Australian Government
Australian Fisheries Management Authority

SESS Fishery South East Resource Assessment Group (SERAG) Meeting #1 October 2016

11 – 13 October 2016

CSIRO, Hobart

Meeting Minutes

Chair: Mr Sandy Morison

Attendance

Name	Membership (type i.e. chair etc.)
Members	
Mr Sandy Morison	Chair
Dr Brigid Kerrigan	AFMA member
Dr Geoff Tuck	Scientific member, CSIRO
Mr Andrew Penney	Scientific member, Pisces Australis
Dr Rik Buckworth	Scientific member
Dr Sarah Jennings	Scientific (economics) member
Mr John Jarvis	Industry member
Mr Simon Boag	Industry member
Mr Ross Winstanley	Recreational member
Mr Ross Bromley	Executive Officer - AFMA
Apologies	
Dr Simon Nicol	Scientific member
Invited participant	
Mr George Day	Senior Manager, AFMA
Dr Ian Knuckey	Fisheries consultant, Fishwell Consulting
Mr Andy Moore	Invited participant, ABARES
Mr Tom Bibby	Invited participant, industry
Observers	
Dr Judy Upston	Assessment scientist, CSIRO
Dr Jemery Day	Assessment scientist, CSIRO
Dr Robin Thomson	Assessment scientist, CSIRO
Dr Malcolm Haddon	Assessment scientist, CSIRO
Dr Rich Little	Assessment scientist, CSIRO
Dr Miriana Sporcic	Assessment scientist, CSIRO
Dr Karina Hall	Assessment scientist, NSW Fisheries

DAY 1, Tuesday 11 October

1. Preliminary

1.1 Welcome, introduction and apologies

1. The Chair opened the meeting and welcomed members and other participants at 13:20, Tuesday 11 October 2016.
2. The RAG accepted an apology from Dr Simon Nicol and noted that Mr Andy Moore from ABARES is attending this meeting in his stead.
3. The Chair explained that the South East Resource Assessment Group (SERAG) was formed to replace Slope and Shelf Resource Assessment Groups (RAGs). The Chair acknowledged and thanked members of Slope and ShelfRAG and noted contributions by members of these RAGs who are not on SERAG. In particular the work of Dr Ian Knuckey, Mr Les Scott and Mr Tony Lavalle was recognised.

1.2 Declarations of interest

4. The RAG followed the conflict of interest declarations as outlined in the revised Fisheries Administration Paper 12 (FAP12). A list of the full conflicts of interest declarations made by SERAG members and other participants for the meeting is provided in Attachment 4.
5. Messrs Boag, Jarvis, Winstanley and Bibby left the room in turn while the RAG considered their declared conflict of interests. The RAG agreed that Messrs Boag, Jarvis, Winstanley and Bibby have expertise in the fishery that warranted them being allowed to participate in the meeting, however they may be asked to leave the room when recommended biological catches (RBC's) are being decided. The RAG noted that any RAG member can bring any perceived conflict to the Chair's notice and that the issue can be dealt with at the time on a case by case basis.
6. The Chair drew the RAG's attention to Fisheries Administration Papers 7 and 12 and Fisheries Management Paper 12. The Chair pointed out the confidential nature of some of the data presented at SERAG and informed all those present that this information must not be disseminated without explicit approval from AFMA and the Chair.
7. Information from the RAG must not be used to give advantage to members when trading quota. AFMA has monitored quota trading in the past and although it has not found any evidence of insider quota trading, trades will continue to be monitored.

1.3 Adoption of agenda

8. The RAG made a number of amendments to the agenda:
    - Defer item 12 until the November SERAG meeting.
    - Note that the observer report at agenda item 2.4 is the same as that circulated at the Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group (SESSFRAG) meeting and a copy will be sent with the minutes of this meeting.

9. The final agenda is at Attachment 1.

1.4 Action items from SlopeRAG 2015

10. RAG members reported on outcomes arising from action items from the SlopeRAG and ShelfRAG 2015. A list of outcomes is provided in Attachment 2.
11. Noting the outcomes from the Markov chain Monte Carlo (MCMC) analysis undertaken in 2014 for the Eastern Zone Orange Roughy stock, SESSFRAG was asked to provide advice on how best to use the results from this analysis. Notably, whether it is best to use the RBC advice from the MPD (maximum likelihood estimate) or the RBC from the MCMC. SESSFRAG referred the issue back to the individual RAGs to provide advice on a case by case basis (see agenda item 4).

2. General updates

2.1 Managers' report

12. Dr Kerrigan (AFMA Trawl Manager) gave a report on activities concerning the Commonwealth Trawl Sector for the last 12 months:
    - Total Allowable Catches (TACs) of most species were under caught. TACs of five species were more than 90 per cent caught; flathead, gummy shark, ocean perch, orange roughy (east) and school whiting
    - An orange roughy AOS was successfully completed in the eastern zone.
    - SETFIA and industry have successfully developed an arrangement to voluntarily constrain catches of eastern pink ling to within the nominal eastern TAC. Consequently there are no legislated trip limits currently in force. AFMA and SETFIA monitor catches on a weekly basis.
    - The redfish rebuilding strategy was finalised this year. SERAG will be required to report on the progress against the objectives of the redfish, eastern gemfish, orange roughy and blue warehou rebuilding strategies at the November meeting.
    - A number of research projects are scheduled for next year including: investigation into non-recovering stocks; under caught TACs (a workshop is planned for 20 October 2016); and how Commonwealth fisheries management can adapt to environmental changes.

2.2 AFMA Commission's comments on 2016-17 TACs

13. Mr Day passed on the AFMA Commission's comments. The Commission:
    - appreciates the RAG and MAC work in developing their advice, especially Dr Haddon's work on the blue eye trevalla CPUE standardization
    - gratefully noted the RAG's work on providing advice using low recruitment scenarios.
14. Mr Day informed the RAG that the SESSF species summaries will be completed at the next SERAG meeting and these are the documents that provide RAG advice to the Commission.

2.3 ABARES Fishery Status Report 2016

15. Mr Moore gave a brief summary of the 2016 ABARES Fishery Status Reports:

    - The status of blue eye trevalla has been changed from 'uncertain' with respect to fishing mortality to 'not subject to overfishing' (yellow-green to green-green). The primary indicators for status determination for this stock are the information provided by the 2015 Tier 4 assessment and recent catch. The RBC from the 2015 Tier 4 assessment is conservative because it does not take into account the impact of closures or the influence of Orcas on catch rates. The stock is classified as 'not overfished' because the index of abundance is between the limit and the target reference points.

