Australian Government
Australian Fisheries Management Authority

SESS Fishery Shelf Resource Assessment Group (Shelf RAG) Meeting 2, October 2014

Meeting Minutes

Date: 28- 29 October 2014
Venue: CSIRO, Hobart

Attendance

Name members	Membership (type i.e. chair etc.)
Mr Sandy Morison	Chair
Mr Robert Curtotti	ABARES economic member
Dr Marcus Finn	Member, AFMA trawl fisheries manager
Dr Geoff Tuck	Scientific member, CSIRO
Dr Ian Knuckey	Scientific member, Fishwell Consulting
Mr Tom Bibby	Member, industry
Mr Tony Lavalle	Member, industry
Mr Simon Boag	Member, SETFIA CEO, industry
Mr Malcolm Poole	Member, recreational
Mr Ross Bromley	AFMA, RAG EO
Invited participants and observers	
Mr George Day	Invited participant, AFMA Senior Manager
Mr John Jarvis	Observer, industry
Dr Matt Flood	Invited participant, ABARES
Dr Malcolm Haddon	Invited participant, CSIRO
Dr Jemery Day	Invited participant, CSIRO
Dr Robin Thomson	Invited participant, CSIRO
Dr Miriana Sporcic	Invited participant, CSIRO (Wednesday only)
Mr Nate Meulenberg	AFMA

Minutes

1. Introduction and apologies

Tuesday 28 October 2014

1. The Chair opened the meeting at 8:30 and welcomed members and other participants.

2. The RAG noted there were no apologies

3. The RAG adopted the draft agenda (**Attachment 1**).

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 ShelfRAG members and participants for the meeting is provided in **Attachment 2**.

5. RAG members reported on outcomes arising from action items from the September 2014 meeting. A list of outcomes is provided in **Attachment 3.**

6. The RAG noted one small amendment and after incorporating it adopted the ShelfRAG September 2014 minutes.

2. Redfish – Tier 1 assessment

Geoff Tuck presented the Redfish Tier 1 assessment. See "Stock assessment of redfish, *Centroberyx affinis* based on data up to 2013. Tuck and Day 2014, CSIRO".

7. Previous Redfish assessments were done by Thomson (2002) using an ADMB model and by Klaer 2005 using a Coleraine model.
    - both models used single fleets
    - the stock was split into northern and southern stocks at Latitude 36° south
    - there is some uncertainty over historical catch/discard rates and length composition. Observations of mean length become smaller over time and this leads to a poor model fit to data
    - both assessments indicated a declining biomass that was probably below the limit reference point since the late nineties

2014 assessment

8. The 2014 assessment adopted recommendations from the previous RAG meeting in September 2014:
    - a single stock model, no split at Lat 36°S
    - the assessment used RAG estimated historical catches from Rowlings 1999, Klaer 2005 and Commonwealth landings data thereafter

9. The RAG noted that discard rates were inconsistent through time and had been driven by:
    - fresh market; 1975 – 1985. Discards across all size ranges but with more small fish discarded
    - surimi market;
        a) 1986 – 1992. Discarding rates lower, mainly small fish.
        b) 1993 – 1995. The quantity of fish sent to surimi market declined, Geelong surimi market closes and a consequent increase in discarding.
        c) 1996 – 2000. Discarding declined as redfish became less available. Close of Hacker surimi processor in 2000.
    - size based discarding period. 2001 – 2013, assume that mainly small fish were discarded.

2014 assessment model structure

10. Dr Tuck explained the assessment model structure:
    - the model uses a single trawl fleet
    - catch and discards are from years 1975 – 2013
    - single stock hypothesis with no split at Lat 36°S
    - the assessment was developed using Stock Synthesis 3
    - retention function – account for discarding practices as best we can. Estimate the discard rate in 1975 – 1985
    - selectivity is a single function with no blocking. The size of the fish does not support a change in selectivity however Mr Lavalle informed the RAG that codend mesh sizes changed from 90 mm to 95 mm around 2006 and he thought that this may change the size of the fish retained
    - 2 sex age structured model

- female *M* fixed at 0.10
- recruitment steepness is 0.75
- recruitment is estimated between 1968 and 2012
- all growth parameters, including k, are estimated
- maturity: 50% maturity at 19 cm

For results of sensitivity runs to these parameter assumptions see Tables 7.1 to 7.4 of the assessment document.

Alternative Base Cases

11. Time blocking the retention function attempts to take account of different discarding behavior in time blocks. The base case model identified by the RAG in September (BC1) uses multiple time blocking retention periods (1975-1985; 1986-1992; 1993-1995; 1996-2000; 2001-2013). Although BC1 fits the age data reasonably well it does not fit the catch rate data well using the standard iterative reweighting procedure. Dr Tuck explored two alternatives, base case 2 and 3. BC2 had a single retention function but as this was not a good fit to the data it was discarded.

