



**Australian Government**

**Australian Fisheries Management Authority**

**Southern and Eastern Scalefish and  
Shark Fishery  
Shark Resource Assessment Group  
(SharkRAG)**

**Meeting minutes**

**Date: 7 December 2017**

**Holiday Inn, Melbourne Airport**

## Attendees

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| Name                | Membership                               |
|---------------------|--|
| Mr Sandy Morison    | Chair                                    |
| Mr Robert Curtotti  | Economic member                          |
| Mr Brodie Macdonald | AFMA member                              |
| Dr Brendan Kelaher  | Scientific member                        |
| Dr Ian Knuckey      | Scientific member                        |
| Dr Robin Thomson    | Scientific member                        |
| Mr Leigh Castle     | Industry member                          |
| Mr David Stone      | Industry member                          |
| Mr Kyri Toumazos    | Industry member                          |
| Ms Anissa Lawrence  | Conservation member (via telephone)      |
| Dr Miriana Sporcic  | Invited participant – scientific (CSIRO) |
| Mr Ross Bromley     | Industry Observer                        |
| Ms Natalie Manahan  | Industry Observer                        |
| Ms Andrea Bath      | ABARES observer                          |
| Mr James Woodhams   | ABARES Observer (via telephone)          |
| Mr Ryan Keightley   | AFMA Executive officer                   |

## Meeting Minutes

### 1 Preliminaries

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#### 1.1 Introduction and apologies

The Chair opened the meeting and welcomed Members, Invited Participants and Observers, noting an apology from Dr Charlie Huveneers. Members were advised that the meeting was being recorded to assist with the preparation of the draft minutes.

#### 1.2 Adoption of Agenda

The agenda at **Attachment A** was adopted by the RAG as final, noting Mr Ross Bromley would present agenda item 7.1 in place of Mr Simon Boag.

#### 1.3 Declaration of interests

Members reviewed and updated the Declarations of Interest included at **Attachment B**.

The Chair asked participants to declare any interests in any Agenda Item to be considered by the RAG. Such interests were declared by:

- Dr Sporcic, research interests, in particular stock assessment, Ecological Risk Assessment and research priorities agenda items.
- Dr Thomson, research interests, in particular in stock assessment, close kin and research priorities agenda items.
- Robert Curtotti, research interests, in particular the research priorities agenda item
- Andrea Bath, research interests, in particular the research priorities agenda item
- James Woodhams, research interests, in particular the research priorities agenda item

- Ian Knuckey, research interests, in particular the research priorities agenda item any discussion regarding data collection and his current electronic monitoring discard and length measurement project.
- Natalie Manahan, Industry interests in most items though involvement with the Atlantis Fisheries Consulting Group, and in particular the Industry data collection proposal.
- David Stone, Industry interests in most items through his role representing gillnet and hook industry through the Sustainable Shark Fishing Industry Association.
- Kyri Toumazos, Industry interests in most items as a holder of concessions in the Southern and Eastern Scalefish and Shark Fishery (SESSF).
- Leigh Castle, Industry interests in most items as a holder of concessions in the SESSF.
- Ross Bromley, research interests as director of Girella Fisheries Services and contracted by Atlantis Fisheries Consulting Group, in particular the Industry data collection proposal.

Each participant declaring an interest left the meeting room in turn while the RAG considered their interests. In each case, the RAG noted the conflict of interest and, recognising the participant's knowledge and valuable contribution to the discussions, agreed that the participants should participate in all Agenda Items.

## 1.4 Actions arising

The RAG was updated on the status of remaining actions arising from the 2015 and 2016 meetings as per the tabled paper (**Attachment C**). Items discussed are outlined as follows:

*SharkRAG 1 2015 - Action item 9 'AFMA to trial e-monitoring length measurement protocol as soon as possible.'*

Dr Knuckey provided an update on his project relevant to, noting the project was revised to include the following objectives:

1. To establish a process for obtaining discard weight estimates from pieces counts using electronic monitoring (EM)
2. To trial the use of EM cameras as a method for collecting length frequency data on retained and discarded shark species and make recommendations for practical implementation by AFMA and Industry.