      The status of pink ling has been changed from 'uncertain' with respect to fishing mortality to 'not subject to overfishing' (yellow-green to green-green). The 2015 assessment indicated that the biomass of the western pink ling stock is around 72 per cent of the unfished biomass and stable, and that the biomass of the eastern pink ling stock is around 30 per cent of the unfished biomass and increasing. The 2015 assessment indicated that the eastern pink ling stock had a very low (1 per cent) probability of being below the limit reference point in 2015. On this basis, both stocks would be considered as not overfished, and so the combined stock of pink ling is classified as not overfished.

16. The RAG queried the overfished biomass status of orange roughy west and south, pointing out that because there has been very limited fishing in these zones it would not be unreasonable to expect similar recovery in the stocks as seen in the eastern zone.

2.4 ISMP Observer report

17. The Executive Officer informed the RAG that the ISMP report tabled at SESSFRAG would be sent to all SERAG members in lieu of the report being tabled at this meeting.

18. SESSFRAG recommended updating the AFMA ISMP sea-day targets using the average fishing effort over the least 3-5 years instead of the (Bergh *et al* 2009) targets. SERAG noted that this was a recommendation from SlopeRAG last year and average effort had been used in planning ISMP data collection this year.

2.5 ISMP Discard report

19. Dr Upston referred the RAG to the circulated draft ISMP discard estimation report (Integrated Scientific Monitoring Program for the Southern and Eastern Scalefish and Shark Fishery – Discard estimation 2015 (DATA summary) DRAFT). Data is displayed by ISMP strata and type.

20. The RAG noted the following:

    - Table 1 compares the number of shots and sea days specified by the ISMP redesign (Bergh *et al*, 2009) and AFMA targets to measure if there are any issues with the current sampling and targets. It was recognized that ISMP sampling in the gillnet, hook and trap sector has been reduced due to the implementation of electronic monitoring in the fishery.

- The 'unknown' strata category includes observer data from NSW however these data are not included in estimates of discards. The RAG recommended that these data be removed from the database.

21. Dr Upston referred the RAG to her previously circulated paper.
22. Noting that the flathead assessment was due to be discussed at this meeting, the RAG reviewed the flathead discard estimates. The RAG was of the opinion that the estimate of flathead discards and rate were consistent with previous years and especially noted that the CV for the estimate was low (1.2 %).
23. The RAG noticed that the discard per shot columns were incorrectly labelled as tonnes in the paper and asked Dr Upston to amend this to kilograms.
24. Dr Upston informed the RAG that discards of silver trevally and gemfish west had increased by more than 50 per cent and John dory east, mirror dory east and jackass morwong east had declined.
25. Dr Upston informed the RAG that CSIRO has been working on developing an agreed catch history. The RAG urged some care is required in changing historical data due to there being past RAG decisions "embedded" in the data. Dr Upston undertook to document her processes in choosing the data and identifying these data from the older catch history that may include imbedded decisions.
26. The RAG recommended the data be displayed on a species by species basis as well as the displayed estimates of discard tonnages, the observed shots and the rank catches by strata.

3. Mirror dory – Tier 4 assessment

27. Mr Jarvis informed the RAG that catches of mirror dory had been quite good over the last year. He explained that catches had been especially good in northern NSW. Industry also reported a change in the depth strata from 2014 to 2015.
28. Dr Haddon presented the Tier 4 mirror dory assessment.

Mirror dory east

29. The RAG considered the mirror dory data and noted:
    - most mirror dory were caught in zone 10
    - the last CPUE point, not including discards, showed a slight increase but the trend is still declining. When discards are included, the CPUE declined.
30. The RAG discussed the implications of including or excluding discards in the catch rate. If discards are included, CPUE may be biased high because if 100 per cent of the catch is discarded then the shot (effort) is not included in the analysis. If discards are excluded from the catch rate the CPUE may be biased low as it does not include this source of mortality.
31. The RAG reviewed the 2015 discard estimates for mirror dory and was concerned that the estimate of less than 1 per cent was very low when compared to previous years. None the less

the RAG could not find any reason for not using the ISMP discard estimate. The RAG was of the view that the impact of small discards on the catch rate is low. The RAG noted that in 2015 ShelfRAG included discards in the catch rate used for the Tier 4 assessment and agreed that as the discards of mirror dory are variable and could account for a large part of the overall fishing mortality that it would continue to use discards in the catch rate series.

Table 1 RBC calculations for mirror dory east.

Ref_Year	**1986 - 1995**
CE Targ	1.1329
CE Lim	0.472
CE Recent	0.8236
Wt Discard	21.121
Scaling	0.5319
C_{targ}	327.739
RBC	**198.278**

Mirror dory west

32. Discards are low in the western part of the fishery (< 0.5 t) and are therefore not included in the RBC calculations.

Table 2 RBC calculations for mirror dory west

Ref_Year	**1996 - 2005**
CE Targ	0.9776
CE Lim	0.4074
CE Recent	0.7240
Wt Discard	2.955
Scaling	0.5551
C_{targ}	197.647
RBC	**104.171**

33. Noting the changing trends in catch rates, which are used as an index of abundance in a Tier 4 assessment, the RAG did not recommend a MYTAC for mirror dory.

Table 3 Mirror dory RBC recommendations

Species	**Assessment**	**RBC (t)**	**MYTAC**	**Discount factor**	**Under/over catch**
Mirror dory	Tier 4	East – 198	No	15%	Overcatch – 10%

		West – 104 Total - 302			Undercatch – 10%

34. The Chair adjourned the meeting at 17:15.

DAY 2, Wednesday 12 October 2016

35. Dr Fay Helidoniotis from ABARES and Dr Ian Knuckey joined the meeting on day two. Each of them declared their conflicts of interest (Attachment 4).

36. The RAG discussed the process for calculating TACs from RBCs and confirmed that a four year weighted average is currently used for calculating discards.

37. The RAG considered if the same weighting should be used when estimating State catch and discards for calculating TACs. The RAG requested Dr Thomson to investigate if previous State catches can be a predictor of the next years catch/discards. The RAG recommended continuing to assume the same discard rate for State catches as Commonwealth catches unless other information is available.

Action item 1 – Dr Thomson – November SERAG Meeting

Dr Thomson to investigate if state catches used in the TAC calculations can be better estimated using a weighted average of previous years catch data.

4. Use of MCMC in stock assessments

4.1 Discussion of key questions and issues

38. Mr Penney presented a summary of the paper he and Dr Neil Klaer wrote on 'Use of Markov chain Monte Carlo analysis in fisheries stock assessments'.

