



Australian Government
Australian Fisheries Management Authority

SESSF Total Allowable Catch recommendations for the 2017- 18 fishing year

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Introduction

This paper outlines AFMA Management's recommendations for total allowable catches (TACs) for species in the Southern and Eastern Scalefish and Shark Fishery (SESSF) for the 2017-18 fishing year, commencing 1 May 2017.

This paper is to provide you with an opportunity to consider AFMA Management's TAC recommendations before the South East Management Advisory Committee (SEMAC) TAC meeting on 18-19 January 2017. If you have any questions or comments, please raise them with the relevant member of SEMAC

(<http://www.afma.gov.au/fisheries/committees/south-east-management-advisory-committee-semac/>) or AFMA managers Dr Brigid Kerrigan for Commonwealth Trawl Sector and Great Australian Bight Trawl Fishery on 02 6225 5322 or Brodie Macdonald for Gillnet, Hook and Trap on 02 6225 5368. SEMAC will not be discussing Bight redfish and deepwater flathead which are considered by the Great Australian Bight Industry Association (GABIA) and the Great Australian Bight Management Advisory Committee (GABMAC).

The commentary below summarises some of the issues considered by SESSF Resource Assessment Groups (RAGs) and AFMA Management in making its TAC recommendations. Also relevant are stock assessment outcomes, harvest strategy control rules, TAC setting principles and rebuilding strategies.

This paper provides AFMA Management's current recommendations. It does not represent the views of the AFMA Commission; the Commission may make decisions that are different to the AFMA Management recommendations in this paper.

Table 1. Summary table of AFMA Management recommendations for SESSF quota species.

| Species | 2015-16 Catch (t) | 2016-17 agreed TAC (t) | Tier | 2017-18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016-17 (t) |
|---------------------------|-------------------|------------------------|------|-----------------|----------------|-------|---------|------------------------|---|-------------------------|
| | | | | | Discount | State | Discard | FIS – RCA ¹ | | |
| Alfonsino | 0 | 1017 | 3 | 1070 | 53 | 0 | 0 | 0 | 1017 (Three-year MYTAC extended for one year) | 0 |
| Bight redfish | 180 | 800 | 1 | 797 | 0 | 0 | 0 | 0 | 800 (2 nd year of a three-year MYTAC) | 0 |
| Blue eye trevalla | 299 | 410 | 4 | 526 | 0 | 20 | 1 | 0 | 505 (single year TAC) | +95 |
| Blue grenadier | 1754 | 8810 | 1 | 8810 | 0 | 0 | 0 | 45 | 8765 (Three-year MYTAC extended for one year) | -45 |
| Blue warehou | 2 | 118 | 4 | 0 | 0 | 0 | 0 | 0 | 118 (incidental catch TAC) | 0 |
| Deepwater flathead | 627 | 1150 | 1 | 1115 | 0 | 0 | 0 | 0 | 1115 (1 st year of a five year MYTAC) | -35 |
| Deepwater shark (eastern) | 22 | 47 | 4 | 47 | 0 | 0 | 0 | 1 | 46 (Three-year MYTAC extended for one year) | -1 |
| Deepwater shark (western) | 68 | 215 | 4 | 263 | 0 | 0 | 0 | 0 | 215 (Three-year MYTAC extended for one year) | 0 |
| Elephantfish | 54 | 92 | 4 | 306 | 46 | 4 | 141 | 1 | 114 (2 nd year of a three-year MYTAC) | +22 |
| Flathead | 2909 | 2882 | 1 | 2901 | 0 | 196 | 160 | 10 | 2535 (1 st year of a three-year MYTAC) | -347 |
| Gemfish (eastern) | 30 | 100 | 1 | 0 | 0 | 0 | 0 | 0 | 100 (incidental catch) | 0 |

¹ RCA (Research Catch Allowance) is allocated for research and monitoring purposes. The RCA for the 2016 FIS is deducted from the 2017-18 RBCs.

| Species | 2015-16 Catch (t) | 2016-17 agreed TAC (t) | Tier | 2017-18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016-17 (t) |
|--------------------------------------|-------------------|--------------------------------------|------|--|----------------|-------|---------|------------------------|---|-------------------------|
| | | | | | Discount | State | Discard | FIS – RCA ¹ | | |
| Gemfish (western) | 82 | 247 | 1/4 | 200 | 0 | 0 | 0 | 1 | 199 (1 st of a three-year MYTAC) | -48 |
| Gummy shark | 1799 | 1836 | 1 | 1961 | 0 | 90 | 96 | 1 | 1774 (1 st year of a three-year MYTAC) | -62 |
| Jackass morwong | 136 | 474 | 1 | 551 | 0 | 8 | 30 | 0 | 513 (2 nd year of a three-year MYTAC) | +39 |
| John dory | 87 | 167 | 3 | 203 | 10 | 15 | 2 | 1 | 175 (3 rd year of a three-year MYTAC) | +8 |
| Mirror dory | 252 | 325 | 4 | 302 | 45 | 3 | 14 | 5 | 235 (one-year TAC) | -90 |
| Ocean perch | 169 | 190 | 4 | 283 | 42 | 15 | 34 | 2 | 190 (Three-year MYTAC extended for one year) | 0 |
| Orange roughy GAB Albany & Esperance | 0 | 50 | 1 | 0 | 0 | 0 | 0 | 0 | 50 (incidental catch TAC) | 0 |
| Orange roughy (Cascade) | 2 | 500 | 1 | 500 | 0 | 0 | 0 | 0 | 500 | 0 |
| Orange roughy (eastern) | 436 | 465 | 1 | 500 (constant catch, including Pedra Branca) | 0 | 0 | 0 | 0 | 465 (3 rd year of a three-year MYTAC) | 0 |
| Orange roughy (southern) | 57 | 35 (Pedra Branca) 31 (incidental) | 1 | See above for Pedra Branca. 0 for other | 0 | 0 | 0 | 0 | 35 (Pedra Branca) 31 (incidental) | 0 |

