of Prawn Fisheries - Director
Dr Paul Burch	CSIRO	<p>Employed by CSIRO, assessment scientist. CSIRO representative on the Fisheries Statistics and Information Working Group.</p> <p>CSIRO representative on the GAB Trawl Data Working Group.</p> <p>Acquiring funding for research purposes.</p>
Dr Pia Bessell-Browne	CSIRO	<p>CSIRO assessment scientist.</p> <p>Acquiring funding for research purposes.</p> <p>PI on FRDC project: Developing a harvest control rule to use in situations where depletion can no longer be calculated relative to unfished levels.</p>
Ms Franzis Althaus	CSIRO	<p>Employed by CSIRO, Assessment scientist. Acquiring funding for research purposes</p>
Dr Roy Deng	CSIRO	<p>Employed by CSIRO, Assessment scientist. Acquiring funding for research purposes</p>
Dr Toni Cannard	CSIRO	<p>Employed by CSIRO, Assessment scientist. Acquiring funding for research purposes</p>
Dr Miriana Sporic	CSIRO	<p>Assessment scientist.</p> <p>Acquiring funding for research purposes</p> <p>Project Leader CSIRO Ecological Risk Assessments</p>
Dr Robin Thomson	CSIRO	<p>Assessment scientist.</p> <p>Acquiring funding for research purposes</p> <p>PI on close kin project for school shark.</p> <p>PI on blue-eye trevalla close kin scoping project</p>
Dr Geoff Tuck	CSIRO	<p>Involved in Stock assessments.</p> <p>Interest in obtaining funding for future research.</p> <p>Principle investigator on the SESSF stock assessment project.</p> <p>Project leader of the CSIRO Marine Visual Technologies project team on automated catch detection and species identification</p>
Ms Caroline Sutton	CSIRO	<p>Employed by CSIRO, Assessment scientist. Acquiring funding for research purposes</p>
Dr Nick Hill	CSIRO	<p>Employed by CSIRO, Assessment scientist. Acquiring funding for research purposes</p>
Dr Ian Knuckey	Fishwell Consulting	<p>Positions:</p> <p>Director – Fishwell Consulting Pty Ltd</p> <p>Director – Olrac Australia (Electronic logbooks)</p> <p>Chair – Northern Prawn Fishery Resource Assessment Group</p>

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 – Victorian Marine and Coastal Council

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

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

Dr Kyne Krusic-Golub

Fish Ageing Services

Director – Fish Ageing Services Pty Ltd

No pecuniary or financial interest in the fishery other than securing funds for potential projects related to age and growth studies.

Current Related Projects

AFMA R2019/0840 – Undertake fish ageing for the SESSF to support stock assessments, 2020 -2023.

Project collaborator on FRDC 2019-030. An updated understanding of eastern school whiting stock structure and

		improved stock assessment for cross-jurisdictional management
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
Mr James Woodhams	ABARES	Employed by ABARES - Section Manager. No pecuniary interest in the fishery. ABARES has a minor role (and a small amount of project funds) in '2019-036: Implementation of dynamic reference points and harvest strategies to account for environmentally driven changes in productivity in Australian fisheries. Any future interests in projects or research will be declared as required. Non-financial roles on steering committees for the Multi species harvest strategy project led by CSIRO, reviewing biological parameters project led by CSIRO and Alternate indicators for the SESSF (working group reporting to SESSFrag).
Dr Steph Brodie	CSIRO	Employed by CSIRO. Acquiring funding for research purposes
Mr Dan Corrie	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Dr Mark Grubert	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Dr Lara Ainley	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mr Jack Sullivan	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Dr Alice McDonald	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Ms Michelle Henriksen	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Ms Anna Willock	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mr Tamre Sarhan	AFMA	Employed by AFMA, no interest, pecuniary or otherwise
Mr Henry Oak	AFMA	Employed by AFMA, no interest, pecuniary or otherwise