Dr Knuckey noted that he is currently in consultation with Archipelago Asia Pacific (EM provider) and AFMA regarding provisions to release EM footage for the project. He noted that the project has selected a boat and are working through confidentiality arrangements.

*SharkRAG 2 2015 – Action item 1 'AFMA to consider increasing the lower size limit of gummy shark based on Mr Pettit's comments'*

The Chair suggested this be considered in further detail under other business.

*SharkRAG 1 2016 – Action item 1 'Mr Keightley to refer RAG concerns regarding the most recent Australian sea lion report to the Commonwealth Marine Mammal Working Group'*

Dr Knuckey and Ms Lawrence noted they still have concerns with the Goldsworthy *et al* Australian sea lion report. The RAG noted that a review of the report was identified as a research priority in 2016, and the RAG should discuss this in more detail at item 7.2.

*SharkRAG 1 2016 – Action item 3 'AFMA to liaise with CSIRO on using catch by net length instead of catch by shot for all shark species CPUE.'*

Mr Toumazos noted he has concerns with historical effort data not being recorded correctly (all shots may have been recorded as 4 200m), and the RAG noted this will be an important consideration for the Gillnet CPUE standardization project supported by the AFMA Research Committee. Mr Stone noted the same concern as it is an input in current CPUE standardizations.

## 2 Updates

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### 2.1 Managers update

Mr Macdonald presented the manager's update as per the paper, with discussion as follows:

- AFMA have now confirmed the staffing structure for the new Lakes Entrance office, which will include GHAT representation.
- Electronic logbooks (e-logs) will be mandatory in the GHAT for full time boats from 1 July 2018. A letter to this effect was sent to all operators.
  - The RAG suggested AFMA consult with the e-log providers to ensure any required changes to the logbook schemas are implemented before 1 July.
  - Dr Knuckey also relayed his concerns with recording 'released alive' as a discard code. The RAG suggested that AFMA determine a more appropriate location for the released alive field outside of the discard code section. Mr Stone expressed concern that fish discarded using the 'released alive' code are considered as mortalities for assessment purposes, which should not be the case.
- AFMA are encouraged by the number of operators taking action and talking within industry following implementation of the Gillnet Dolphin Mitigation Strategy.
  - Ms Lawrence suggested fishers get together in a room to workshop mitigation ideas. Mr Macdonald noted AFMA facilitated a workshop in September 2017, however it wasn't particularly successful in identifying options. Mr Stone noted that most identified options have already been explored and fishers are hesitant to change things as practical solutions are not there yet.
  - Mr Toumazos noted that some operators who are having interactions, but are operating without triggering the maximum interaction rate, may not necessarily be proactive in reducing their interactions further, and suggested that operators should always be looking at ways to further reduce interactions.
- The AFMA Commission have considered the Eastern Tuna and Billfish Fishery Management Strategy (FMS) document, and AFMA are progressing towards developing a Southern and Eastern Scalefish and Shark Fishery FMS in 2018.
- The GHAT Management team will be working on the GHAT concession rationalisation project in 2018, which will work towards simplifying the complex access arrangements in the GHAT.
- The revised Commonwealth Harvest Strategy Policy, Bycatch Policy, and accompanying Guidelines are due to be released in early 2018
- AFMA have been discouraged that there has been some resistance from GHAT operators to carrying AFMA Observers, and requested that Industry members encourage cooperation in order to collect the required biological data. Mr Macdonald noted that if all boats were cooperative, they should only expect to have one observer trip per year.

**Action item 1** – AFMA to consult with e-log providers on whether any there are changes required to the logbook schema before 1 July 2018.

**Action item 2** – AFMA, in consultation with Dr Knuckey and CSIRO, to find a more appropriate location for the released alive field outside of the discard code section of logbooks so that the

discard reason is recorded separately from the condition of any discarded fish. AFMA to also ensure that this additional field is transferred to CSIRO with all other logbook data.

**Action item 3** – Industry members to encourage Industry cooperation with AFMA's Observer team.

## 2.2 Industry update

Mr Toumazos provided a written update as tabled, noting that fishing in 2017 has been consistent and good.