| Species | 2015-16 Catch (t) | 2016-17 agreed TAC (t) | Tier | 2017-18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016-17 (t) |
|---------------------------|-------------------|------------------------|------|-----------------|----------------|-------|---------|------------------------|---|-------------------------|
| | | | | | Discount | State | Discard | FIS – RCA ¹ | | |
| Orange roughy (western) | 22 | 60 | 1 | 0 | 0 | 0 | 0 | 0 | 60 (incidental catch TAC) | 0 |
| Smooth oreodory (Cascade) | 0 | 150 | 4 | 150 (TAC) | N/A | 0 | 0 | 0 | 150 (until catches reach 10t) | 0 |
| Smooth oreodory (other) | 21 | 90 | 5 | 90 | 0 | 0 | 0 | 0 | 90 (2 nd year of a three-year MYTAC) | |
| Oreodory, basket | 111 | 128 | 4 | 128 | 0 | 0 | 0 | 0 | 128 (Three-year MYTAC extended for one year) | 0 |
| Pink ling | 825 | 1144 | 1 | 1240 | 0 | 50 | 32 | 4 | 1154 (2 nd year of a three-year MYTAC) | +10 |
| Redfish | 50 | 100 | 1 | 0 | 0 | 0 | 0 | 0 | 100 (incidental catch TAC) | 0 |
| Ribaldo | 90 | 355 | 4 | 355 | 0 | 0 | 0 | 0 | 355 (Three-year MYTAC extended for one year) | 0 |
| Royal red prawn | 183 | 387 | 4 | 393 | 0 | 7 | 2 | 0 | 384 (Three-year MYTAC extended for one year) | -3 |
| Sawshark | 187 | 433 | 4 | 535 | 80 | 11 | 0 | 2 | 442 (2 nd year of a three-year MYTAC) | +9 |
| School shark | 181 | 215 | 1 | 0 | 0 | 0 | 0 | 0 | 215 (incidental catch TAC) | 0 |
| School whiting | 733 | 868 | 1 | 1660 | 0 | 619 | 55 | 0 | 986 (long-term TAC) | +118 |
| Silver trevally | 72 | 588 | 4 | 791 | 0 | 158 | 20 | 0 | 613 (Three-year MYTAC extended for one year) | +25 |

| Species | 2015-16 Catch (t) | 2016-17 agreed TAC (t) | Tier | 2017-18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016-17 (t) |
|----------------|-------------------|------------------------|------|-----------------|----------------|-------|---------|------------------------|---|-------------------------|
| | | | | | Discount | State | Discard | FIS – RCA ¹ | | |
| Silver warehou | 303 | 1209 | 1 | 605 (TAC) | 0 | 0 | 0 | 0 | 605 (large change rule; 2 nd year of a three-year MYTAC) | -604 |

1 SESSF Harvest Strategy Framework, stock assessment methods and TAC setting process

The SESSF Harvest Strategy Framework (HSF) uses harvest control rules to determine a recommended biological catch (RBC) for each quota stock in the SESSF quota management system. HSF rules are then applied to the RBCs to derive the TAC recommendations by AFMA Management.

The HSF is available on the AFMA website at <http://www.afma.gov.au/sustainability/environment/harvest-strategies/>.

2 Calculating the TAC

Step 1: Calculating a Recommended Biological Catch (RBC)

The RBCs are developed by SESSF Resource Assessment Groups (RAGs). Under the HSF, stocks are assigned to one of four tier levels depending on how much information is known about them and their economic importance to the fishery. Tier 1 stocks have the highest level of information which is used in a stock assessment model to estimate the size of the stock. Assessments for Tier 3 stocks are based on estimates of fishing mortality, Tier 4 stock assessments are based on catch per unit effort (CPUE) and Tier 5 assessments are used when only basic catch information is available. The Tier 2 level is no longer used.

Step 2: Commonwealth RBCs

For most species, the Commonwealth RBC (recommended biological catch for Commonwealth waters) is calculated by:

- applying a discount factor to RBCs for Tier 3 and Tier 4 species due to the lower level of certainty in these assessments. As a default, the RBCs are discounted by 5 per cent for Tier 3 species and 15 per cent for Tier 4 species, unless there is precaution afforded through other measures;
- subtracting discarded catch and catch taken by other sectors or jurisdictions (e.g. state and recreational sectors or scientific surveys) from the RBC.

Step 3: Total Allowable Catch (TAC)

Under the large change limiting rules, the Commonwealth TACs may be prevented from changing by large (more than 50 per cent) amounts from year to year, where this will not pose a significant risk to the sustainability of the stock.

Five species – redfish, blue warehou, gemfish (eastern), orange roughy (excluding Cascade Plateau and eastern stocks) and school shark – are subject to rebuilding strategies and incidental catch TACs. This means that there is no targeted fishing for these stocks.