12. BC3 has only two blocks in the retention function (1975 – 1985 and 1986 – 2013) it was found that reducing the number of time blocks provided a better fit to catch and discard rates.

13. Industry members informed the RAG that they have seen Redfish occurring over greater depths than previously seen. They have also seen larger fish in deeper water and smaller fish in shallow water. These members have noted slight increase in catch rate and agreed that the CPUE trend is reasonably reflective of what they are seeing at sea.

Assessment results and outcomes

14. Assessment outcome:
    - The estimate of spawning biomass is below the limit reference point and is most likely in the range of 0.08 – 0.12 of unfished biomass
    - the long term RBC is in the range of 750 – 850 t
    - recruitment is a big driver of biomass and following recent low recruitment there are stronger signs of recruitment in 2011/12
    - both BC1 and BC3 are reasonable fit to CPUE, discard rates and age data
    - fits to length data are reasonable but catch compositions can show marked changes year to year
    - BC1 shows similar results to BC3.

15. The RAG noted that the driver for the Tier 1 assessment was getting two different signals from the Tier 3 and Tier 4 assessments. CPUE is declining leading to an RBC of zero from the Tier 4 assessment. However the Tier 3 analysis shows that current F is low, (below the level of overfishing) and consequently a rising RBC.

Morning tea

Dr Haddon gave a presentation on his analysis of length for age of Redfish

16. Dr Malcolm Haddon presented a summary of his project exploring length at age for Redfish. The objectives of this work were to:
    - characterize the data available in terms of lengths, ages, regions, and sexes
    - compare the von Bertalanffy (VB) growth curve exhibited by males and females
    - compare the VB growth curve for Redfish in zones 10 and 20

- estimate the empirical mean length at age for the four combinations of zone with sex.

17. In most years there are insufficient data to estimate a single year VB growth curve and the data that there are show a high degree of variation of lengths and ages. Samples from Zone 20 are probably insufficient to represent population growth on a yearly basis. Although there are more data from Zone 10 these data may not fully represent the population. It appears that a large number of samples are required to represent the ages of fish in the stock.

18. The RAG noted temporal and spatial variation in growth between male and female Redfish both within Zones 10 and 20 and between zones. Given the different sampling methods and the depth of fishing the RAG found it difficult to decide if these results are representative of population growth or due to sampling.

19. The data from unsexed fish may include males, females and immature fish and because of the variation in growth rates it is not suitable to be used in an assessment.

20. The RAG noted there are a number of questions arising from this work that need to be considered:
    - do the yearly samples pick up population growth
    - is there evidence of different growth or age structure that supports the hypothesis of more than one Redfish stock
    - how do we characterize age/growth in Zone 10
    - has growth changed over time?

21. The RAG noted there was a lot of variability in the data and it was unsure how this affects the assessment. However the RAG was confident that the sensitivities run did not have a great effect on the model outcomes and the RAG decided not to postpone its Redfish advice due to these concerns.

Lunch

Redfish assessment continued

22. The RAG recommended adopting Base Case 3 (BC3) for this assessment, noting that:
    - the model was highly influenced by catch rates
    - the estimated depletion was relatively insensitive to a range of assumptions. Sensitivities explored by re-running the model with a wide range of different input parameters produced depletion estimates in the range of 7-19% of unfished biomass
    - the work is akin to work done in the past
    - the model is producing a valid assessment
    - is reflective of what operators are seeing on the water.

23. Dr Knuckey informed the RAG that catch data from the 2014 Fishery Independent Survey showed some signs of a recruitment pulse entering the fishery. This was confirmed by industry members and the RAG noted this was consistent with a small increase in the recruitment index and trawl CPUE index.

24. Under BC3 the estimated female spawning biomass is 14,615t, with the estimated 2015 stock status being 12 percent of unfished biomass. Because the estimated stock status is less than the limit reference point of 20 percent of unfished biomass

and based on the 20:35:48 control rule the **RBC is zero.** Consequently AFMA sought RAG advice on:

- fixed catch projections of HCR (20:35:48), 50 t, 100 t and 150 t and rebuilding times to 20 percent of unfished biomass
- mean generation time
- estimates of targeted catch from Klaer (2012)

Subsequently Dr Tuck developed deterministic fixed catch projections using BC3 and average recruitment scenarios (Table 1 and Attachment 4). The projection indicated that under these assumptions the stock should rebuild to above the limit reference point (20 percent of unfished biomass) by about 2018. Catch projections between 0 and 150 t made little (months) difference in recovery time to the limit reference point.

Table 1. Deterministic fixed catch projections under BC3 assumptions and mean recruitment from S-R relationship

Catch	20:35:48	C = 50 t	C = 100 t	C = 150 t
2015	0.117	0.117	0.117	0.117
2016	0.152	0.151	0.149	0.147
2017	0.190	0.186	0.183	0.179
2018	0.225	0.219	0.213	0.207
2019	0.255	0.249	0.241	0.232
2020	0.280	0.278	0.267	0.256

25. Dr Knuckey observed that in his view the fleet could reduce catches of small Redfish by increasing codend mesh size however increased mesh size would probably mean a decrease in flathead catch.