Attachment B- Action Items

Completed/Redundant		Underway	Advice required	Not yet started	
No.	Ag. Item / Meeting Date	Action Item	Agency / Person	Timeframe	Progress as of SESSFRAG Data meeting 2023
2	6 SESSFRAG Data 2022	CSIRO to present the outputs of the indicator species candidate harvest strategy (part of the MSHS project) at the 2023 SESSFRAG Chair's meeting to inform advice around key species for CKMR scoping.	CSIRO	SESSFRAG Chair's meeting 2023	<u>Completed</u> Considered under agenda item 7 at the SESSFRAG Chair's meeting 2023.
3	6 SESSFRAG Data 2022	AFMA to provide the list of rebuilding species for SESSFRAG before the April 2023 Chairs meeting to support prioritization of species for CKMR.	AFMA	SESSFRAG Chair's meeting 2023	<u>Completed</u> Considered under agenda item 7 at the SESSFRAG Chair's meeting 2023.
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>Underway</u> To be considered at SERAG 1, 2023. Will be considered by SESSFRAG 2024 along with other species upon completion of the broader SESSF CKMR scoping project.
5	6 SESSFRAG Data 2022	SESSFRAG to provide advice on candidate species for a CKMR scoping project at the April Chair's meeting in 2023. This should take account of the outputs of the indicator species candidate harvest strategy.	CSIRO	SESSFRAG Chair's 2023	<u>Completed</u> Considered under agenda item 7 at the SESSFRAG Chair's meeting 2023.
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	<u>Underway</u> To be progressed through the SETFIA co-management agreement currently under development.
9	8 SESSFRAG	AFMA to consider engaging NSW DPI to collect biological samples at the Sydney Fish Market to supplement the	AFMA	As soon as possible	<u>Redundant</u> AFMA has increased observer sampling at

	Data 2022	ISMP program.			the Sydney Fish Market (SFM) in 2023 with seven trips undertaken this year. AFMA will sample from SFM as often as resources allow and does not consider it necessary to engage NSW Fisheries to supplement the ISMP program at this time.
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	<u>Underway</u> Advice on biological sampling targets for gummy shark and school shark will be sought from SharkRAG in 2023.
14	8 SESSFRAG Data 2022	FAS and AFMA to check whether school whiting length and age data were collected in port or on-board to understand the discrepancy in ages between 2020 and 2021.	AFMA & FAS	As soon as possible	<u>Advice required</u> School whiting were sampled both in port and on-board in 2020 and 2021. Length frequency totals for these years were 5,987 (84% port; 16% on-board) and 3,747 (50% port; 50% on-board), respectively. The greater proportion of on-board samples in 2021 is likely to have reduced the overall mean size that year. Otolith totals for 2020 and 2021 were 773 (78% port; 22% on board) and 653 (75% port; 25% on board), respectively. While the collection totals differed between these years, the proportions derived from port and on-board sampling were similar. However, the proportion of otoliths sampled from otter trawl caught fish declined between years (as suggested by members at the 2022 data meeting) from 42% in 2020 to 26% in 2021.

					Does the RAG require any further information on this item?
16	8 SESSFRAG Data 2022	AFMA to add the redfish tissue samples to the SESSF data plan to support future CKMR.	AFMA	As soon as possible	<u>Completed</u> AFMA has added the collection of redfish and tiger flathead tissue samples to the SESSF data plan. Sampling targets will be reviewed each year as the CKMR project progresses.
17	8 SESSFRAG Data 2022	AFMA to prioritise linking the SIDaC data to logbooks in the AFMA database as it is required for the 2023 gummy shark stock assessment.	AFMA	As soon as possible	<u>Completed</u> This was completed early 2023 and supplied as part of the CSIRO data dump. AFMA close to finishing an automated system to link the data. For 2023, will still need to use the old manual process of linking data. However, from late 2023 onwards data will be collected through e-Logs and a portal for the in-port aspect of the program allowing to linking to be automated.
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	<u>Underway</u> AFMA has investigated the discrepancies in logbook and CDR data for these four species/groups over the period 2018–2022 and will discuss these with CSIRO and the relevant RAGS in 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>Underway</u> To support TAC setting for Cascade orange roughy until a new assessment is undertaken, the RAG recommended AFMA to liaise with FAS to review the Orange roughy age composition data in the first instance for stock structuring purposes to