3 Multi-year TACs

Most SESSF species are on multi-year TACs (MYTAC). When a MYTAC is set the RAGs develop review triggers ('breakout rules') if needed to ensure that stocks remain within acceptable risk boundaries each year and are reassessed if necessary.

4 Research catch–effort allowance

The AFMA Commission may allocate Research Catch Allowance (RCA) for research projects. The amount of RCA is determined in accordance with the AFMA Research Catch and Effort Allowance Policy and is allocated within the recommended sustainable catch of that species. Changes in amounts of research catch between fishing years may cause variations in MYTACs.

RCA for the Fishery Independent Surveys (FIS) is determined after the survey has taken place. That is, the actual FIS research catch of each quota species is deducted from the next year's TAC. There is a review trigger for this arrangement if the total catch (quota and/or non-quota species) for the FIS increases by 20 per cent above the previous total FIS catch. If the trigger is reached, catches will be reviewed with input from RAGs. During the 2014 FIS, total catch of quota species was 44 tonnes and the total catch of all species was 143.7 tonnes. During the 2016 FIS, total catch of quota species was 100.2 tonnes (an increase of 125 per cent) and the total catch of all species was 218 tonnes (an increase of 50 per cent). The South East Resource Assessment Group (SERAG) reviewed the increase in FIS catch from the 2016 survey and noted that the increase was caused by survey catch of schooling species rather than changes to survey design. The RAG had no sustainability concern with this level of FIS catch.

5 Overcatch and undercatch

Overcatch and undercatch provisions can be set to allow flexibility between fishing years. The amount of quota over caught (or under caught) in a fishing year will be subtracted from (or added to) the operator's quota allocation for that species in the following fishing year. The RAGs make recommendations to the AFMA Commission on the overcatch and undercatch amounts to be applied.

6 Alternative target reference point

TACs for most SESSF species currently reflect the target level for maximum economic yield (MEY) for that individual species by using an MEY proxy of 48 per cent of the

unfished spawning biomass. However, the objective of maximising economic returns at the fishery level may be better pursued by setting TACs for some secondary species (commercially less important and not generally targeted) with a lower biological target (e.g 40 per cent) of unfished spawning biomass.

As for previous seasons, 40 per cent targets have been applied to ocean perch, ribaldo, elephantfish, john dory and sawshark. The aim is to achieve biologically sustainable catches while not unduly restricting the ability to achieve MEY for key target species. Other secondary species may move to alternative targets in future fishing years consistent with the HSP.

7 AFMA recommendations

7.1 Alfonsino

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|---|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 0 | 1017 | 3 | 1070 | 53 | 0 | 0 | 0 | 1017 (Three-year MYTAC extended for one year) | 0 |

In 2016, South East Resource Assessment Group (SERAG) considered alfonsino which is currently in the third year of a three year MYTAC. The RAG did not have concerns with the sustainability of the stock noting the very low recent catches. The RAG recommended extending the RBC for alfonsino for 2017-18.

AFMA Management recommends a TAC for the 2017-18 fishing year of 1017 tonnes, extending the three year MYTAC for a fourth year. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.2 Bight redfish

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|---|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 180 | 800 | 1 | 797 | 0 | 0 | 0 | 0 | 800 (2 nd year of a five-year TAC) | 0 |

A new assessment was completed for bight redfish in 2015. Based on the outcomes of the assessment, GABRAG recommended an average five-year RBC of 797 tonnes. GABIA recommended a five year TAC of 800 tonnes, which was set by the AFMA Commission.

When considered by GABRAG at its meeting on 3 November 2016, bight redfish had not met any triggers to review the existing MYTAC. The RAG noted that catches were low but catch rates, while low compared to historical levels and below predicted, were increasing. Industry members noted low effort had persisted in the fishery with industry adjustment and vessel refits and repairs.

After considering available data, the RAG noted there were no concerns for the stock and recommended continuing the MYTAC.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 800 tonnes, the second year of the five year MYTAC. AFMA Management recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.3 Blue eye trevalla

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 299 | 410 | 4 | 526 | 0 | 20 | 1 | 0 | 505 (single year TAC) | +95 |

SERAG considered preliminary results from new research on the stock structure of blue eye trevalla which was expected to be published early in 2017. This work indicated that there may be some sub-structuring of the stock that warranted consideration of assessing and managing blue eye trevalla by area. This will be considered further following the publication of the research.

A discount factor is not recommended for blue eye trevalla because of the conservative estimate of the assessment. This is because the effects of orca depredation are not included in the assessment and there is protection afforded to the stock by fishing closures.

Consistent with the RAG's advice, AFMA Management recommends that the TAC be set at 505 tonnes for one fishing year (2017–18). It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.4 Blue grenadier

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|---|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 1754 | 8810 | 1 | 8810 | 0 | 0 | 0 | 45 | 8765 (Three-year MYTAC extended for one year) | -45 |

In 2016, the Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group (SESSFRAG) noted that catches of blue grenadier had remained well below the TAC. While this triggered a breakout rule (less than 70% of TAC was caught), the RAG noted that this was for commercial reasons rather than stock concerns. The RAG recommended extending the current RBC for the 2017-18 fishing year.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 8765 tonnes, extending the three year MYTAC for a fourth year. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.5 Blue warehou

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 2 | 118 | 4 | 0 | 0 | 0 | 0 | 0 | 118 (incidental catch TAC) | 0 |

Catches of blue warehou in 2015-16 were very low. Current catches, even with low recruitment, should not be impeding recovery, i.e. catch is not a limiting factor. In 2016, SERAG considered declining commercial and recreational catches as well as a contraction in the areas where blue warehou were recorded in shots. There was no information available to the RAG to suggest the stock was recovering; the RAG noted the importance of the planned project looking at declining and non-recovering stocks. The RAG recommended continuing the current incidental catch TAC.