Mr Stone provided an oral update, noting the following:

- It appears the gummy shark catching pattern has changed, which could be a result of longer nets not allowing the gummy to settle. This also has an impact on fishers avoiding school shark, crab and seaweed.
- Industry are concerned that EM is being used as a compliance tool, and the program costs should be costs attributed accordingly.
- There have been times where the market is getting flooded with gummy shark as a result of fishers using longer nets, which results in the price crashing and is not economically efficient.
- Media releases by AFMA about ghost nets in northern waters are being misconstrued by the public as coming from the GHAT. Industry ask AFMA to make it clear that these nets are not from the GHAT fishery where possible.
  - Ms Lawrence also noted that there is a new best practice framework by the Global Ghost Gear Initiative to implement best practice to reduce ghost netting, which is available at <https://www.ghostgear.org/best-practice-framework>.

Mr Castle provided an oral update, noting the following:

- General shark fishing is good and consistent. Fishing in the deeper water is not as consistent, but still good.
- There appear to be a lot of small gummy shark, which is the best he has seen since 1999.
- There is a good showing of school shark, with pregnant females are turning up now.

## 2.3 ABARES update

Mr Curtotti provided an oral update as follows:

### ***ABARES Fishery Status Reports 2017***

- The ABARES Fishery Status Reports 2017 again assessed no solely Commonwealth managed stock as subject to overfishing
- Gummy shark, elephant fish and saw shark were assessed as not overfished or subject to overfishing. School shark is still considered overfished and uncertain as to whether overfishing is occurring.

### ***Fish surveys economics***

- The GHAT is showing a good improvement of Net Economic Returns (NER)
- There will be interest in next year's survey as to whether the removal of net length restrictions will show an impact on NER, noting that, generally, giving fishers more flexibility is good for NER
- GVP in the GHAT has increased by approximately 5 million over the last few years, which can be mostly attributed to landing more of the gummy shark TAC

## 3 CPUE Standardizations

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### 3.1 CPUE Standardizations and breakout rules review

Dr Sporcic presented catch-per-unit effort (CPUE) standardizations for the shark species. It was noted that there are new diagnostics in the report that may be of interest to members.

The RAG discussed whether Great Australian Bight (GAB) Trawl catches should be included in CPUE standardizations, as they are deducted off quota. The RAG agreed to include GAB catches within the 'trawl' CPUE series.

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| <b>Action item 4</b> – Dr Sporcic to include GAB trawl in the 'trawl' CPUE series for the shark species. |
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#### Gummy shark

- There has been an increase in reported gillnet catches of gummy shark and standardized CPUE in South Australia and Bass Strait since 2015.
- Gillnet CPUE around Tasmania has remained flat since 2014 and increasing to the long term average in 2016.
- Trawl CPUE have increased steadily since 2012, remaining above the long-term average.
- Bottom line CPUE have remained flat and noisy since 2012.

The RAG discussed the gummy shark breakout rules adopted by SharkRAG in 2016. The RAG noted that the three assessment regions reflected in the first rule do not reflect actual stock structure, however are appropriate to consider for the purposes of the breakout rule. The RAG noted it is important that stock status is considered on the whole fishery level, not at the three assessment region level.

After consideration, the RAG noted that no breakout rules were triggered for gummy shark and recommended the MYTAC be continued.

Mr Macdonald noted that SESSFRAG have developed a new decision tree approach for dealing with breakout rules. This was adopted by SESSFRAG as an alternative to species specific rules (more general, less prescriptive). SharkRAG agreed to adopt the decision process, through SESSFRAG, in future.

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| <b>Action item 5</b> – AFMA to upload the SESSFRAG breakout rule decision tree to Govdex. |
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#### School shark

- Trawl catches of school shark do not appear to be targeted (large proportion of < 30 kg shots in logbook data).
- Spatially catches have not changed greatly and yet the CPUE has continued to increase, with the exception of 2014. This is a positive sign, which when combined with the observation of increased proportions of smaller school sharks is evidence of school sharks showing some signs of recovery.