					establish if old fish are present. Subject to what the age data look like, AFMA/FAS to provide an overview of the fish/length/otolith-weight ratio to determine if there are different stocks aggregating on the Cascade plateau each year.
27	11 SESSFRAG Data 2020	AFMA to evaluate the benefits of undertaking another analysis of discard reporting for fisheries that have EM to determine if there are continuing improvements in reporting (as per the review that ABARES undertook).	AFMA	As soon as practicable	<u>Redundant/reworded</u> During the 2023 SESSFRAG Chairs' meeting, members agreed to revise the wording of this action to: <i>AFMA and CSIRO to review the recommendations from the ABARES congruence analysis of logbook and EM data and determine what additional work is required.</i> The reworded action item has been added to this table as action item 13 arising from the SESSFRAG Chairs' meeting 2023
28	12 SESSFRAG Data 2020	AFMA and CSIRO to liaise with the states regarding estimates of discards for SESSF quota species and consider establishing a discard and recreational fishing working group to consider a set of decision rules, in particular: a) whether to apply Commonwealth discard rates to state catches when Commonwealth and state gear types or management controls differ; b) how to estimate state discard rates and total catches where Commonwealth discard rates are not applied because of differences in gear type or management controls; and c) whether the approach used to determine recreational catch weights for shark species should be extended to other SESSF species as part of the 2021-	AFMA & CSIRO	As soon as practicable	<u>Advice required</u> AFMA suggests that this action item is removed given its age and because parts a) and b) are unlikely to be progressed until after the MSHS and associated data collection and monitoring programs are operationalised. AFMA is also proposing to change the frequency of discard estimation to every four years (for discussion at Agenda Item 9 - Transition to a new SESSF harvest strategy). AFMA will compile a running list of issues/tasks to revisit once the MSHS and associated programs are implemented.

		22 Data Services Contract.			
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 will revisit the existing wording on this item and will provide it to the SESSFRAG Chair for review.
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>Underway</u> AFMA is currently developing the reporting templates. This project has been put on hold due to resource constraints.
33	8 SESSFRAG Data 2021	Establish a process for reviewing stock assessments using blue grenadier as a case study	AFMA	As soon as practical	<u>Completed</u> An independent review of the blue grenadier assessment is included as priority project in the SESSF Annual Research Statement for 2024-25 and this project will be included in the ARC research call this year. The need to establish a process to review stock assessments is still captured in a similar action item from the SESSFRAG Chairs' meeting in 2021.
36	9 SESSFRAG Chairs' 2022	CSIRO team to seek feedback from MSC, ABARES and DAFF on the two methodologies identified for measuring risk under the discount factor project.	CSIRO	As soon as practicable	<u>Advice required</u> AFMA considers that this action item should be removed given the project has progressed and that ABARES have had the opportunity to comment on the discount factor project through various RAG meetings held in 2022. Does SESSFRAG agree?
37	4 SESSFRAG	AFMA to obtain and include in its database historic Blue Warehou industry collected data	AFMA	As soon as practicable	<u>Underway</u> AFMA has received historic Blue Warehou