Note: This discussion was adjourned and resumed on Wednesday morning.

Redfish - continued

26. The RAG noted that:
    - there was not a rebuilding strategy in place for Redfish
    - setting an incidental bycatch TAC for next year was consistent with the Harvest Strategy policy
    - companion species analysis by Klaer and Smith (2008) indicate that Redfish were targeted 36% of the time
    - catches were about 90 t in 2012/13
    - it would be useful to have a specific targeting analysis for Redfish for next year's Redfish review to allow the RAG to give more specific advice
    - there are signs on the water of a recruitment pulse coming through and this can also be seen in the latest CPUE data
    - FIS data indicates the long term abundance trend appears to be flat
    - assuming average recruitment, catch projections of catches between 50 and 150 t show little variation in the time to rebuild to the limit reference point under these scenarios
    - NSW Fisheries have apparently deferred their discussions on Redfish management until the outcomes of this assessment are clear
    - Redfish discards by Commonwealth boats in 2013 were estimated to be 29.5 t. Mr Jarvis informed the RAG that he thought that NSW state discards would be similar to the Commonwealth figure.
    - NSW retained catch was 15.5 t.

Action item 1 – CSIRO
Complete a specific Redfish targeting analysis by the first ShelfRAG meeting in 2015.

Action item 2 – AFMA
AFMA to review ISMP plan for Redfish and decide if it is suitable, noting there should be 80% sampling coverage in Zone 10 and otolith collection.

27. The **RAG recommended** a Redfish TAC of 100 t for one year and a review of the TAC next year following analysis of Commonwealth and state catches and discards. This decision is based on:
    1) a fishing mortality of 150 t would not impede rebuilding in a similar timeframe as lower catches
    2) state catches and discards of 50 t are subtracted from the above
    3) factoring in that there may be an increase in catches due to an indicated increase in recruitment and the need to minimize discards as much as possible
    4) it is difficult for the RAG to develop alternate TAC recommendations in the absence of a targeting analysis.

Action item 3 – AFMA/CSIRO
Conduct an analysis of state and Commonwealth discard and catch rates of Redfish.

28. The RAG considered break out rules and recommended that triggers for review of the most recent stock assessment for Redfish will be detailed in the rebuilding strategy under the SESSF Harvest Strategy Framework.

29. The RAG decided not to pursue a MCMC analysis for Redfish as there was little doubt that the stock status is below the limit reference point.

Species	Assessment	RBC (t)	Incidental TAC (t)	Discount factor	Under/over catch
Redfish	Tier 1	0	100	NA	NA

3. Review of under caught Shelf species

30. The RAG noted that most of the Shelf species TACs were under caught and had been for a few years. Dr Knuckey showed the RAG a number of graphs showing that the CPUE for most Shelf species had been in decline for a number of years. The RAG discussed what some of the reasons for this may be and some specifics are identified in the table in **Attachment 5**. General issues that may have resulted in under catch can be summarized as:
    a) underlying environmental issues affecting abundance and spatial distribution, including the recent strength and pattern of the east Australian current and climate change
    b) broad range of economic issues:
        i. small size of the fresh market
        ii. lack of market resilience to large quantities of fish
        iii. quota being held by non – fishing entities and an overpriced see/lease price

iv. margins are tight and operators only fish when they are confident of taking large catches
v. most operators have been in the industry for many years and may have become apathetic.

31. In response to a query from SEMAC the RAG identified the following as future work that could be undertaken to explore reasons for under catch:
    - identify if there are any AFMA management impediments to the fleet maximizing catches
    - identify other issues contributing to under catch
    - identify ways of increasing the SESSF GVP.

32. AFMA plans to develop a proposal for submission to ARC and CommFRAB to investigate potential reasons for under catching in a number of fisheries.

4.3 Tier 3 species assessment – John Dory

33. Dr Robin Thomson presented the Tier 3 assessment for John Dory.

34. The RAG was reminded that a Tier 3 assessment relies on measurement of the decline in numbers at age of a population (accepting a number of assumptions) and the slope of the right hand limb of the age frequency distribution can be used to calculate fishing mortality.

35. No new ageing data are available for John Dory (i.e. aged from otoliths) and an age/length key was used to estimate ages across all sizes. The assessment uses the last five years of data to estimate F, 2009 – 2013. No new ageing data are available for John Dory the most recent sampling are from 2011. ShelfRAG has previously indicated that the sampling for John Dory in 2011 was not representative, having under sampled the winter period.

36. The RAG noted that when the 2013 data was added it showed that the catch increased by 10 percent however the estimate of F doubled. The RAG viewed this as not being a biological reality and is reflective of the assumptions in the model, i.e. that fishing is having a larger effect on total mortality and even though the gradient is small F went up.