39. Summary of presentation:

    Markov chain Monte Carlo analyses (MCMC's) are used as a final step in many stock assessments, e.g. in the USA, New Zealand and for international RFMOs. An MCMC combines Monte Carlo sampling (a statistical resampling technique, used to approximate complex probability distributions in situations where this cannot be done mathematically) with Markov chain analysis (a statistically random walk on a graph, used to determine where the next random sample should be taken on a multi-dimensional probability surface by a Monte Carlo process).

40. There are two main sources of uncertainty in stock assessments:

    i. Model structural uncertainty resulting from the necessarily simplified assumptions in an assessment model relative to the complexity of the real-world fish population. This is explored using sensitivity tests using a number of differently specified models or model variants.

    ii. Probability distributions around point estimates given by the final chosen model/s. This is explored using statistical analysis of confidence intervals around these point

estimates, or using MCMC analysis of probability distributions around these point estimates.

41. MCMCs are mostly considered to be best practice, at least for age-structured integrated stock assessments.

42. MCMCs are used to evaluate the probability distribution of results. These can however take days or weeks to run and acceptably similar results may be gained from a more rapid Delta method. All of these methods can underestimate real uncertainty, and plausibility-weighted sensitivity tests should still be used as a first step to explore model structural uncertainty.

43. There have been developments to integrate results across multiple model specifications, however in the SESSF a single base case is chosen for input to the harvest control rule (HCR). MSE testing has adequately evaluated uncertainty and risk, and this was taken into account when the Tier 1 harvest control rules were developed.

44. A single point estimate of current biomass is required for input into the decision rule, but uncertainty around this estimate is not taken into consideration by the HCR. If an MCMC is to be run, the candidate model/s need to be decided upon before the final assessments are run. Scheduling MCMCs is the key issue around their use, as they can require so much time to complete. The run time of the tests dictates that they cannot be periodically re-run throughout the normal SESSF stock assessment review meeting. This necessitates the need to have the MCMC complete when the draft final assessment report is tabled for discussion at the assessment meeting. This also necessitates that the sensitivity tests are completed and evaluated at a previous meeting, and that the final base case is agreed and will not be changed. If the MCMC analysis fails to stabilise, or if the model specifications are changed during the assessment review meeting, problems with the analysis will arise and more RAG meetings may be required.

When should/shouldn't you use an MCMC?

45. MSE testing is designed to ensure that decision rules keep the stock away from the limit, and near the target. Management moves away from using the decision rule when the stock is considered to be below the limit and a rebuilding plan needs to be designed. The default position would be to use the SESSF Harvest Control Rule to estimate the RBC, and not to use an MCMC analysis.

46. You would not conduct an MCMC analysis when:

    - management advice and RBC recommendations are being generated using an MSE tested harvest control rule
    - the current best estimate of biomass is above B_{lim}, with a probability >90% (using the delta method evaluation)
    - the stock dynamics (e.g. recruitment, S-R relationship) appear to be within the ranges tested during management strategy evaluation testing and development of the decision rule.

47. You would conduct an MCMC analysis when:

- it has been decided to move away from providing management advice using the harvest control rule, and to provide risk-based management advice in some alternative way, and preliminary explorations show that an MCMC should be feasible; or
- the stock data has a >10% probability of being below B_{lim}, (e.g. using the delta method evaluation); or
- the stock dynamics (e.g. recruitment, S-R relationship) appear to have moved beyond the ranges tested during MSE testing and the development of the decision rule, such that biomass is not being maintained at levels indicated in projections under the harvest control rule.

48. SERAG thanked Mr Penney and Dr Klaer for their work and accepted the recommendations in the report.

5. Tier 1 assessment – tiger flathead

49. In considering the available data for flathead, the RAG queried the different size composition from the fishery independent survey (FIS) when compared with that from normal industry operations. Dr Knuckey informed the RAG that he thought the reasons for the disparity could be:
    - the FIS is temporally fixed (restricted to winter)
    - the FIS uses standardized trawl nets that have a different selectivity to nets used commercially by industry
    - the areas sampled by the FIS are fixed and defined by the survey design; although they occur within the fishery area, commercial trawls are targeted in areas that are going to optimise catch.
50. Dr Day presented the Tier 1 tiger flathead assessment and a bridging analysis comparing the new draft base case with the accepted 2013 base case assessment.
51. Dr Day explained that:
    - updating the CPUE to 2015 reduces recent recruitment and the biomass estimate decreases
    - updating the length and age data further reduces the biomass estimate
    - changing the final year for which recruitments are estimated from 2009 to 2012 increases biomass estimates
    - retuning using the latest protocols including Francis weighting on lengths and ages increases biomass estimates
    - inclusion of new data resulted in a smaller estimate for recruitment in 2006
    - three new years of estimated recruitment (2007, 2008, 2009) are all above average, with a particularly strong recruitment estimated in 2008
    - recent recruitments are well estimated and supported by recent age data

- some caution is required when setting TACs as it is possible for future data to result in modifications to estimates of recent recruitment events.

52. The same assumptions as the 2013 assessment were used except:
    - both onboard and port length frequencies are included
    - length frequencies are weighted by shot/trip
    - tuning procedure was updated and now uses Francis weighting
    - recruitment is now estimated from 1915 to 2012 (was only up to 2009 in the previous model)
    - 2010 – 2012 recruitment estimates are all above average
    - FIS fleet is split and FIS length data are included.
53. The RAG queried why the FIS index is split into two separate fleets (east and Tasmania) in the assessment. Dr Day explained that a similar decision was made in the jackass morwong and silver warehou assessments and this is done to reflect different fleet selectivity. Dr Knuckey explained that this may have been done in the case of jackass morwong because there are separate east and west stocks and that different types of nets are used in the east and west FIS. The RAG considered the different selectivity of the trawl gear and decided that the different selectivities warranted the Fishery Independent Survey data being given their own selectivity in the assessment.
54. The RAG noted that tuning of the model using the Francis method increased the estimates of recruitment and that actual recent recruitments may be overestimated. The RAG debated dropping the last three years of recruitment estimates to remove any possible effects of over estimation but decided that as fish are not recruited into the fishery until 3+ there would be no practical effect in doing so. However as MYTACs generally run for at least three years, overestimation of recruitment may have implications for MYTACs.
55. The RAG considered the specifications for the flathead base case and made the following recommendations:
    - The RAG noticed that the HCR was incorrect in the assessment and should be amended to 25:35:40. The RAG commented that although the MEY estimate for this stock is at B_{36} they are happy, for biological reasons, to make RBC recommendations using B40 as the target biomass. The RAG recommended that consideration of using a B_{36} target could be discussed at later RAG meetings.
    - FIS:
        - Give east and west FIS fleets their own selectivity.
        - Keep LF and abundance indices as one fleet.
    - Run the same sensitivities as were run for the 2013 base case, omitting the following sensitivities:
        - Set age and length weighting to 1 rather than 0.1.
        - Derive the RBC using the 20:35:48 harvest control rule.