#### Elephant fish

- There is a large proportion of small shots (i.e. <30 kg) indicating that elephant fish are a non-targeted species.
- Gillnet standardized CPUE is flat and noisy, while decreased in 2015, increased in 2016.
- The analysis ignores discarding and uses number of shots instead of net length as a unit of effort. In recent years discard rates for elephant fish have been very high, which may imply that CPUE is in fact increasing.

## Saw shark

- As with school shark and elephant fish, there is a large proportion of small shots (i.e. <30 kg) that indicate saw shark are a non-targeted species.
- Standardized CPUE for gillnets exhibits a steady decline since about 2001, with small increases in recent years.
- Trawl caught saw shark standardized indices exhibit a noisy but flat trend, with an increase in 2014 reaching the long term average and an overall decrease below the long term average in 2016.
- Danish seine standardized CPUE (which has the highest proportion of shots <30 kg among methods) has been flat since 2006 and increased above the long-term average in 2015.

Mr Stone noted that market price is the primary reason that operators do not target or land elephant fish and saw shark.

## 4 Tier 4 assessments and RBC recommendations

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### 4.1 Saw shark

Dr Sporic presented the tier 4 assessment for saw shark, noting that in 2015 the RAG adopted the model using trawl CPUE, not including discards, as the primary indicator of abundance. Discards were not included as there were many small shots and they were relatively stable.

Mr Woodhams questioned whether the RAG is comfortable that trawl CPUE is still an appropriate measure of abundance. The RAG noted that it is the best indicator available for the species as it is not targeted and cannot be avoided by trawl.

The assessment included state catch of 11.5 tonnes and had a target reference point set at 40 per cent of unfished biomass. The RAG questioned why the standardised CPUE in the reference period is higher than the target reference point. Dr Sporic confirmed this is correct as it reflects the difference between the target reference point of 40 per cent of unfished biomass and the assumed level for the reference period at 48 per cent.

The RAG noted that CPUE is well above the target reference point and has been historically. As such, the RAG accepted the resulting RBC of 519 tonnes. The RAG also supported using a multi-year TAC, set using the RBC level of 519 tonnes, for three years. The RAG accepted a discount factor of 15 per cent and undercatch and overcatch provisions up to 10 per cent.

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| <b>Action item 6</b> – Dr Sporic to update the captions in the Tier 4 Assessment document to reduce ambiguity. |
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### 4.2 Elephant fish

Dr Sporic presented the elephant fish tier 4 assessment for 2017, noting that in 2015 the RAG accepted a model using gillnet CPUE, including discards (using the average discards from 2011-14 for all years prior to 2011) as the primary indicator of abundance.

The RAG noted that there was no discard estimate for 2016, so the 2015 rate was used as it was accepted through SESSFRAG. The Chair asked Industry members whether they had any insight into discard rates for 2016 compared to 2015. The Industry members said they would have been similar as the market has not changed.

The RAG discussed the model and noted that the two most recent data points are very high due to the high rate of discards. Dr Thomson noted that including discards compromises the CPUE series

as there are issues with accounting for high levels of shots that are 100% discarded. As such, the RAG discussed whether the assessment including discards was still a reliable index of abundance.

The Chair stated that there are similar issues for SERAG assessed species (e.g. ocean perch), and suggested there will need to be some discussion at SESSFRAG to deal with this issue in the next 12 months.

The RAG agreed they are no longer confident with the previously accepted model including discards. As such, the RAG recommended the assessment be rerun without discards, with a target reference point of 40 per cent of unfished biomass and including recreational catch estimates.

Industry members suggested that elephant fish should not be managed under quota as the species is not going to be targeted and it is low value. Mr Stone noted that any reduction in the TAC was counterproductive and would only result in increased discarding as the market price was not capable of supporting the lease fee. Mr Toumazos suggested that the RAG set a precautionary long term RBC and recommend this be reflected as a long term TAC as the TAC level does not influence landings.

**Action item 7** – Dr Sporcic to rerun the elephant fish Tier 4 Assessment without discards, with a target reference point of 40 per cent of unfished biomass and including recreational catch estimates, for consideration by SharkRAG at its next meeting.