37. The RAG discussed whether it was more suitable to use F48 or F40 as the appropriate target for John Dory. The **RAG agreed** to provide RBC advice using F40 as target for John Dory for the following reasons:
    - John Dory is not a key economic species in the fishery
    - it is not targeted and is taken when catching other species
    - the John Dory TAC is significantly under caught and therefore the size of its TAC does not constrain catching of other more economically important species.

38. The RAG considered a Tier 4 analysis noting that:
    - the Tier 4 reference period has very large catches that have not been repeated or even approached
    - the pattern of catch reporting is more consistent with a bycatch species
    - in 2011 the RAG recommended that an analysis of seasonality of spatial effects on catch rates

- the CPUE in the analysis using the average of the last four years is relatively flat, below the CPUE limit reference point and the lowest on record. Any RBC derived from this assessment would be between low and zero.

The RAG decided due to the above reasons it had more faith in the Tier 3 assessment.

39. The RAG agreed:
    - to use F40 as target and the respective RBC of 203 t
    - that the previous rationale of stable CPUE no longer exists therefore a 5% discount as per the HSP will apply
    - that there was no reason not to apply a three year multiyear TAC (MYTAC) and that a three year MYTAC using the RBC of 203 t should apply.

Species	Assessment	RBC (t)	MYTAC	Discount factor	Under/over catch
John Dory	Tier 3	203	3 year	5 %	10%

40. The RAG considered suitable breakout rules for the John Dory MYTAC and noted that:
    - a change in catch rate is not appropriate as catch rate is not reflected in the Tier 3 assessment
    - the John Dory breakout rules should define a metric of a change in size composition.

41. The RAG recommended adopting the breakout rule that if greater than 80 percent of the TAC is caught the RAG shall review available John Dory data.

Meeting adjourned at 16:55

Wednesday 29 October

4.2 Tier 3 species assessment - Mirror Dory

42. The RAG suggested in 2012 that there may have been a companion species relationship between Mirror Dory and Eastern Gemfish but speculated that this is likely to have changed due to avoidance of Eastern Gemfish during their spawning run.

43. The RAG expected that there would be new aging data available this year to undertake a Tier 3 assessment of Mirror Dory however these data are not available and a Tier 3 assessment could not be done.

44. The RAG agreed that the previous Tier 3 assessment (length based) was not robust due to unrepresentative length data and the previous RBC was probably too high.

45. The RAG agreed to a Tier 4 assessment being used for this species this year and unless there is a good reason not to, plan for an undated Tier 3 assessment next year.

46. Mirror Dory are assessed as an eastern and western stock (eastern = Zones 10 – 30, western Zones 40 and 50).The RAG agreed to continue assessing Mirror Dory as two separate stocks this year however the RAG recommended that this be reviewed next year.

Action item 4 – CSIRO
Review the rationale for continuing to assess Mirror Dory as two separate stocks.

47. Dr Malcolm Haddon presented the Tier 4 assessment and the RAG noted:
    - that the RAG had previously agreed that due to the large amount of discards in the eastern area to include discards in the catch rate analysis. There was a marked increase in eastern area catch rate when discards are included and the effect of this is to increase the estimate of eastern area RBC from 392 t to 523 t
    - discards are not included in the catch rates in the western area and the RBC is 161 t
    - total Mirror Dory RBC = 523 t + 161 t = 684 t
    - there is no indication from the Tier 4 analysis that there are any problems with the stock
    - if sampling of Mirror Dory is an issue it may be difficult to get enough data to undertake a Tier 3 assessment next year
    - the RAG did not recommend a MYTAC given the apparently cyclical nature of Mirror Dory stock status and catches, and concerns that a MYTAC will not be able to respond to relatively rapid changes in biomass.

Species	Assessment	RBC (t)	Discount factor	Under/over catch
Mirror Dory	Tier 3, however due to insufficient data Tier 4 done this year	684	15%	10%

4.1 Blue Warehou

48. Dr Haddon presented an update of Blue Warehou data. The RAG noted:
    - eastern zone reported catch was very low in 2013, about 4 t
    - western zone reported catch was about 58 t
    - catch plots do not show any evidence of stock contraction
    - there is no evidence of operator targeting and operators appear to be good at avoiding Blue Warehou
    - there is no evidence of the Blue Warehou stock rebuilding. If rebuilding was occurring there should be evidence of increased catches. However the RAG recognized that discards may not be fully reported and this may be masking any signs of stock rebuilding.

49. Noting there was no new data to justify a change in TAC the RAG agreed to rollover the existing incidental bycatch TAC of 118 t.