- Include the summer fishery independent survey (FIS) abundance index.
- Estimate recruitment only until 2007 (exclude the 2008 and 2009 recruitment estimates).

56. The RAG recommended changing the sensitivity test of M to + or – 20 per cent of the M used in the model.

57. The RAG deferred any discussions on MYTAC recommendations until the next SERAG meeting. Dr Day undertook to run one, three and five year projections from the base case, and will present these at the next meeting. The RAG also undertook to develop flathead breakout rules at the next meeting.

7. Review of Tier 3 and 4 species breakouts and RAG recommendations

Silver warehou

58. Following the last silver warehou assessment in 2015 Dr Day modified the Stock Synthesis code to produce forward estimates of CPUE under average, poor and very poor recruitment scenarios. The observed silver warehou CPUE broke out below the predicted CPUE in all three scenarios. SESSFRAG reviewed this information at its July meeting and expressed no concerns with the breakout due to a scheduled reduction in next year's TAC to around 600 t.

59. SERAG commented that as the modelled poor recruitment scenario takes some time (> three years) to enter the fishery the recruitment change in the model has not yet had time to flow into the fishery, and any meaningful change in the comparison between predicted and observed CPUE may not be seen for some time.

60. The RAG noted that Dr Andre Punt has written some code that now allows the RBC to be calculated under low recruitments scenarios rather than having to model constant catch as previously done.

Alfonsino

61. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering the current level of catch (0 t).

John dory

62. The RAG could not determine if John dory had triggered the first breakout rule:
    - the catch rate for last year is outside the 95% confidence interval of the average standardised catch rate since 2007 inclusive

63. The RAG was not concerned due to the TAC only being half caught and recommended developing new breakout rules for John dory.

Deep water shark – east and west

64. The RAG had no concerns with the sustainability of these stocks. The RAG advised that there was low risk in extending the RBCs for one year after considering CPUE and current level of catch.

Ocean perch

65. There are no breakout rules for ocean perch. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering CPUE and current level of catch.

Oreo basket

66. The RAG noted that the oreo (basket) breakout rule (more than 70 per cent of TAC caught) had been triggered. The RAG thought this was understandable due to an increase in fishing effort in the deeper water. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering CPUE and current level of catch.

Smooth oreodory – Cascade Plateau

67. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering the current level of catch (0 t).

Smooth oreodory – non Cascade Plateau

68. SERAG advised that this breakout rule needs reviewing following the increase of TAC to 90 t. SERAG noted that SESSFRAG suggested a breakout rule that triggers once 70 per cent of the TAC is caught. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering CPUE and current level of catch.

Ribaldo

69. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering CPUE and current level of catch.

Royal red prawns

70. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering CPUE and current level of catch.

Silver trevally

71. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC after considering CPUE and current level of catch.

Blue grenadier

72. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering CPUE and current level of catch.

School whiting

73. The RAG had no concerns with the sustainability of this stock. The RAG advised that there was low risk in extending the RBC for one year after considering CPUE and current level of catch.

Summary of TACs and rollover recommendations

74. Although the RAG endorsed proposals to accept extensions of MYTAC/RBCs the RAG reiterated its concerns that MYTAC/RBCs had not been MSE tested.

75. SERAG recommended that the SESSF breakout rules for all species are reviewed over the next 12 months.

8. School whiting

76. Dr Day provided the RAG with an update on the proposed 2017 school whiting assessment:

- Although this species is caught from northern NSW to eastern Victoria most of the length and age data, catch rate and CPUE data come from the Lakes Entrance Danish seine fleet and may not be representative of the whole stock.
- Genetic evidence of stock structuring is weak, however the RAG is concerned that there may be some demographic structuring within the stock and that the Commonwealth data alone may not be sufficient for a good assessment.
- Dr Hall advised that although the data NSW Fisheries is of low spatial resolution (latitudinal bands), they have data since 2009 on catches per day. Misreporting of the species composition in whiting catches (school and stout whiting) north of Barrenjoey Point may however compromise the usefulness of these data.
- Dr Knuckey noted that about 800 t of the school whiting taken is off Lakes Entrance, 100t between Lakes Entrance and Barrenjoey Point and 800t north of Barrenjoey. The RAG/assessor must decide on how relevant these data series are and how they can be used in the assessment.
- Fish Ageing Services has done some re-ageing using sectioned, not whole, otoliths and has found that previously aged fish are older (2-3 years) than previously estimated.

77. SERAG recommended:

- Dr Day undertake an exploration of the current data to evaluate if an assessment is possible
- Dr Day to explore if there are any linkages between north and south. The RAG suggested a weight of evidence approach may be needed
- a report characterising the available data and proposed stock assessment structure be presented at the March 2017 SESSFRAG meeting.

Action item 2 – SESSFRAG March 2017

Dr Day to prepare a report characterising the available school whiting data and proposed stock assessment structure.

9. Gemfish – east

78. Dr Little gave the RAG a presentation on his work investigating the effects of updating the 2009 eastern gemfish stock assessment. Catch data were incorporated from 1968, state catches were included, and length-frequency data dating back to 1975 were used. The update included:
    - the estimation of the growth parameters within the assessment
    - the use of conditional age-at-length data
    - the addition of updated length-frequencies, catches and catch-rates to 2015
    - the inclusion of discards
    - allowance for ageing error.
79. Based on this update eastern gemfish biomass has been declining since 2010 and is probably driven by a series of lower than average recruitments. The RAG expressed some concerns with the catch rate not being reflective of abundance noting that gemfish east have been on an incidental TAC for a number of years and consequently operators have been avoiding or discarding them. The RAG suggested that the CPUE be reworked using discards to see if this changed CPUE trends and affected the likelihood of there being evidence of recovery. The RAG requested this rework be presented at the November SERAG meeting and the March 2017 SESSFRAG meeting.

Action item 3 – Dr Little – November SERAG meeting

Dr Little to complete work on eastern gemfish CPUE using discards to see if it changed trends affected the likelihood of there being evidence of recovery.

80. Dr Little suggested looking at spatial occurrence over time to see if there are any patterns that may inform abundance indices. He also suggested looking for any potential reasons that may support a case for a regime shift in eastern gemfish. He noted that IMOS may have data that could be useful in looking at environmental covariates and recruitment success.
81. The RAG noticed a discrepancy between the port length frequency and the age frequency i.e. the age frequency has smaller/younger fish than those sampled in the port. The RAG suggested that AFMA follow this up with Fish Ageing Services. The RAG also requested that AFMA investigate the small numbers of lengths reported off NSW in 2015.