**Action item 8** – Refer the issue to SESSFRAG for it to consider how to deal with CPUE for species with high levels of discarding (large proportion of 100% discarded shots).

## 5 School shark

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### 5.1 School shark rebuilding strategy annual review

Mr Macdonald presented the school shark rebuilding strategy annual review paper. The RAG questioned the change in length collection targets from 2015 to 2016. Mr Macdonald noted that was informed by the GHAT data plan which revised collection targets to the necessary minimum targets for an assessment.

The RAG discussed that some vessels in the paper show consistently high landings of school shark, and questioned whether there has been any action from AFMA for potential targeting. Mr Stone outlined his concern with these vessels, stating that this could only happen under quota pooling arrangements, avoiding the 20 per cent ratio at the vessel level which is against the principle of unavoidable catch. Mr Macdonald noted that there have been no fishers who have breached the 20 per cent ratio recently, noting the ratio applies at the concession holder level, not the vessel level. He further noted however that some operators have been referred to compliance for allegedly not releasing live school shark. The Chair suggested that if there is clear targeting, there may be a need to review the incidental catch TAC, noting that the TAC will be discussed at the February 2018 meeting.

**Action item 9** – AFMA to investigate potential targeting of school shark.

**Action item 10** – AFMA to include gummy shark catch next to school shark catch in the next 'school shark catches by vessel' table to give an indication of boat level ratio.

### 5.2 Close kin update

Dr Thomson presented an update on the close kin project, noting the following:

- The project has collected 3000 samples, which was above the contracted target of 2000.
- So far 1615 samples have been sequenced and returned, the other 1385 samples are currently being sequenced and will be returned in March 2018.
- Of the 1615 samples, approximately 550 were males and 1050 females, noting there is some uncertainty with sexing some samples using the age markers identified previously
- Sex identification is needed for population model and for close kin probabilities as male and female fecundity differs.
- There is only preliminary aging data for half of the samples, so are still waiting for final, and remaining age data.
- From the samples sequenced so far, there are 18 parent-offspring pairs (POPs)/full sibling pairs (FSPs), and 11 half sibling pairs (HSP) identified. POPs and FSPs are confounded so require age data to verify which is which.
- Mitochondrial DNA is now being extracted in order to distinguish which HSPs share a mother/father.

### 5.3 Preparation for 2018 Tier 1 assessment incorporating close kin

Dr Thomson presented an update on the assessment and mini-model using close kin, noting the following:

- the aim is to present a mini-model based off only close kin data (no CPUE data) at the February SharkRAG meeting, which will provide an absolute index of abundance, but will likely not be robust enough to set a TAC.
- once we have the close kin and aging data fully processed and ready, we will be able to update the Tier 1 Stock Assessment in time for the late 2018 SharkRAG meetings.

Mr Toumazos noted that we may not have a robust assessment to set a TAC, about which Industry is very concerned as they have been expecting a result for the 2018-19 fishing season. He recommended that CSIRO and AFMA ensure this possibility is communicated to Industry as soon as possible, including a revised timeframe. The RAG was informed that the project had taken one year longer than expected, noting that this is cutting edge science which could be ground-breaking.

Dr Knuckey suggested that with the estimate of absolute abundance, noting there is likely to be large CVs, there may be sufficient information to allow the RAG to provide advice on what level of fishing mortality may be acceptable to inform management for the 2018-19 fishing season at February SharkRAG meeting.

**Action item 11** – AFMA to write to concession holders advising of an updated timeline for close kin results, the mini assessment and subsequent updated tier 1 assessment.

Dr Thomson explained that the updated tier 1 assessment will use gillnet CPUE as the index of abundance to 1995, then use close kin as the primary index of abundance from then on. The work required to update the assessment will involve:

- incorporating close kin (pairs and sample data)
- new landings and discard data
- new length frequencies
- old length frequencies (not just mean length)
- age data
- any lessons learned from 'mini-model'.

The assessment will then calculate an updated estimate of stock status, revised rebuilding timeframes (if the stock remains below the target reference point), and a recommended biological catch (which will remain at zero unless the stock is above the limit reference point).