4.4 School Whiting

50. Dr Jemery Day presented a School Whiting update. The RAG noted that:
    - the NSW state catch was 998 t in 2012 and 805 t in 2013
    - the current catch is within the TAC and below the long term RBC of 1660 t
    - state catch is within historical levels

51. The RAG agreed that it was appropriate to continue with the long term RBC.

5. Eastern Gemfish

52. Mr Nate Meulenberg, gave a presentation of the AFMA National Intelligence Unit's analysis of Commonwealth Trawl Sector Gemfish catches from 2008 – 2013. The RAG noted:
    - there was some evidence of targeting by a small number of operators
    - some boats consistently discard all Gemfish catch and some retain all Gemfish catch
    - certain months, depths and areas consistently produce larger catches
    - catches by the recreational sector are unquantifiable but anecdotally increasing
    - Gemfish is regularly imported into Australia from New Zealand.

53. Mr Meulenberg identified an area east of Shellharbour where most spawning run Gemfish are caught. Options that could be considered to reduce the Gemfish spawning run catch include; trip/day limits, area closures or increased area coverage.

54. The RAG had a general discussion regarding eastern Gemfish that can be summarized as follows:
    - The retained Gemfish catch has declined but discarded catch increased to about 140 t during the last season. Discards form part of the overall fishing mortality and the bycatch TAC does not appear to be constraining total fishing mortality.
    - Although recruitment is occurring, rebuilding is not happening as would be expected. The RAG considered that fishing mortality should not be constraining rebuilding however due to operator avoidance of Gemfish and the level of unreported discards rebuilding may be difficult to pick up from catch records.
    - Dr Knuckey thought the current assessment of Gemfish is reasonably reflective of what is being seen by operators.
    - Due to the long period of a bycatch only TAC we do not have an accurate index of abundance and development of a Tier 1 assessment is probably not possible.
    - the catch rate series (non – spawn) increases when discards are included and we should take account of this in the assessment. If discards are included the current total catch increases to about 220 t which is consistent with the current total fishing mortality.

55. The RAG identified that the following should be considered for Gemfish future work:
    - re – analyse different catch and recruitment series using the current model
    - review of whether the rationale for continuing with the 100 t bycatch TAC is still valid or are there other options
    - analysis of VMS to identify and quantify Gemfish targeting
    - get a better estimate of discards and total fishing mortality
    - investigate if there is any evidence to support a regime shift.

6. SESSF five year research plan, 2016 - 2020

56. The AFMA Manager presented the review of the SESSF five year strategic research plan to the RAG and sought advice. It was noted that the current five year strategic

research plan runs from 2011 to 2015 and the next five year research plan will cover 2016 to 2020.

57. AFMA noted that it requires RAG input into the strategy section including identifying the priority areas and research needs. The aim of the plan is to ensure attainment of AFMA's two primary management objectives which are to ensure the ecological sustainability of the fishery and to maximise the economic efficiency of the fishery.

58. It was noted that the SESSF specific research priorities are broken into four broad areas:
    - assessment of target stocks in the fishery
    - assessment of the impacts of the fishery on the surrounding ecosystem
    - assessment of the economic performance of the fishery
    - identification, monitoring and appraisal of appropriate management actions.

59. The Chair reminded the RAG to be aware of potential conflicts of interest when discussing research priorities given that there were research providers in the room. The RAG noted declared conflicts from Dr Knuckey, CSIRO staff, Mr Tom Bibby and Mr Simon Boag.

60. The Chair highlighted the following points on the annual research plan that were raised at SESSFRAG:
    - in listing research priorities, there were some that were considered as essential such as the FIS, aging work and the observer work.
    - there were differing views about the importance of the FIS. The Chair suggested that this could be because usable results from the FIS are not obtained for all species and some sectors may not get the benefit out of the FIS. Some sectors did not have a lot of confidence in the results of the FIS.
    - there was a view that byproduct monitoring and assessment are not a high priority and can probably wait for the outcomes of the review of the Commonwealth Bycatch Policy and the Commonwealth Harvest Strategy Policy and Guidelines before pursuing any other type of work.
    - the evaluation of MYTACs is important but tempering that view is the fact that many species' TACs are under caught.
    - there was a suggestion that reviewing the habitat work is a priority given the amount of work that has been done in the past.
    - the shark representatives suggested that work on pingers to reduce cetacean interactions needs to be done.

61. The RAG noted the draft Research Plan from AFMA (**Attachment 6**) identified three projects they believed should be put on the Research Plan:
    a) Identify impediments to the alignment of assessments with management.
    b) Identify what is driving SESSF catches down and impediments to catching the TAC and investigate how this impacts on boat profitability.
    c) Investigate the lack of recovery of low biomass stocks given periods of low catches and expected recovery.

62. The Chair reminded members were still able to provide advice to AFMA outside of this forum.

Action item 5 – AFMA
Provide a list of current SESSF research projects.