Action item 4 – AFMA – November SERAG meeting

AFMA to check with Fish Ageing Services if there are any potential reasons for the difference between the port length frequency and age frequency of eastern gemfish.

Action Item 5 –AFMA – November SERAG meeting

AFMA to investigate the small numbers of eastern gemfish lengths reported off NSW in 2015

82. Andy Moore informed the RAG that the molecular DNA work he has completed looking at the stock structure of western gemfish showed a small effective population of eastern gemfish. Further work may show if these techniques are suitable for monitoring of effective population size.

10. Blue eye trevalla

10.1 Report on blue eye trevalla stock structure project

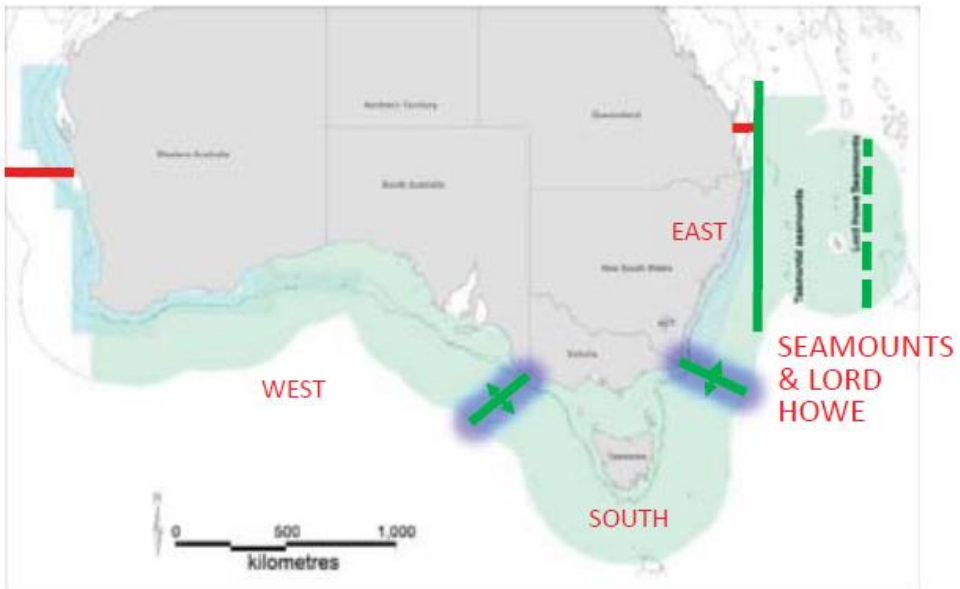
83. Alan Williams presented a report on "Determining Blue-eye Trevalla stock structure and improving methods for stock assessment". The report is in the final phase of approval by the Fisheries Research and Development Corporation and will be available shortly.

84. The project has four objectives:

- Define blue-eye trevalla subpopulation structure in Southern and SESSF and ECDF (NZ) using otolith elemental and stable isotopic chemistry.
- Evaluate the potential of other biological data (age, size frequency and maturation stage) to substantiate subpopulation spatial patterns.
- Infer patterns of dispersal and recruitment using otolith chemistry in conjunction with ocean circulation models.
- Develop methods to develop management options that capture the spatially and temporally complex Blue-eye Trevalla fishery and which account for extensive recent fishery and marine reserve closures.

10.2 Stock areas and implications for assessment and management

85. Based on dispersal, growth/age and otolith micro chemistry the report suggests there are four stock areas; west, south, east and seamounts and Lord Howe.



10.3 Implications and recommendations

86. Dr Williams was of the view that the three lines of evidence for stock structure ('stock areas') indicate the potential need for both separate assessments for each stock area and some form of spatial management.

87. He thought the benefits of this approach are:

    - greater confidence in the stock assessment leading, potentially, to a less risk averse TAC
    - prevent serial depletion (sequential over-catch in certain areas)
    - consider 'upstream' management of 'source areas' to help ensure the downstream 'sink' areas are replenished.

88. The RAG was of the view that the SW boundary was only defined/supported by the dispersal model, however the NSW/Vic boundary was supported by three lines of evidence (dispersal, age/growth and otoliths).

6. SESSF species suitable for stock regionalisation

89. The RAG recommended AFMA change the advice sought from the RAG from 'justifications for regionalising a number of stocks' to 'identify if there are any stocks that show signs of stock structure, based on our knowledge, and if so are they suitable candidates to be managed as more than one stock'. The RAG advice is provided based on biological evidence and that other factors such as costs and data availability should be considered when deciding to amend the management arrangements for these species.

Action item 5 – AFMA – Immediately

AFMA change the advice sought from the RAG from 'justifications for regionalizing a number of stocks' to 'identify if there are any stocks that show signs of stock structure, based on our knowledge, and if so are they suitable candidates to be managed as more than one stock'.

90. The RAG supported the species identified by AFMA as having some stock structure, i.e. blue warehou, jackass morwong and pink ling. The RAG advised that inshore and offshore ocean perch are suitable for consideration as there is a clear delineation between the two separate species that make up the quota basket for ocean perch.

91. The RAG also advised that stock structure of mirror dory, school whiting and blue eye trevalla require further investigation and these species may be suitable candidates for management arrangements that recognize that there is more than one stock.

11. Report of SESSF research projects

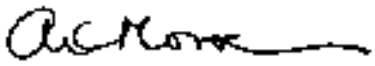
92. Those involved in research projects gave a brief overview of these projects that are summarised in the table below.

Table ~~4~~5 Summary of SESSF project status'

Project	Person reporting	Progress summary
SESSF Strategic Monitoring and Assessment Review Project	Dr Knuckey	The project is at the final draft stage. The report will make recommendations on the methods and frequency of monitoring and assessments.
Non recovering stocks, under caught TACs and adaptability of managing Commonwealth fisheries in light of changing environmental conditions	George Day	These three projects are the subject of a workshop on 20 October.
Risk, cost, catch	Dr Little	A draft report should be finalised in the next few weeks.
The effects of closures	Dr Tuck	Report next RAG meeting
Assessing the effectiveness of a gulper shark exclusion device (GED) in the royal red prawn (RRP) fishery		Preliminary work was done and some video footage taken that shows that the GED shows some promise in reducing the catch of gulper sharks in the RRP fishery, However the project did not progress past this point and was cancelled.
CSIRO – investigating on how best to upload the fishery assessments into the RAMS database	Dr Little	Ongoing.
CSIRO – investigation of recognition software to more effectively gather data from the electronic monitoring program	Dr Tuck	CSIRO is pushing ahead with this project subject to funding.

Finish

The Chair thanked everyone for their attendance and closed the meeting at 12:15.