	Chairs' 2019				data from Fishwell will archive it.
38	8 SESSFRAG Data 2020	The RAG to discuss the implications of the MSHS project on the ageing plan and the inclusion of non-quota species, such as leatherjackets, at the Chairs' 2021 meeting.	SESSFRAG	Chairs' meeting 2021	<u>Advice required</u> AFMA suggests removing this action item given that it is now three years old and ageing plans for all species will be reconsidered as the stock assessment schedule is updated and the MSHS is operationalised.
19	SERAG 1 October 2022	Dr Miriana Sporcic (CSIRO) to present two CPUE series to SESSFRAG data meeting in 2023, one including and one excluding catches from the Cascade Plateau so that SESSFRAG can advise which should be used for the 2023 Tier 4 for the blue-eye trevalla slope stock. Furthermore, CSIRO to create a third zone, 'Cascade Plateau', when presenting blue-eye trevalla catches in future data reports.	CSIRO	2023 SESSFRAG data meeting	<u>Underway</u> Two CPUE series for blue-eye trevalla (including and excluding Cascade Plateau) have been provided for consideration at the 2023 SESSFRAG data meeting.
1	1 SESSFRAG Chairs 2023	In relation to the SESSF History Document, AFMA to include the Upper-slope Dogfish Management Strategy in 2012. The implementation of this may have prompted improved reporting of species in the Deepwater shark's quota basket despite the strategy not applying to the quota basket species or any changes being made to the species included in the quota basket.	AFMA	As soon as possible	<u>Completed</u> AFMA has updated the SESSF History document with details on the Upper-slope Dogfish Management Strategy.
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 Chair's meeting 2024	<u>Underway</u> Work on describing the potential impacts of climate change on the SESSF continues and Dr Fulton will provide a document for consideration at the SESSFRAG Chairs' meeting in 2024.
3	3	AFMA to summarise the potential impacts of the	AFMA	SESSFRAG	<u>Underway</u>

	SESSFRAG Chairs 2023	structural adjustment on the economics of the SESSF and what this means in terms of research and data collection for the next Chair's meeting in 2024. Previous indicators produced by the Economic Working Group should also be considered.		Chair's meeting 2024	AFMA will provide an overview of the fishery economics, including impacts of closures, structural adjustments, and competing industries at the SESSFRAG Chair's meeting in 2024"
4	4 SESSFRAG Chairs 2023	CSIRO to consult with Jason Cope (SS-DL developer) and prepare a paper for the August 2023 SESSFRAG Data Meeting that describes the age-based assessments that are implemented in SS-DL, particularly in relation to how it differs from the old Tier 3 (catch curve) assessments. The paper should include any simulation / MSE testing of these methods. If age-based assessments implemented in SS-DL are the equivalent of Catch Curve based assessments, then it would be likely that SESSFRAG would recommend this approach is not pursued as there is a high probability it would fail.	CSIRO	SESSFRAG Data Meeting 2023	<u>Underway</u> Paper to be presented at Agenda Item 6 at the SESSFRAG data meeting 2023.
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 until the RAG has decided on the assessment methodology to use for each stock for the 2023 TAC setting round.	CSIRO	For SERAG 2023	<u>Underway</u> For consideration by SERAG in 2023.
6	7 SESSFRAG Chairs 2023	SESSFRAG Chair and AFMA to review the membership of the CKMR Steering Committee to ensure completeness.	AFMA and SESSFRAG Chair	As soon as possible	<u>Completed</u> AFMA and the SESSFRAG Chair have reviewed the membership of the CKMR Steering Committee and consider it appropriate.
7	7 SESSFRAG	In relation to the number of sample sizes required to support a CKMR assessment for each species, Dr Robin Thomson to prepare two sets of plots per species for the	CSIRO	SESSFRAG Data meeting 2023	<u>Underway</u> To be considered under agenda item 7 of the

	Chairs 2023	CKMR study: a) proportion catch-at-age and CV plots against year as before although, smaller sample sizes may be needed; b) a plot of CV against sample size (in place of the table of sample sizes which means a CV does not need to be selected) but ensure that these plots cover the range of CVs from 0.12 to 0.25.			SESSFRAG data meeting 2023.
8	8 SESSFRAG Chairs 2023	Dr Miriana Sporcic and AFMA to investigate the reasons for discrepancies in the catch figures from the closed areas presented in the preliminary CPUE work presented by Dr Sporcic at the SESSFRAG Chairs meeting in April 2023 and those provided in the letter from the AFMA Commission to industry regarding the implementation of the closures.	CSIRO & AFMA	SESSFRAG Chair's meeting 2024	<p><u>Completed</u></p> <p>The analyses of the potential impacts of the five spatial closures in the CTS presented to the AFMA Commission was undertaken by ABARES using all catch records from this sector east of 147°E over the period 2019–2021.</p> <p>ABARES identified three classes of trawl shots relevant to each closure: 1) those that started and ended within the closure; 2) those that started outside the closure and ended inside; and 3) those that started inside the closure and ended outside.</p> <p>ABARES then applied a weighting to the catch of each species in trawl shot classes 2 and 3 using the length of the shot within the closure as a proportion of total shot length.</p> <p>AFMA requested that Dr Miriana Sporcic (CSIRO) provide an overview of catch and catch per unit effort statistics for the same closures at the SESSFRAG Chairs' meeting in April 2022, using data from 2018–2022.</p> <p>The data provided to Dr Sporcic by AFMA only contained trawl shots that ended in each closure, thereby constraining the analyses to shot classes 1 and 2.</p>