While catches (two tonnes) are well below the current incidental bycatch TAC of 118 tonnes, there are no indications that operators are targeting blue warehou catch and current catches are not impeding recovery. To better understand the status of the blue warehou stock, it is important that any catches are reflected in data. For this reason, AFMA Management recommends that the current incidental catch TAC continue to be set at 118 tonnes with no percentage determined for overcatch or undercatch.

7.6 Deepwater flathead

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|---|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 627 | 1150 | 1 | 1128 | 0 | 0 | 0 | 0 | 1128 (1 st year of a three-year MYTAC) | -22 |

An updated stock assessment was completed for deepwater flathead in 2016.

GABRAG noted that the deepwater flathead stock was estimated to be at 45 per cent of unfished biomass, and remained above the target of 43 per cent of unfished biomass. The RAG noted that catches are currently below the RBC (roughly 50 per cent below). The RAG recommended a MYTAC of three years at 1 128 tonnes or five years at 1 115 tonnes.

GABMAC recommended a three year MYTAC, recognising the importance of the species to the fishery.

AFMA Management recommends a TAC of 1 128 tonnes for the 2017-18 fishing year, the first year of a three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.7 Deepwater shark (eastern)

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|---|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 22 | 47 | 4 | 47 | 0 | 0 | 0 | 1 | 46 (Three-year MYTAC extended for one year) | -1 |

At its meeting in August 2016, SESSFRAG recommended continuing the existing RBC until a new assessment is undertaken in 2017, noting that standardised CPUE had been declining but remained relatively flat for the last three years.

SERAG noted that there were few boats catching deepwater shark (eastern) and that a large proportion of grounds were closed. After considering CPUE and catches, the RAG recommended extending the RBC for the 2017-18 fishing year.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 47 tonnes, extending the fourth year of the existing three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.8 Deepwater shark (western)

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 68 | 215 | 4 | 263 | 0 | 0 | 0 | 0 | 215 (Three-year MYTAC extended for one year) | 0 |

SERAG noted that, following advice from industry and SEMAC, the MYTAC had been set below the RBC for three years to maintain stable catches. This was because fishing for

this species is limited by depth closures implemented to protect orange roughy. The TAC aims to promote stable catches by limiting catch out of the small open areas and maintaining markets for the species through continuity of supply.

After considering CPUE and catches, the RAG recommended extending the RBC for the 2017-18 fishing year.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 263 tonnes, continuing the fourth year of the existing three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.9 Elephant fish

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 54 | 95 | 4 | 306 | 46 | 4 | 141 | 1 | 114 (2 nd year of a three-year MYTAC) | +22 |

In 2015 SharkRAG considered an updated tier 4 assessment for elephantfish based on standardised gillnet CPUE, including discards. The RAG recommended an RBC of 306 tonnes and supported a MYTAC for three years with a discount factor of 15 per cent to be applied.

In 2016, SharkRAG noted that:

- elephant fish often constitute a non-targeted species with a large proportion of small shots (i.e. <30kg)
- gillnet catch decreased from 38t in 2013 to 31t in 2014 and 28t in 2015
- catches by trawl have remained stable at ~10 t in recent years
- standardized CPUE for gillnet exhibits a noisy but flat trend; however, the analysis ignores discarding and uses number of shots instead of net length as a unit of effort
- in the last few years, discard rates for elephant fish have been very high (higher than landings), which may imply that their CPUE is in fact increasing

The RAG noted that no breakout rules were triggered for elephant fish, and recommended the MYTAC be continued

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 114 tonnes as the second year of a three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.10 Flathead

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|---------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 2909 | 2882 | 1 | 2901 | 0 | 196 | 160 | 10 | 2535 (1st year of a three-year MYTAC) | -347 |

In 2016, SERAG adopted a new stock assessment for flathead. The assessment estimates that the stock has fluctuated around the target reference point of 40 per cent of unfished spawning biomass since around 1990 with current spawning stock biomass at 43% of unexploited stock biomass.

The RAG recommended adopting a three year RBC of 2901 tonnes. This is lower than ShelfRAG's 2013 advice for the previous three year RBC (3334 tonnes). The RAG recognised that this was mainly because the last assessment in 2013 estimated biomass to be well above target at 50 per cent of unfished spawning biomass leading to higher TACs to 'fish down' the stock to target levels. The current assessment estimates that the stock is still above target but closer to it, resulting in a lower RBC.

AFMA Management recommends a TAC for the 2017-18 fishing year of 2 535 tonnes, the first year of a three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.11 Gemfish (eastern)

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 30 | 100 | 1 | 0 | 0 | 0 | 0 | 0 | 100 (incidental catch) | 0 |

This stock has been classified as overfished since the commencement of the Bureau of Rural Sciences (BRS) – now the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) – Stock Status Reports in 1992. Gemfish (eastern) is currently listed as conservation dependent under the EPBC Act and is under a rebuilding strategy. No targeting has been permitted since 2002.