Signed (Chairperson): 

Date: 1 February 2017

Attachment 1. Agenda

South East Resource Assessment Group (SERAG)

Venue: Freycinet Room, CSIRO, Castray Esplanade, Hobart

Day 1: Tuesday 11 October 2016

Time: 13:15

Chair: Mr Sandy Morison

Time	Item	Presenter
13:15	**1. Preliminaries** 1.1 Welcome and introductions/apologies 1.2 Declarations of interest 1.3 Adoption of agenda 1.4 Review of action items from 2015 Slope and Shelf RAG meetings	Sandy Morison
14:00	**2. General updates** 2.1 Manager's report on management issues including a report on the outcomes from SESSFRAG 2016 (Verbal report) 2.2 Commission's comments on 2016 SESSF TACs (Verbal report) 2.3 ABARES Fishery Status Report 2015 (Verbal report) 2.4 Observer Report (Tabled) 2.5 ISMP Discard report	Brigid Kerrigan Brigid Kerrigan Judy Upston
15:00	*Afternoon tea*	
15:20	**3. Tier 4 assessment – mirror dory** 3.1 RBC	Malcolm Haddon
15:45	**4. Use of MCMCs in stock assessments** 4.1 Discussion of key questions and issues 4.2 RAG recommendation on the use of MCMCs	Andrew Penney
16:45	*Adjourn*	

Day 2: Wednesday 12 October 2016

Time 9:00

Time	Item	Presenter
09:00	**5. Tier 1 assessment – Tiger Flathead** 5.1 Update on the fishery from an industry perspective 5.2 Overview of recent data	Jemery Day, Simon Boag and John Jarvis

	5.3 Preliminary 2015 stock assessment – presentation of models 5.4 Discussion 5.5 RAG recommendation of model and parameters for preparation of base case	
10:30	*Morning tea*	
10:50	Flathead continued	
11:30	**6. Advise on suitable SESSF species for stock regionalisation**. AFMA is seeking SERAG advice on the following matters: 6.1 Assess the criteria used in the draft to identify stocks suitable for regionalisation and provide advice on their suitability. 6.2 If the criteria are unsuitable SERAG to provide advice on new criteria. 6.3 Are the justifications to proceed/not proceed with regionalisation for each SESSF quota species/stock valid? 6.4 Identify/confirm the species chosen as being suitable for regionalisation. 6.5 Provide advice on that if a stock is judged to be suitable for regionalisation what is the most appropriate stock boundary? 6.6 If the stock boundary is not consistent with the quota region boundary – identify the risk to the stock if the quota boundary is used in lieu of the stock boundary	Brigid Kerrigan
12:30	*Lunch*	
13:15	**7. MYTAC review and setting/confirmation of 2017-18 TACs** Breakout analysis: • John dory • Alfonsino • Royal red prawns • Silver trevally • Deepwater shark – east • Deepwater shark – west • Oreo – basket • Ribaldo • Smooth oreodory – non Cascade • Smooth oreodory – Cascade Plateau	Brigid Kerrigan
15:00	*Afternoon tea*	

15:20	**8. School whiting: review of data with a view to undertaking a new Tier 1 assessment in 2017** **9. Gemfish - eastern** 9.1 Review of discussions from SESSFRAG regarding the next assessment 9.2 Data requirements 9.3 SERAG recommendation on undertaking a Tier 1 assessment in 2017	Jemery Day Rich Little
17:00	*Adjourn*	

Day 3: Thursday 13 October 2016

Time 8:30

Time	Item	Presenter
08:30	**10. Blue eye trevalla** 10.1 Report on BET stock structure project 10.2 Implications for BET Tier 4 assessment 10.3 RAG stock structure recommendations for BET assessment	Alan Williams et al.
10:15	*Morning tea*	
10:35	**11. Report on SESSF research projects – for information** **12. Identification of RAG research priorities for the SESSF**	Sandy Morison
11:30	**13. Meeting overview and wrap up, including review of meeting action items and data needs identified by the meeting**	Sandy Morison
12:00	***Meeting close***	

Attachment 2 - Outcomes of outstanding action items from 2015 Slope and Shelf RAG meetings

No.	Action item	Action person	Time frame	Outcome
1	AFMA will convene a small group to write a SESSFRAG paper articulating when a MCMC analysis should be used to develop RBC advice. The paper should explore considerations of using an MCMC in the context of the Harvest Strategy Framework, time and cost.	AFMA, Dr Finn	For March meeting of SESSFRAG	Complete
2	The RAG endorses the ongoing need to document changes to the AFMA database. In line with this endorsement, AFMA and CSIRO to develop a shared site to communicate and document historic changes to the database.	AFMA and CSIRO	Ongoing, part of existing project	Ongoing, part of existing project
3	Noting that the changes Dr Haddon made to the data base Dr Haddon is to liaise with John Garvey (AFMA data base manager) on the way Dr Haddon modified the data columns and other broad brush changes.	Dr Haddon	Before the October 2015 SlopeRAG meeting	Complete
4	The Orca depredation rate is difficult to quantify and estimates are at a lower level of confidence than log book catch rates. The effects of Orca depredation on discard estimates and closure effects should be run as catch rate sensitivities once an agreed catch rate has been decided.	Dr Haddon	Before the October 2015 SlopeRAG meeting	Complete
5	Alert ISMP manager to the shortfall in pink ling data in the main strata and ensure adequate coverage in 2015.	AFMA	Immediately	Complete
6	Undertake the RAG agreed sensitivity runs for the eastern pink ling assessment as per Table 1 in the minutes.	Patrick Cordue	October SlopeRAG meeting	Complete
7	Mr Cordue to compare MCMC fits to the CPUE series as an aid to diagnostics.	Patrick Cordue	October SlopeRAG meeting	Complete
8	Noting concerns with below average recruitment of silver warehou and the retrospective pattern in the model the RAG recommended doing a three year biomass projection using three recruitment scenarios: a) model estimated average r b) 2007 – 2011, model estimate of recruitment (moderately low r) c) 2007 – 2009, model estimate of recruitment (lowest r in records).	Dr Thomson	October SlopeRAG meeting	Complete
9	Review the species breakout rules as the MYTAC's expire and the species are re-assessed.	SlopeRAG	2016 meetings	To be done in November SERAG

10	A table of data needs/requirements to be included as an attachment to the minutes and kept as a live document to be reported on at each RAG meeting.	Executive Officer	Immediately	Complete
11	AFMA to liaise with Tasmanian authorities and obtain a copy of the giant crab final report.	AFMA	When giant crab report is completed	
12	Dr Haddon to run the DBSRA to estimate smooth oreodory productivity when the final depletion is set at 48 percent.	Dr Haddon	October SlopeRAG meeting	Complete