					<p>This is the reason why some of the information presented by Dr Sporcic was different to that produced by ABARES and used by the AFMA Commission.</p> <p>AFMA will ensure that future analyses of this nature include data from all shot classes, be they fully or partially covered by a closure.</p>
9	12 SESSFRAG Chairs 2023	Refer the research project “Development of alternative survey methodologies to collect biological and environmental data from the Great Australian Bight Trawl Sector to inform future assessments” for AFMA and GABIA to report to GABRAG for clarification on what is intended for this project in terms of both its title and objectives.	AFMA & GABIA	GABRAG 2023	<p><u>Underway</u></p> <p>Research priorities for the GAB trawl sector will be discussed during the GABIA AGM on 5 September 2023 and again at GABRAG 1 on 17–18 October 2023. This will include consideration of issues identified in the recent Marine Stewardship Council certification report for the fishery (covering Bight Redfish, Deepwater Flathead and Gummy Shark).</p>
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	<p><u>Underway</u></p> <p>To be considered under agenda item 11 of the SESSFRAG data meeting 2023.</p>
11	12 SESSFRAG Chairs 2023	AFMA to provide the TEP interaction port/data that prepared annually for the Wildlife Trade Office (WTO) in the Department, for the SESSFRAG.	AFMA	As soon as possible	<p><u>Completed</u></p> <p>AFMA has compiled the 2022 TEPs interaction data for the SESSF (from the WTO reports) and provided it to SESSFRAG as an attachment to agenda item 11.</p>
12	12 SESSFRAG	AFMA to liaise with Fish Ageing Services (FAS) to review Orange roughy otolith weight to fish length ratios to	AFMA & FAS	As soon as possible	<p><u>Underway</u></p> <p>Otolith weight ratios will be discussed at</p>

	Chairs 2023	determine if there are multiple stocks in the Cascade and GAB.			agenda item 3 of the 2023 SESSFRAG 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	<u>Not yet started</u> This action item will be progressed through SharkRAG when resources allow.

Attachment C – Summary of action items arising from SESSFRAG Data meeting August 2023

Action Item	Agenda Item	Recommendations
1	3	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.
2	3	AFMA to liaise with SSIA/SETFIA regarding the adoption of the AFMA electronic observer data collection system.
3	3	AFMA to include the GABIA crew-based data collection summaries in the ISMP annual report.
4	3	SSIA to include a column for data collection ‘target’ to allow for a comparison with total ‘achieved’, separated by length frequency and otoliths.
5	3	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.
6	3	AFMA to remove the collection of Ribaldo lengths from the data plan and communicate the revised plan to the relevant data collection teams.
7	3	Fishwell, FAS and CSIRO to collaborate and identify catch locations/zones for old GAB orange roughy samples.
8	3	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.
9	4	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.
10	7	CSIRO to investigate age and length data to see if it is informative of the status of the eastern Orange Roughy stock.

11	7	CSIRO to present a scope of the proposed simulation to both SERAG and GABRAG in 2023.
12	8	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.
13	9	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.
14	9	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.
15	9	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.
16	10	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.
17	11	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.
18	11	FAS seek advice from SERAG 2023 on the addition of cascade Orange Roughy otolith samples to the ageing plan.
19	11	<p>Endorsed the changes made on the SESSF and ISMP data plans and recommended:</p> <ul style="list-style-type: none"> • AFMA to remove length data for Ribaldo from the SESSF Data Plan. • Collect close kin for blue eye and redfish from the SESSF Data plan. • Add additional cascade Orange Roughy otolith samples to the FAS ageing plan.