In 2016, SESSFRAG considered whether currently available data, particularly length and age data from the winter spawning run, would allow an updated stock assessment. The RAG noted there was limited new data available, and recommended postponing the assessment until a further review of available data in 2017. The RAG noted that the

proposed research project on declining and non-recovering stocks would be useful in better understanding eastern gemfish.

While a revised assessment was not undertaken, the 2008 assessment model was updated with more recent data. The updated assessment was not accepted by the RAG, however, the RAG noted that the outcome did not provide any evidence of stock rebuilding.

SERAG recommended maintaining the existing incidental catch TAC of 100 tonnes.

Consistent with RAG advice AFMA Management recommends a 100 tonnes incidental TAC with no percentage determined for overcatch or undercatch.

7.12 Gemfish (western)

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 82 | 247 | 1 | 200 | 0 | 0 | 0 | 1 | 199 (1 st year of a three-year MYTAC) | -48 |

Gemfish (western) occur within the Commonwealth Trawl Sector (CTS), the Gillnet, Hook and Trap (GHAT) and the Great Australian Bight (GAB) Trawl Sector. Gemfish (western) caught under CTS and GHAT concessions must be covered with quota, while the GAB Trawl Sector that operates in the western part of the fishery is managed under a trigger limit.

Data limitations make assessing gemfish (western) difficult. In 2016, GABRAG adopted a weight of evidence approach in recommending an RBC, considering: a Tier 1 assessment; a Tier 4 assessment (excluding discards); a Tier 4 assessment (including discards); and recent catch history. The RAG did not have concerns with the stock status and recommended an RBC of 200 tonnes for the CTS component of the stock, as presenting a low risk to the stock. The RAG recommended a three year MYTAC to allow a targeted data collection program before the next assessment.

AFMA Management recommends a TAC for gemfish (western) of 199 tonnes for the 2017-18 fishing year, the first year of a three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.13 Gummy shark

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|---------------------|---------|-----|---|-------------------------|
| | | | | Discount | State (% under MoU) | Discard | FIS | | |
| 1799 | 1836 | 1 | 1961 | 0 | 90 | 96 | 1 | 1774 (1 st year of a three-year MYTAC) | -62 |

The updated 2016 gummy shark assessment estimates that each of the three sub-stocks are above the target reference point with no evidence that stocks were ever below the management target. The 2016 assessment provided RBCs of:

- 2017-18: 2080 tonnes
- 2018-19: 1878 tonnes
- 2019-20: 1807 tonnes.

Concerns were raised by industry members that a large variation in TAC each season would be difficult for industry to adjust to. As such, the RAG requested alternative catch scenarios to be run to stabilise RBCs over a three year MYTAC period. Following consideration of these additional model outcomes, the RAG recommended either an RBC of 1961t (long term RBC) or 1921t (the average of the RBCs over 2016, 2017 and 2018 from the base case assessment). Both cases were predicted to remain above the target reference point by 2019.

AFMA Management recommends a TAC of 1774 tonnes for the 2017–18 fishing year, the first year of a three year MYTAC. AFMA Management also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.14 Jackass morwong

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 136 | 474 | 1 | 551 | 0 | 8 | 30 | 0 | 513 (2 nd year of a three-year MYTAC) | +39 |

SESSFRAG considered breakout rules for jackass morwong at its meeting in August 2016. The RAG noted that the CPUE for the eastern stock was below the 95 per cent confidence interval of CPUE predicted in the most recent assessment, triggering a review.

SESSFRAG considered that the breakout rule may have been triggered because the assessment was over estimating recent recruitment and did not recommend undertaking a

new assessment at this stage. SESSFRAG agreed that this should be another of the species considered in the proposed declining and non-recovering stock project.

AFMA Management recommends a TAC for the 2017-18 fishing year of 513 tonnes, continuing the second year of the three year MYTAC. AFMA Management also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.15 John dory

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 87 | 167 | 3 | 203 | 10 | 15 | 2 | 1 | 175 (3 rd year of a three-year MYTAC) | +8 |

In 2016, SERAG noted that catch was approximately half of the current TAC and catch rates had increased in 2015 following a decline in 2014. There was no additional information to the RAG that would provide a basis to change its previous advice regarding the RBC.

Consistent with this advice, AFMA Management recommends a TAC of 175 tonnes in the 2017-18 fishing year, continuing the third year of a three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.16 Mirror dory

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 252 | 437 | 4 | 302 | 45 | 3 | 14 | 5 | 235 (one-year TAC) | -90 |

In 2016, SERAG reviewed an updated Tier 4 assessment for mirror dory. The assessment for the eastern stock included discards in the catch and catch rate. Given the low level of discards of western stock, discards were not included in the western assessment.

For the eastern stock, recent CPUE is above the limit but below the target reference point. Both CPUE and catch levels have been declining. In the west, standardised CPUE is below target but above the limit reference point.

Consistent with its 2014 and 2015 advice, the RAG did not recommend a MYTAC because of the apparently cyclical nature of mirror dory stock size and catches. The RAG also

noted that the CPUE for the eastern stock is currently declining so it is important to respond to relatively rapid changes in biomass.

On the basis of the eastern and western Tier 4 assessment, SERAG recommended an RBC of 302 tonnes.