Attachment 3 - Data notes identified by the RAG

Species	Details	Timeframe
All species	Increase sampling in western Bass Strait	As soon as possible
Pink ling	Trawl - there is a shortfall of LF and age data from the main strata	As soon as possible

Attachment 4 - Declarations of interest

Name	Interest Declared
Mr Sandy Morison	Chair of SharkRAG and Tropical Rock Lobster Working Group. Scientific member on SESSFRAG and SEMAC. Contracted by government departments, non-government agencies and companies for a range of fishery related matters including research and MSC assessments of AFMA managed and other fisheries (by SCS Global Service). No pecuniary or other interest
Dr Geoff Tuck	CSIRO. Involved in Stock Assessments. Interest in obtaining funding for future research. Principle investigator on the SESSF stock assessment project.
Dr Rik Buckworth	Research scientist. Interest in obtaining funding for future research. No pecuniary interest or otherwise.
Mr Simon Boag	SETFIA CEO, CFA vice-Chair, runs a consultancy firm. Sits on boards of Commonwealth Trawl Sector boat and quota SFR holding companies as a non-beneficiary director.
Dr Sarah Jennings	Resource economist, Adjunct Senior Researcher, University of Tasmania. Interest in obtaining funding for future research. No pecuniary interest or otherwise.
Dr Brigid Kerrigan	AFMA. Manager of Commonwealth and GAB Trawl Fisheries section. No conflicts of interest pecuniary or otherwise.
Mr Andrew Penney	Sole Director of Pisces Australis Pty Ltd, an Australian registered marine and coastal research and management consultancy based in Canberra. As such, I have an interest in any opportunities in this regard. Principal Investigator on FRDC Project No 2014-009: Development of guidelines for quality assurance of Australian fisheries research and science information, and co-investigator on FRDC Project No 2014-203: SESSF Monitoring and Assessment – Strategic Review.

	Member of the AFMA ERA Technical Working Group. No shareholding and hold no positions relating to any other companies, including any fishing companies or industry associations
Mr John Jarvis	Commonwealth Trawl Sector boat and quota SFR holder. Owns a seafood retail shop. Member of SETFIA.
Mr Ross Winstanley	No pecuniary interest in this fishery however declares he has a brother in law that holds a Victorian Inshore Trawl Licence
Mr Ross Bromley	AFMA. Demersal and Midwater Trawl Fisheries section. No pecuniary interest or otherwise.
Mr George Day	AFMA. Demersal and Midwater Trawl Fisheries section. No pecuniary interest or otherwise.
Dr Rich Little	CSIRO, Assessment scientist. Interest in acquiring funding for research purposes. No pecuniary interest or otherwise.
Dr Jemery Day	CSIRO, Assessment scientist. Interest in acquiring funding for research purposes. No pecuniary interest or otherwise.
Dr Robin Thomson	CSIRO, Assessment scientist. Interest in acquiring funding for research purposes. No pecuniary interest or otherwise.
Dr Judy Upston	CSIRO, Assessment scientist. Interest in acquiring funding for research purposes. No pecuniary interest or otherwise.
Dr Miriana Sporcic	CSIRO, Assessment scientist. Interest in acquiring funding for research purposes. No pecuniary interest or otherwise.
Dr Malcolm Haddon	CSIRO, Assessment scientist. Interest in acquiring funding for research purposes. No pecuniary interest or otherwise.
Dr Karina Hall	NSW Fisheries, Assessment scientist. Acquiring funding for research purposes. No pecuniary interest or otherwise.
Dr Ian Knuckey	**Positions:** Director – Fishwell Consulting Pty Ltd Director – Olrac Australia (Electronic logbooks) Chair / Director – Australian Seafood Co-products (seafood waste utilization) Chair / Director – ASCo Fertilisers (seafood waste utilization) Chair – Victorian Rock Lobster and Giant Crab Assessment Group Agent – Olrac Australia electronic logbooks Invited scientific participant – SEMAC, SERAG **Current / Recent Projects and funding:** Principal Investigator – Fishery Independent Survey of shelf resources in the Great Australian Bight Trawl Fishery 2015 Principal Investigator – Improved understanding of economics in fisheries harvest strategies. Principal Investigator – Realising economic returns of reducing waste through utilization of bycatch in the GAB Trawl Sector of the SESSF Principal Investigator – The social drivers and implications of conducting an ecological risk assessment of both recreational and commercial fishing - a case study from Port Phillip Bay

	Principal Investigator – Review of Monitoring and Assessment in the SESSF Co-Investigator – Optimising processes and policy to minimise business and operational impacts of seismic surveys on the fishing industry and oil and gas industry. Co-investigator – SESSF 2016 Fishery Independent Survey Co-investigator – Bird mitigation in the SESSF trawl sector Researcher – Various fishing industry liaison projects for oil and gas industry Researcher – Review of mammal mitigation for a Seafish Tasmania pelagic trawler Scientific Advisor – GABIA, SETFIA, SSIA, SPF (Geelong Star), Gulf St Vincent Prawn Fishery Facilitator – WWF shark traceability workshop Facilitator – Indonesian fishery training and development
Dr Fay Helidoniotis	ABARES. No pecuniary interest.
Mr Andy Moore	ABARES. Interest in obtaining funding for future research. No pecuniary interest.
Mr Tom Bibby	Commonwealth Trawl Sector boat and quota SFR holder. Chairman of SETFIA.

Attachment 5 - Action items from this meeting

No.	Action item	Action person	Time frame
1	Dr Thomson to investigate if state catches used in the TAC calculations can be better estimated using a weighted average of previous years catch data.	Dr Thomson	November SERAG Meeting
2	Dr Day to prepare a report characterising the available school whiting data and proposed stock assessment structure.	Dr Day	SESSFRAG March 2017
3	Dr Little to complete work on eastern gemfish CPUE using discards to see if it changed trends and affected the likelihood of there being evidence of recovery.	Dr Little	November SERAG Meeting
4	AFMA to check with Fish Ageing Services if there are any potential reasons for the difference between the port length frequency and age frequency of eastern gemfish.	AFMA	November SERAG Meeting
5	AFMA to investigate the small numbers of eastern gemfish lengths reported off NSW in 2015	AFMA	November SERAG meeting
6	AFMA change the advice sought from the RAG from “justifications for regionalizing a number of stocks” to “identify if there are any stocks that show signs of stock structure, based on our knowledge, and if so are they suitable candidates to be managed as more than one stock”.	AFMA	Immediately
7	AFMA to review SESSF MYTAC species breakout rules over the next twelve months.	AFMA	SESSFRAG Data meeting