63. The Chair thanked all participants for their attendance and closed the meeting at 15:00.

Signed (Chairperson):

Date:

List of Attachments

1) Shelf RAG October 2014 Agenda
2) Shelf RAG October 2014 Declared conflicts of Interest
3) Action items
4) Redfish catch projections
5) Table 1. Summary of potential reasons for under-caught shelf species
6) Southern and Eastern Scalefish and Shark Fishery 2015-16 Annual Research Plan

Attachment 1. ShelfRAG agenda

Southern and Eastern Scalefish and Shark Fishery Shelf Resource Assessment Group (Shelf RAG) Agenda

Venue: Freycinet Room, CSIRO, Castray Esplanade, Hobart

Day 1: Tuesday 28 October 2014

8:30 AM – 16:30 PM

Chair: Mr Sandy Morison

Time	Item	Presenter
8:30	**1. Preliminaries** 1.1 Welcome and introductions/apologies 1.2 Declarations of interest 1.3 Adoption of agenda 1.4 Adoption of minutes from the September meeting 1.5 Action items from September meeting	Sandy Morison
9:30	**2. Redfish - Tier 1** 2.1 Presentation of Redfish preliminary stock assessment 2.2 Exploration of sensitivities; doubling of catch, stock structures 2.3 Future biomass/catch projections 2.4 RAG recommendation of Base Case 2.5 RBC recommendation (if applicable) 2.6 Update Redfish species summary	Geoff Tuck
10:15	*Morning tea*	
10:35	**Redfish - continued**	Geoff Tuck
12:30	*Lunch*	
13:15	**Redfish - continued**	
14:40	*Afternoon tea*	
15:00	***3.* Review of under caught Shelf species**	Marcus Finn
16:30	*Close*	

Day 2: Wednesday 29 October 2014

8:30 AM – 15:30 PM

Time	Item	Presenter
8:30	**4. Tier 3 and 4 Shelf species RBC and MYTAC recommendations:** 4.1 Blue Warehou 4.2 Mirror Dory	CSIRO
10:15	*Morning tea*	
10:35	4.3 John Dory *4.4* School Whiting	CSIRO
12:00	**5. Eastern Gemfish** 5.1 Presentation of a report from Compliance	Nate Meulenberg
12:30	*Lunch*	
13:15	**Eastern Gemfish - continued** **RAG comments and advice on future work**	Marcus Finn/ Sandy Morison
14:30	*Afternoon tea*	
14:50	**6. Five year research plan** ShelfRAG to provide advice to assist preparation of the 2016 Research Plan including: i. structure of the research plan including headings and supporting information ii. research needs for the SESSF iii. priorities for the period 2016-2020.	Marcus Finn
15:30	*Finish meeting*	

Attachment 2

ShelfRAG Declared Conflicts of Interest

Members	Position	Declaration of interest
Mr Sandy Morison	Chair	SlopeRAG and ShelfRAG Chair, member of SEMAC and SESSFRAG. Consultant with an interest in funding for research purposes. Conducts fisheries related work consultancies for industry, companies and other Government departments.
Dr Marcus Finn	AFMA member	AFMA. Manager of Commonwealth and GAB Trawl Fisheries section. No conflicts of interest.
Mr Ross Bromley	RAG, EO	Executive Officer AFMA. Demersal and Midwater Trawl Fisheries section. No pecuniary interest.
Dr Geoff Tuck	Scientific member	CSIRO. Involved in Stock Assessments. Interest in obtaining funding for future research. Principle investigator on the SESSF stock assessment project and marine closures project.
Dr Ian Knuckey	Scientific member	Director Fishwell Consulting Pty Ltd Chair – Northern Prawn Fishery Assessment Group Chair – Victorian Rock lobster Assessment Group Chair – Australian Seafood Co-products Agent – Olrac Australia electronic logbooks Scientific Member – Northern Prawn Management Advisory Committee Scientific Member – SESSF Shelf Resource Assessment Group Scientific Member – Great Australian Bight Resource Assessment Group Scientific Member – Scallop Resource Assessment Group Scientific Member – Squid Resource Assessment Group Principal Investigator – SESSF and GAB Fishery Independent Survey Principal Investigator – Research projects in Vic, SA and Qld Strategy Project Member – Review of Monitoring and Assessment in the SESSF Project Member – Bird mitigation in the SESSF trawl sector Project Member – Various fishing industry liaison projects for oil and gas Scientific Advisor – GABIA, SETFIA, SSIA
Mr Robert Curtotti	Economic member	ABARES. Interest in obtaining funding for future research. Also member of SquidRAG. No pecuniary interest.
Mr Simon Boag	Industry member	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. Commonwealth Marine Reserve review panel member for the Temperate East. Member Victorian fisheries advisory council. Other unrelated committees and groups.
Mr Tom Bibby	Industry member	Commonwealth Trawl Sector boat and quota SFR holder. Chairman of SETFIA.
Mr Tony Lavalle	Industry member	Commonwealth Trawl Sector boat and quota SFR holder. Member of SETFIA board.
Mr	Recreational	Recreational fisher. Treasurer and Board member Recfish