Consistent with SERAG advice, AFMA Management recommends the TAC for mirror dory be set at 235 tonnes for the 2017–18 fishing year. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.17 Ocean perch

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 169 | 166 | 4 | 283 | 42 | 15 | 34 | 2 | 190 (Three-year MYTAC extended for one year) | 0 |

Ocean perch is assessed as two stocks, inshore and offshore. Inshore ocean perch is defined as those catches from depths of 0 – 200 m. The inshore stock is generally regarded as a bycatch species (80 per cent discards) while the offshore stock is occasionally discarded. Catch in 2015-16 was 95 per cent of the 179 tonne TAC after the previous year's undercatch.

In 2016, after considering CPUE and current catch levels, the RAG had no concerns with the sustainability of these stocks. The RAG advised that there was low risk in extending the RBC for one year.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 190 tonnes, continuing the fourth year of the existing three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

Orange roughy – General

The 2006 *Orange Roughy Conservation Programme* has been reviewed and was replaced by the 2015 *Orange Roughy Rebuilding Strategy* (the Strategy). Under the Strategy, only stocks of orange roughy that are above the limit reference point of 20 per cent of the unfished biomass are able to targeted.

7.18 Orange roughy – GAB Albany & Esperance

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 0 | 50 | 1 | 0 | 0 | 0 | 0 | 0 | 50 (incidental catch TAC) | 0 |

GABRAG recommended maintaining the incidental catch TAC for GAB Albany & Esperance at 50 tonnes to cover incidental catch on the basis that this posed little risk to the stock.

GABRAG recommended that the Orange Roughy Research Program in the GAB trawl sector be continued in 2017-18 and that 200 tonnes of research allowance be available for this purpose as the level of research catch posed little risk to the long term recovery of the species.

Consistent with GABRAG advice, AFMA Management recommends maintaining the incidental catch TAC for orange roughy GAB Albany & Esperance at 50 tonnes with no provision for undercatch or overcatch. It also recommends an additional 200 tonnes research catch allowance be set that can be used under the Orange Roughy Research Program.

7.19 Orange roughy (Cascade Plateau)

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 2 | 500 | 1 | 500 | 0 | 0 | 0 | 0 | 500 | 0 |

There has been continuing low effort and a consequent lack of new data in relation to orange roughy (Cascade Plateau). AFMA Management recommends that the TAC be maintained at 500 tonnes for the 2016–17 fishing year. AFMA Management also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.20 Orange roughy (eastern)

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|--|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 436 | 465 | 1 | 500 (constant catch, including Pedra Branca) | 0 | 0 | 0 | 0 | 465 (3 rd year of a three-year MYTAC) | 0 |

SERAG noted that an acoustic biomass survey for orange roughy had been successfully completed during 2016 in preparation for the next stock assessment in 2017. There was no information available to the RAG that would change the previous RBC advice for the eastern stock.

AFMA Management recommends that the TAC be set at 465 tonnes for the 2016–17 fishing year, the third year of the three year constant catch MYTAC. AFMA Management also recommends that the percentage for undercatch be determined at 100 per cent and overcatch be determined at 10 per cent.

7.21 Orange roughy (southern) including Pedra Branca

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|--------------------------------------|------|------------------------------|----------------|-------|---------|-----|--------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 57 | 35 (Pedra Branca) 31 (incidental) | 1 | 512 (including eastern zone) | 0 | 0 | 0 | 0 | 35 (Pedra Branca) 31 (incidental) | 0 |

Orange roughy (southern) is on the second year of a three year MYTAC. The 2017-18 TAC consists of two components; a constant catch of 35 tonnes for the Pedra Branca area (being assessed as part of the eastern stock) and 31 tonnes for incidental catches for the remainder of the zone.

The southern zone outside of the Pedra Branca area continues to be managed under an incidental TAC and there was no additional information available to SERAG that would provide a basis for a change previous TAC advice.

The RAG noted that because there has been very limited fishing in the southern zone it would not be unreasonable to expect similar recovery in the stock as seen in the eastern zone.

AFMA Management recommends that the TAC for orange roughy (southern) be set at 66 tonnes for the 2017-18 fishing year. AFMA Management also recommends no undercatch or overcatch be determined.

7.22 Orange roughy (western)

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 22 | 60 | 1 | 0 | 0 | 0 | 0 | 0 | 60 (incidental catch TAC) | 0 |

Orange roughy (western) is subject to an incidental catch TAC of 60 tonnes.

SlopeRAG considered that the current incidental MYTAC for orange roughy (western) would allow for landing any unavoidable incidental catch and not impede the recovery of the stock. Accordingly, in 2015 SlopeRAG recommended that the 60 tonne TAC be maintained for the 2016–17 fishing year.

In 2016, there was no additional information available to SERAG that would support amending the previous SlopeRAG advice. However, the RAG noted that because there has been very limited fishing in the western zone it would not be unreasonable to expect similar recovery in the stock as seen for orange roughy in the eastern zone.

AFMA Management recommends that the TAC for orange roughy (western) be set at 60 tonnes for the 2016–17 fishing year. AFMA Management also recommends no undercatch or overcatch be determined.

7.23 Smooth oreodory – Cascade Plateau

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 0 | 150 | 4 | n/a | 0 | 0 | 0 | 0 | 150 (until catches reach 10t) | 0 |

SlopeRAG has previously advised that current low effort and catches of smooth oreodory on the Cascade Plateau meant that a Tier 4 assessment for this stock would not be reliable. The RAG recommended maintaining the TAC of 150 tonnes until catches reach at least 10 tonnes at which time the fishery would be reviewed.

SERAG noted there have been no catch of smooth oreodory – Cascade Plateau during the 2015-16 fishing year, and that this reflected the low effort on the Cascade Plateau during the fishing year.