## 6 Ecological Risk Assessment

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### 6.1 Gillnet – Ecological risk assessment species list

Mr Keightley and Dr Sporcic presented the ecological risk assessment (ERA) species list populated by AFMA for the gillnet sector.

Mr Keightley explained that AFMA are seeking RAG advice, for the purpose of conducting an ERA for the gillnet sector, on:

- a) the most appropriate classifications of species (primary, secondary, byproduct, bycatch and protected) for gillnet.
- b) which undifferentiated species groups should be kept or removed from the list.

The RAG noted the principles adopted by SERAG at its November meeting as outlined in the paper, and agreed to adopt the same principles. In addition, the RAG also recommended revising the species classifications based on their contribution to the gross value production (GVP) in the SESSF, noting that under the SESSF Harvest Strategy, most species are managed to a Maximum Economic Yield reference point.

**Action item 12** – AFMA to revise the gillnet ERA species list classifications based on their contribution to GVP.

Mr Keightley advised the RAG that an ERA for shark hook sector will also be undertaken in 2018, and the RAG agreed the same principles should apply to that sub sectors species list.

## 7 Data and research

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### 7.1 Industry data collection proposal

Mr Bromley presented the agenda item, and noted that the proposal includes collecting information in the GHAT for both finfish (pink ling, blue eye trevalla and ribaldo) and shark (gummy and school shark). Mr Bromley outlined the following:

- When EM was introduced in the GHAT, it was envisaged that port sampling would be sufficient to collect biological information to inform stock assessments.
- Upon review, it was realised that this biological collection was not successful, and AFMA Observers have been reintroduced to fill this gap. This comes at additional cost to EM.
- The Southern Shark Industry Alliance have developed a proposal to coordinate the collection of biological information through Industry. This proposal estimates savings of \$336 000 over three years if adopted in place of AFMA Observers.
- The proposal intends to collect the biological information as outlined the GHAT Data and Assessment Plan, and relies on Industry collecting the data at sea and in port, organised by a shore based Data Collection Manager.

Mr Bromley outlined the proposed methodology, and AFMA requested the RAG provide:

- comment on the methodology; and
- advice on the risks of replacing AFMA observers with the Industry proposal in 2018-19.

The RAG suggested there could be improvements made to ensure representativeness, noting that the proposed 'first over the roller' methodology may not be sufficient. The RAG suggested that the sampling would be more representative with a bigger spread across boats within the defined periods and zones (e.g. fewer samples per boat, but more boats sampled).

Dr Knuckey also asked how the proposal intends to sample weights of discarded fish. Mr Bromley stated that the proposal would be encouraging the skippers to record the length and sex of discarded fish. The RAG suggested that discards need to be considered further in the proposal.

The RAG advised that there is merit in a phase-in period for crew based regimes as it can take a while for them to get it right, and suggested there needs to be overlap with AFMA Observers and the Industry proposal, noting it will come at a cost. The RAG agreed that while a phase-in period reduces the savings for industry, it applies a necessary level of audit and helps solve issues in that period.

The RAG also noted:

- the data plan collection targets are absolute minimum required for assessments
- the sampling regime should be designed to become routine for crew
- there may be other necessary data the AFMA observers are collecting that are not included in the industry proposal that need to be addressed
- collecting discard information is important
- providing the collected data to AFMA and CSIRO regularly will be important to iron out any issues early on.

Mr Toumazos outlined his experience with the South Australian Rock Lobster e-log system, stating that is good model as it also allows for crew based data collection in an electronic format.

The Chair summarised, stating there is good support for the proposal, noting the comments from the RAG around representativeness and a phase in period.

## **7.2 2019-20 GHAT research priorities**

The RAG briefly discussed this item, however suggested it be carried over to the next meeting to ensure that there is sufficient time to consider and identify priorities for the fishery.