Malcolm Poole	fishing member	Australia, member of Australian Recreational Fishing Foundation, Chairman Recreational Fishing Alliance of NSW, committee member on NSW Maritime Advisory Council. No pecuniary interest.
Mr George Day	Invited participant	AFMA, Senior Manager. No pecuniary interest.
Mr John Jarvis	Invited participant	Commonwealth Trawl Sector boat and quota SFR holder.
Dr Matt Flood	Invited participant	ABARES
Dr Malcolm Haddon	Invited participant	CSIRO, assessment scientist
Dr Jemery Day	Invited participant	CSIRO, assessment scientist
Dr Robin Thomson	Invited participant	CSIRO, assessment scientist

Attachment 3 Action items

Table of action items from ShelfRAG September 2014

No.	Action Item	Person Responsible	Timeframe	Outcome
1.	AFMA Manager to check that species summaries are on the AFMA website and to upload if not already done	AFMA Manager	By the October 2014 ShelfRAG meeting	Complete
2.	CSIRO to look at more recent age data and identify if there is evidence of a transient Redfish stock occurring in other years by looking at the variation in mean length of age across years.	CSIRO	By the October 2014 ShelfRAG meeting	Dr Haddon to address at this meeting
3.	Marcus Finn to confirm that length frequencies of Blue Warehou have been received by a specific AFMA employee and entered into the AFMA database	Dr Marcus Finn	By the October 2014 ShelfRAG meeting	Complete
4.	AFMA to discuss with CSIRO as to whether a targeting analysis should be performed every year for Blue Warehou and whether it fits into the current contract.	AFMA and CSIRO	By the October 2014 ShelfRAG meeting	Not complete
5.	CSIRO to plot available Mirror Dory and John Dory age composition data.	CSIRO	By the October 2014 ShelfRAG meeting	Complete
6.	The RAG agreed that to be able to provide further advice, Mirror Dory data needs to be separated into East and West. Mirror Dory will be readdressed at the October meeting	Dr Malcolm Haddon	By the October 2014 ShelfRAG meeting	Complete
7.	CSIRO to update John Dory catch data and present a Tier 3 assessment at the October meeting.	CSIRO	By the October 2014 ShelfRAG meeting	Complete
8.	CSIRO to update State catches and present a School Whiting update at the October meeting.	CSIRO	By the October 2014 ShelfRAG meeting	Complete

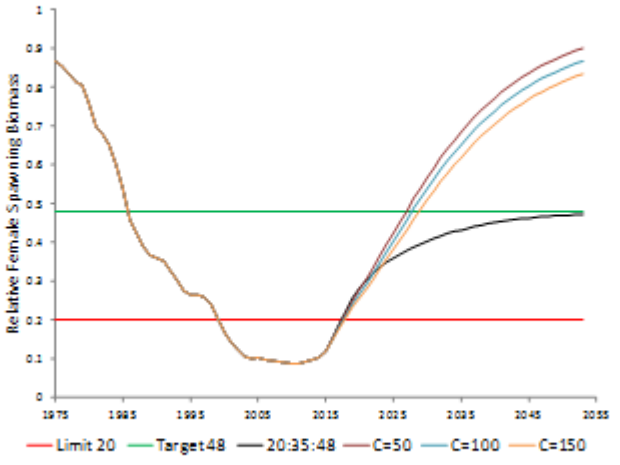
Table of action items from ShelfRAG October 2014

No.	Action Item	Person Responsible	Timeframe
1.	Complete a specific Redfish targeting analysis	CSIRO	First ShelfRAG meeting in 2015
2.	AFMA to review ISMP plan for Redfish and decide if it is suitable, noting there should be 80% sampling coverage in Zone 10 and otolith collection.	AFMA	ASAP
3.	Conduct an analysis of state and Commonwealth discard and catch rates of Redfish.	CSIRO	First ShelfRAG meeting in 2015
4.	Review the rationale for continuing to assess Mirror Dory as two separate stocks.	CSIRO	First ShelfRAG meeting in 2015
5.	Provide a list of current SESSF research projects.	AFMA	ASAP

Attachment 4. Redfish catch projections

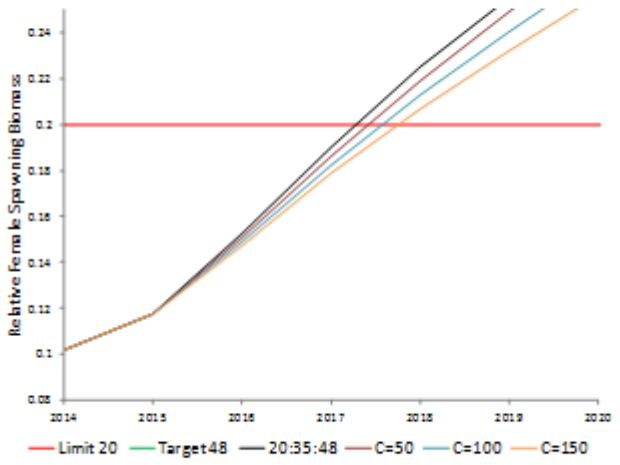
Assessment outcomes

•Deterministic fixed catch projections under BC3 assumptions and mean recruitment from S-R relationship