Consistent with the RAG's advice, AFMA Management recommends that the TAC be set at 150 tonnes for the 2017-18 fishing year and the TAC only be reassessed once the 10 tonne trigger is reached. AFMA Management also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.24 Smooth oreodory – other

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|---|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 21 | 90 | 5 | 90 | 0 | 0 | 0 | 0 | 90 (2 nd year of a three-year MYTAC) | 0 |

Smooth oreodory is often caught as bycatch when targeting orange roughy. Deepwater closures have been influential on catches of this species, with most historical catch coming from areas that are now closed. However, with the opening of the Pedra Branca area to orange roughy fishing, catches of smooth oreodory increased.

In 2015, SlopeRAG noted that, due to a recent history of low catches, a Tier 4 assessment was not reliable and smooth oreodory were assessed using a Tier 5 depletion based stock reduction analysis for the first time. This led to a three year MYTAC of 90 tonnes.

After considering CPUE and current level of catch, SERAG recommended continuing the current RBC of 90 tonnes.

AFMA Management recommends a TAC for 2017-18 TAC of 90 tonnes, continuing the second year of the three year MYTAC. AFMA Management also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.25 Oreodory (basket)

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 111 | 128 | 4 | 128 | 0 | 0 | 0 | 0 | 128 (Three-year MYTAC extended for one year) | 0 |

The oreodory basket consists of spikey oreodory, warty oreodory, black oreodory and rough oreodory. The oreodory basket is currently in the third year of a three year MYTAC.

In 2016, SERAG 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.

On that basis AFMA Management recommends a TAC for the 2017-18 fishing year of 128 tonnes, continuing the fourth year of the existing three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.26 Pink ling

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 825 | 1144 | 1 | 1240 | 0 | 50 | 32 | 4 | 1154 (2 nd year of a three –year MYTAC) | +10 |

At its October 2015 meeting, SlopeRAG accepted an updated pink ling stock assessment comprising of an RBC for the western stock of 990 tonnes and an RBC for the eastern stock of 250 tonnes. The RAG noted constant catch projections suggested that catches below 550 tonnes posed low risk for the eastern stock biomass and AFMA set a notional maximum catch target for the eastern stock of 500 tonnes.

In 2016, SESSFRAG noted that the standardisation approach used in the agreed assessment was not available to assess pink ling against the modelled CPUE breakout rule. However, the RAG noted that catches had remained below the eastern RBC.

SERAG noted that the ABARES' Fishery Status Report for pink ling had changed from 'uncertain' with respect to fishing mortality to 'not subject to overfishing' (yellow-green to green-green). 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.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 1154 tonnes, continuing the second year of the existing three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.27 Redfish

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 50 | 100 | 1 | 0 | 0 | 0 | 0 | 0 | 100 (incidental catch TAC) | 0 |

In 2014 ShelfRAG accepted a Tier 1 stock assessment which predicted that the 2015 biomass of redfish would be 11 per cent, below the limit reference point of 20 per cent of unfished biomass. This meant an RBC of 0 tonnes and no targeted fishing for redfish. The RAG noted that the model predicted the stock to rebuild above the limit reference point within five years (within one mean generation time of 16.7 years) regardless of whether total mortality was 50 tonnes, 100 tonnes or 150 tonnes. However, this was based on average recruitment whereas recruitment in recent years had been below average.

In 2016, AFMA implemented the *Redfish Stock Rebuilding Strategy 2016-2021* and SERAG conducted its' annual review of redfish catch rates and biological information. After considering available data, the RAG recommended continuing the current incidental catch TAC.

Consistent with SERAG advice, AFMA Management recommends an incidental catch TAC of 100 tonnes. It also recommends that no undercatch and overcatch be determined.

7.28 Ribaldo

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 90 | 355 | 4 | 355 | 0 | 0 | 0 | 0 | 355 (Three-year MYTAC extended for one year) | 0 |

In 2016, SERAG noted that standardised CPUE for ribaldo had increased and the breakout rules had not been triggered. There was no additional information that would provide a basis for the RAG to change its previous advice.

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

AFMA Management recommends a TAC for the 2017-18 fishing year of 355 tonnes, continuing the fourth year of the existing three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.29 Royal red prawn

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017–18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 183 | 387 | 4 | 393 | 0 | 7 | 2 | 0 | 384 (Three-year MYTAC extended for one year) | -3 |

In 2016, SERAG noted that standardised CPUE for royal red prawns had increased and the breakout rules had not been triggered. On that basis, SERAG recommended extending the multi-year RBC for a fourth year.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 384 tonnes, the fourth year of a three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.30 Sawshark

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 187 | 433 | 4 | 535 | 80 | 11 | 0 | 2 | 442 (2 nd year of a three-year MYTAC) | +9 |

At its October 2016 meeting, SharkRAG noted that the breakout rule 'If total mortality (including discards, state catch and recreational catch) is lower than 50 per cent of the most recent RBC' had been triggered with total mortality in 2015 (238t) only 44 per cent of the most recent RBC (535t).

The RAG reviewed standardised CPUE for trawl (which is the index of abundance used in the Tier 4 assessment). It exhibited a noisy but flat trend, with an increase in 2014 reaching the long term average.