# **8 Other business and close of meeting**

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## **8.1 Other business**

The RAG discussed the *SharkRAG 2 2015 – Action item 1 'AFMA to consider increasing the lower size limit of gummy shark based on Mr Pettit's comments'*. Mr Keightley explained this item was postponed in 2016 pending the results of projections from the gummy shark stock assessment. The Industry members noted that at this stage, there is no Industry desire to remove or change the size limits. The RAG agreed to mark this item as complete with no further action, noting Industry's comments and the gummy shark stock assessment projections showing that a broader selectivity would reduce the long term yield for gummy shark.

## **8.2 Review of action items, next meeting and close**

Mr Keightley confirmed the actions arising from the meeting, as per table 1.

**Table 1: Actions arising from SharkRAG 1 2017.**

| Action | Agenda item | Description   | Responsibility   |
|--------|-------------|---|------------------|
| 1      | 2.1         | AFMA to consult with e-log providers on whether any there are changes required to the logbook schema before 1 July 2018.  | AFMA Member      |
| 2      | 2.1         | AFMA, in consultation with Dr Knuckey and CSIRO, to find a more appropriate location for the released alive field outside of the discard code section of logbooks so that the discard reason is recorded separately from the condition of any discarded fish. AFMA to also ensure that this additional field is transferred to CSIRO with all other logbook data. | AFMA Member      |
| 3      | 2.1         | Industry members to encourage Industry cooperation with AFMA's Observer team.   | Industry Members |
| 4      | 3.1         | Dr Sporcic to include GAB trawl in the 'trawl' CPUE series for the shark species.   | Dr Sporcic       |
| 5      | 3.1         | AFMA to upload the SESSFRAG breakout rule decision tree to the SharkRAG Govdex site.  | AFMA Member      |
| 6      | 4           | Dr Sporcic to update the captions in the Tier 4 Assessment document to reduce ambiguity.  | Dr Sporcic       |
| 7      | 4.2         | Dr Sporcic to rerun the elephant fish Tier 4 Assessment without discards, with a target reference point of 40 per cent of unfished biomass and including recreational catch estimates, for consideration by SharkRAG at its next meeting.   | Dr Sporcic       |
| 8      | 4.2         | Refer the issue to SESSFRAG for it to consider how to deal with CPUE for species with high levels of discarding (large proportion of 100% discarded shots).   | SESSFRAG         |
| 9      | 5.1         | AFMA to investigate potential targeting of school shark.  | AFMA member      |
| 10     | 5.1         | AFMA to include gummy shark catch next to school shark catch in the next 'school shark catches by vessel' table to give an indication of boat level ratio.  | AFMA member      |
| 11     | 5.2         | AFMA to write to concession holders advising of an updated timeline for close kin results, the mini assessment and subsequent updated tier 1 assessment.  | AFMA member      |
| 12     | 6.1         | AFMA to revise the gillnet ERA species list classifications based on their contribution to GVP.   | AFMA member      |

The Chair thanked participants for their attendance and valuable input and closed the meeting, noting that Mr Keightley would send out a poll to determine member's availability for the SharkRAG February 2018 meeting.

**Signed (Chairperson):** Alexander Morison

*Alison*

**Date:**

18 Jan 2018

## Attachments

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**Attachment A:** SharkRAG 1 2017 final agenda