Assessment outcomes

•Deterministic fixed catch projections under BC3 assumptions and mean recruitment from S-R relationship



Assessment outcomes

•Deterministic fixed catch projections under BC3 assumptions and mean recruitment from S-R relationship

	20:35:48	C=50	C=100	C=150
2015	0.117	0.117	0.117	0.117
2016	0.152	0.151	0.149	0.147
2017	0.190	0.186	0.183	0.179
2018	0.225	0.219	0.213	0.207
2019	0.255	0.249	0.241	0.232
2020	0.280	0.278	0.267	0.256

Attachment 5: Summary of potential reasons for under-caught shelf species

Reason for quota uncaught	Blue Warehou (NA)	Flathead	Gemfish (eastern) (NA)	Jackass Morwong	John Dory	Mirror Dory	Ocean Perch (92%)	Redfish	Royal Red Prawn	School Whiting	Silver Trevally
Lack of appropriate vessel									■		
Fish too small											
Price too low										■	
Quota unavailable							■				
Quota too expensive		■									
TACs too high (assessments too optimistic)											■
Weather											
Closures							■		■		■
Availability		■		■	■	■		■			■
Fleet capacity/Effort		■		■	■	■			■		
Companion species unavailable						■					
Cost to catch											■
Compliance costs											
Search Capacity									■		
Soft market (price declines as landings increase)						■			■		

Attachment 6

Southern and Eastern Scalefish and Shark Fishery 2015-16 Annual Research Plan

Assessment of target, bycatch and by-product species

Fishery	Topic	Proposed Project	Evaluation		
			Cost	SESSFRAG views on m'ment Priority	Feasibility
SESSF – AFMA funding	Assessment of target species	Conduct stock assessments Potential 2015 T1: Bight Redfish, Blue Grenadier, Eastern Gemfish, Jackass Morwong, Silver Warehou Potential 2016 T1: Deepwater Flathead, Flathead, Western Gemfish, Gummy Shark, Pink Ling	High	Essential	High
SESSF – AFMA funding	ISMP data services contract	Conduct analysis and reporting of ISMP data	Med	Essential	High
SESSF – AFMA funding	Integrated Scientific Monitoring Program	AFMA observer program, logbooks	High	Essential	High
SESSF – AFMA funding	Fish Ageing	Undertake fish ageing for SESSF to support assessments	High	Essential	High
SESSF – FRDC funding	Observer effects	Investigation of the impact of observer effects on ISMP data and potential flow-on effects to assessments	Low	Low-Med	Medium
	Recovery of overfished stocks	Investigation the lack of recovery of low biomass stocks given periods of low catches and expected recovery. (Environmental shift? Loss of biomass signal in obtainable data? Violation of assumption of stability in biological characteristics of stocks (environmental?) Fundamental shifts in community composition?))			

Ecosystem-based management

Fishery	Topic	Proposed Project	Evaluation		
			Cost	**M'ment Priority**	**Feasibility**
SESSF (GHAT)	Mitigation measures	Research and investigation on acoustics/pingers, changes to mesh height and gear configuration to mitigate marine mammal interactions and support the Dolphin Strategy	Low	Medium	Medium

Socio-economic considerations and Management Strategy Evaluations

Fishery	Topic	Proposed Project	Evaluation		
			Cost	**M'ment Priority**	**Feasibility**
SESSF – initially request fishery RAGs to consider on a spp basis	Under caught TACs	Determine why some TACs in the SESSF are under caught and propose options to resolve this where possible	Initially low	Low (GABIA) High (SESSF)	Unknown
SESSF	Stability in TACs	Assess different approaches to setting **multi-year TACs.** Quantitatively evaluate increases in risk that may result from implementing **multi-year TACs** and propose ways to reduce the risk including critical evaluation of precautionary reduction in MYTACs and the large change limiting rule. Evaluate the need for, and possible form of, breakout rules associated with **multi-year TACs.** Undertake Management Strategy Evaluation of breakout rules	High	Low (over short-term)	High

SESSF	Stability in TACs	Determine error estimates for Tier 3 and Tier 4 to inform species specific approach to application of discount factors	Medium	Low (while TACs are well under caught)	Medium

Integration of data collections processes and dissemination to end users

Fishery	**Topic**	**Proposed project**	**Cost**	**M'ment Priority**	**Feasibility**

Cost:

- **High: >$200,000**
- **Medium: $100,000 - $200,000**
- **Low: <$100,000**