After considering available data, the RAG held no concerns for the stock and recommended the MYTAC be continued.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 442 tonnes, the second year of a three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.31 School shark

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016–17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 181 | 215 | 1 | 0 | 0 | 0 | 0 | 0 | 215 (incidental catch TAC) | 0 |

In 2016, SharkRAG considered available data on school shark, in particular the trawl standardised CPUE which, although from outside of the main part of the fishery and therefore uncertain as to how reliable it is as an index of abundance, shows a sustained increase. Abundance from the FIS was variable but did not give rise to concerns from the RAG.

A close kin genetics project is in progress to develop alternative and independent measures of abundance for the stock. An estimate of abundance is expected by the end of 2017 with a stock assessment to follow shortly after.

SharkRAG recommended school shark catches be restricted to a level that covers unavoidable bycatch and discards. SharkRAG considered 215 tonnes continued to be the best estimate of unavoidable bycatch including discards and recommended an incidental catch TAC of 215 tonnes for the 2017-18 fishing year.

Consistent with SharkRAG advice, AFMA Management recommends an incidental catch TAC for school shark be set at 215 tonnes for the 2017-18 fishing year with no overcatch and undercatch provision.

7.32 School whiting

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016-17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|-------------------------------------|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 733 | 868 | 1 | 1660 | 0 | 619 | 55 | 0 | 986 (long-term TAC) | +118 |

School whiting is managed under a long-term RBC of 1660 tonnes and is monitored each year against indicators for any significant risks to the stock. ShelfRAG set a long-term RBC because school whiting are short-lived and the spawning biomass is particularly sensitive to recruitment.

In 2016, SERAG noted that CPUE has been relatively flat and agreed to continue the long term RBC for school whiting. A Tier 1 assessment is planned for 2017.

AFMA Management recommends that the TAC for the 2017-18 fishing year be set at 986 tonnes. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.33 Silver trevally

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016-17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|--|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 72 | 588 | 4 | 791 | 0 | 158 | 20 | 0 | 613 (Three-year MYTAC extended for one year) | +25 |

SERAG noted that standardised CPUE for silver trevally had declined over the last five years and that state catches remained well below the 500 tonne breakout trigger.

Recognising that catches were well below the TAC, the RAG had no concerns with the sustainability of this stock and advised that there was low risk in extending the RBC for a fourth year.

On that basis, AFMA Management recommends a TAC for the 2017-18 fishing year of 613 tonnes, the fourth year of the existing three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

7.34 Silver warehou

| 2015–16 Catch (t) | 2016–17 agreed TAC (t) | Tier | 2017–18 RBC (t) | Deductions (t) | | | | AFMA 2017-18 TAC recommendation (t) | Change from 2016-17 (t) |
|-------------------|------------------------|------|-----------------|----------------|-------|---------|-----|---|-------------------------|
| | | | | Discount | State | Discard | FIS | | |
| 303 | 1209 | 1 | 600 (TAC) | 0 | 0 | 0 | 0 | 605 (large change rule; 2 nd year of a three-year MYTAC) | –604 |

At its 2015 meetings, SlopeRAG accepted an updated Tier 1 assessment for silver warehou which estimated a spawning stock biomass of 40 per cent of unfished levels and an RBC of 1958 tonnes. However, the RAG had concerns with the assessment because it assumed average recruitment whereas recent recruitment appeared to have been lower than average. For that reason, SlopeRAG recommended a MYTAC of 600 tonnes based on a low recruitment scenario.

In making this recommendation, SlopeRAG recognised the large change limiting rule would apply to step down to the 600 tonne TAC over two years with TACs of 1209 tonnes in 2016-17, 605 tonnes in 2017-18 and 600 tonnes in 2018-19.

At its August 2016 meeting, SESSFRAG noted that the most recent observed value for the standardised non-spawning CPUE for silver warehou fell outside of the 95 per cent confidence interval predicted by the most recent Tier 1 stock assessment. On that basis, the species was considered to have triggered a 'break out rule' review trigger.

Despite having broken out, SESSFRAG did not recommend an assessment for this species in 2016 because it was on a step-down TAC and it is one of the species proposed for consideration through the declining and non-recovering stocks project.

Recognising the constraints of the large change limiting rule, the RAG recommended continuing the step down to the poor recruitment scenario RBC.

On that basis, AFMA Management recommends a TAC for the 2016–17 fishing year of 605 tonnes, the second year of a three year MYTAC. It also recommends that the percentage for undercatch and overcatch be determined at 10 per cent.

Non-quota species

Section 15 of the *Southern and Eastern Scalefish and Shark Management Plan 2003* provides that AFMA may determine a TAC for non-quota species.

Boarfish and orange roughy within the East Coast Deepwater Trawl (ECDWT) Sector are the only species for which non-quota TACs are currently set. The non-quota TACs for these two species act as a trigger limit with the main management strategy being to limit targeting of boarfish and orange roughy in this sector. If catches exceed the non-quota species TACs for the fishing year the fishery (sector) will be closed.

Due to low fishing effort in the ECDWT Sector, SERAG recommended the trigger limits for these species continue at their present level of boarfish 200 tonnes and orange roughy 50 tonnes.

Consistent with the RAG advice AFMA Management recommends the TACs for ECDWT boarfish and orange roughy be maintained at previous amounts as per the table below.

| Non-quota species | Total Allowable Catch | |
|--------------------------|------------------------------|------------------------------|
| Boarfish | 200 tonnes | whole weight (trigger limit) |
| Orange roughy | 50 tonnes | whole weight (trigger limit) |