Attachment 7 - Action items from SESSFRAG relevant to SERAG

2016 July data meeting

No.	Action Item Description	Agency/Person	Timeframe	Outcome
1	Dr Thomson and Mr Garvey to address issues with pre-1998 length data stemming from migration of PIRVIC data. [OP & others - any results to date?]	CSIRO Dr Thomson	As soon as practicable	
2	Mr Burns to remove targets for blue-eye trevalla from the ISMP program because the data are not required for a Tier 4 assessment. [not on SERAG agenda]	AFMA Mr Burns	Immediately	
4	Mr Burns to consider fishery effort at a 3-5 year average when setting the AFMA ISMP sea-day targets. [Agenda Item 2.4]	AFMA Mr Burns	In time for 2017-18 ISMP plan	
8	Mr Boag to investigate why smaller fish are being sampled in the FIS vs commercial catch (ISMP). [Tiger Flathead – implications for assessment? On SERAG agenda]	SETFIA Mr Boag	As soon as practicable	Addressed at this meeting
10	Dr Little to advise AFMA whether the data exploration required to update the 2017 eastern gemfish assessment is in addition to what is required as part of a 'typical' stock assessment. [on SERAG agenda]	CSIRO Dr Little	As part of the assessment update process	Addressed at this meeting
11	In preparation for a 2017 western gemfish Tier 1 stock assessment, Fay Helidoniotis (ABARES) to provide advice to GABRAG on the practicalities of a stepwise approach to doing a preliminary assessment. [needs discussion at SERAG too?]	ABARES Dr Helidoniotis	GABRAG November	
12	AFMA to provide advice on who is responsible for completing the western gemfish Tier 4 assessment (CTS assessment).	AFMA	As soon as practicable	
13	Mr Burns and Dr Thomson to investigate why there are no port samples showing up in the data summary for western gemfish and mirror dory west from November 2015. [need to discuss at SERAG too]	AFMA/CSIRO Mr Burns Dr Thomson	As soon as practicable	

15	AFMA to complete the breakout analysis for Tier 4 species and present the results to SERAG in October 2016.[On agenda]	AFMA	SERAG October 2016	On the agenda for this meeting
18	Dr Krusic-Golub, Dr Upston and Dr Kloser to discuss ageing requirements for the 2017 orange roughy assessment out of session and report back at the October SERAG meeting. [Where on agenda?]	FAS/CSIRO Dr Krusic-Golub Dr Upston	SERAG October 2016	On November SERAG agenda
19	Dr Krusic-Golub and Dr Day to discuss the number of school whiting otoliths to be aged (subsampled) in preparation for the 2017 assessment. If the number differs from the proposed 4400 in the workplan, discuss with SESSFRAG out of session. [part of SW discussion?]	FAS/CSIRO Dr Krusic-Golub Dr Day	For 2017 school whiting assessment	Report to November SERAG
20	Dr Day to discuss the structure of the school whiting assessment at the October SERAG meeting.[On SERAG Agenda]	CSIRO Dr Day	SERAG October 2016	Report to SESSFRAG March 2017 meeting
24	AFMA to work with Mr Boag to establish industry collection of pink ling length samples in the auto-line sector in the east. Dr Patrick Cordue will need to be consulted to establish data requirements.[Not on SERAG agenda]	Mr Boag	As soon as practicable	
30	Mr Penney and Dr Klaer to incorporate the requested changes to the recommendations, and AFMA to forward the revised paper to the SESSFRAGs. [On SERAG agenda]	Mr Penney Dr Klaer	After meeting	Completed. Revised paper sent to SESSFRAG EO.
32	AFMA to prioritise the research projects in the SESSF 2017-18 Annual Research Plan prior to the ARC meeting September 2016. [For November meeting]	AFMA	Prior to September 2016 ARC meeting	
36	Update SlopeRAG on results of the onboard trial to compare on board observer identification data with identification data from electronic monitoring.[not on SERAG agenda]	AFMA	SERAG September 2016	On November SERAG agenda
41	AFMA/CSIRO/FISHWELL/SETFIA to discuss the data preparation	AFMA	As soon as practicable	Report to SESSFRAG

	required for a school whiting assessment in 2017. [on SERAG agenda]	CSIRO FISHWELL SETFIA		March 2017 meeting
42	AFMA to provide Dr Krusic-Golub with guidance on ageing requirements for orange roughy in time for the 2016 SESSFRAG data meeting.	AFMA Ross Bromley	2016 Data Meeting	On November SERAG agenda

2016 March Chairs' meeting

No	Action item	Action person	Time frame	Outcome from RAG
1	Update SlopeRAG on results of the onboard trial to compare on board observer identification data with identification data from electronic monitoring.	AFMA	Slope RAG September 2015	Covered in agenda item 9
2	Silver warehou – the CPUE series for the east and west are different. The RAG requested that two models be presented to SlopeRAG, i.e. combined fleet and east and west fleet. Noting SESSFRAG recommended a single RBC.	Geoff Tuck	SlopeRAG, September	Completed
3	Patrick Cordue to undertake a Tier 1 pink ling assessment this year.	Patrick Cordue	Present first draft of the assessment at the September SlopeRAG meeting	Completed
4	Patrick Cordue, AFMA and CSIRO representatives to have out of session discussions to arrange for provision of data for the ling assessment.	Patrick Cordue, AFMA and CSIRO (Dr Tuck)	As soon as possible	Completed
5	Alfonsino – explore the reason why non east coast deepwater trawl catches are excluded from the data series.	Robin Thomson	SlopeRAG, September	Left out because Alfonsino is only a quota species in the ECDW fishery
6	Individual SESSF RAGs to provide any comments on the data plan template to AFMA.	RAGs	In the course of 2015 meetings	Covered in agenda item 9
7	A sub - committee of Sally Weekes, Simon Boag and Ian Knuckey to use catch data to investigate "grouping" of by product catch and discards.	Sally Weekes, Simon Boag and Ian Knuckey	September RAGs	Covered in agenda item 8
8	Oreodory, non-Cascade - SlopeRAG to consider a depletion based stock assessment, average catch and maximum constant yield when deciding on how best to set an RBC for smooth oreodory (non-Cascade).	Malcolm Haddon to present a paper investigating these options	September SlopeRAG	Covered in agenda item 10

9	Blue eye trevalla – SESSFRAG noted the trawl CPUE standardisation was split east and west. Miriana was requested to do a single BET trawl standardisation.	Miriana Sporcic	September SlopeRAG	Covered in agenda item 4
10	Research – AFMA will investigate integrating examining reasons for falling CPUEs and lack of species rebuilding into the existing research project	George Day	As soon as possible	ComFRAB wanted to keep the project separate from the existing under caught TAC project. FRDC has expressed a desire that someone external to the fishery conduct the research.