**Attachment B:** Declarations of interest

**Attachment C:** Action item status

## Attachment A – Agenda

### Shark Resource Assessment Group (SharkRAG) Meeting 1 2017

#### Draft Agenda

7 December 2017 – Holiday Inn Melbourne Airport

| Item no. | Item Description   | Person responsible | Time           |
|----------|--|--------------------|----------------|
| <b>1</b> | <b>Preliminaries</b>   |                    | <b>8:30am</b>  |
| 1.1      | Welcome and apologies  | Chair              | Information    |
| 1.2      | Acceptance of agenda   | Chair              | Action         |
| 1.3      | Declarations of interest                                       | Chair              | Action         |
| 1.4      | Status of actions arising                                      | AFMA               | Action         |
| <b>2</b> | <b>Updates</b>   |                    | <b>9:15am</b>  |
| 2.1      | Managers update  | AFMA member        | Information    |
| 2.2      | Industry updates   | Industry members   | Information    |
| 2.3      | ABARES update  | ABARES member      | Information    |
| <b>3</b> | <b>CPUE Standardizations</b>                                   |                    | <b>10:00am</b> |
| 3.1      | CPUE Standardizations and breakout rules                       | CSIRO              | Discussion     |
|          | <b>Morning tea</b>   |                    | <b>10:15am</b> |
| <b>4</b> | <b>Tier 4 assessments</b>                                      |                    | <b>10:30am</b> |
| 4.1      | Sawshark   | CSIRO              | Discussion     |
| 4.2      | Elephant fish  | CSIRO              | Discussion     |
| <b>5</b> | <b>School shark</b>  |                    | <b>11:15am</b> |
| 5.1      | School shark rebuilding strategy annual review                 | AFMA member        | Discussion     |
| 5.2      | Close kin update   | CSIRO              | Discussion     |
|          | <b>Lunch</b>   |                    | <b>12:30pm</b> |
|          | <b>School shark continued</b>                                  |                    | <b>1:00pm</b>  |
| 5.3      | Preparation for 2018 Tier 1 assessment incorporating close kin | CSIRO              | Discussion     |
| <b>6</b> | <b>Ecological Risk Assessment</b>                              |                    | <b>2:30pm</b>  |
| 6.1      | Gillnet – Ecological Risk Assessment                           | Dr Sporcic         | Discussion     |
|          | <b>Afternoon tea</b>   |                    | <b>3:30 pm</b> |
| <b>7</b> | <b>Data and research</b>                                       |                    | <b>3:45pm</b>  |
| 7.1      | Industry data collection proposal                              | Mr Boag            | Discussion     |
| 7.2      | 2019-20 GHAT research priorities                               | AFMA member        | Discussion     |
| <b>8</b> | <b>Other business and close of meeting</b>                     |                    | <b>5:15pm</b>  |
| 8.1      | Review of meeting action items, next meeting and close         | EO/Chair           | Discussion     |

## Attachment B – Register of interests

| Member            | Interest declared  |
|-------------------|--|
| Sandy Morison     | <p>Director of Morison Aquatic Sciences.</p> <p>Chair of SharkRAG, SERAG and the Tropical Rock Lobster Working Group.</p> <p>Scientific member on SEMAC.</p> <p>Contracted by government departments, non-government agencies and companies for a range of fishery related matters including research and (by SCS Global Services) for MSC assessments of AFMA managed and other Australian and international fisheries.</p> <p>No pecuniary or other interest in the SESSF.</p> |
| Brendan Kelaher   | <p>Scallop Resource Assessment Group Chair and Scallop Management Advisory Committee member. No other interests declared.</p>  |
| Robin Thomson     | <p>CSIRO, Assessment scientist. Acquiring funding for research purposes. PI on data services contract and close kin project for school shark.</p>  |
| Charlie Huveneers | <p>Senior lecturer and research scientist. Potential interest in funding for research. No pecuniary interest or otherwise.</p>   |
| Ian Knuckey       | <p>Director Fishwell Consulting Pty Ltd.</p> <p>Involved in SESSF and GAB Fishery Independent Survey (FIS).</p> <p>Range of research interests in relation to South East fisheries including the GHAT, GABTF, SESSF and auto-longline sector.</p> <p>Agent for Olfish Electronic Logbooks</p> <p>NPF RAG Chair, Scientific member on NORMAC. Provides research advice to various industry associations: SETFIA, GABIA and SSIA.</p>  |
| David Stone       | <p>Executive Officer for Sustainable Shark Fishing Industry Inc. Declared interests in representing hook and gillnet industry member interests and in pursuing research for dolphin acoustic mitigation technology, and has a proposal to FRDC seeking funding. SESSFRAG observer. Declared interest in RBCs.</p>  |
| Leigh Castle      | <p>Tasmanian shark hook, scalefish hook and tuna minor line fisher. Owns SESSF quota and vessel statutory fishing rights. Has a declared interest in shark hook interests and RBC recommendations.</p>   |
| Kyri Toumazos     | <p>South Australia/Bass Strait shark fisher, boats fishing with hooks and gillnets. SESSF quota holder. Southern Rock Lobster Board CEO. Declared interests in RBCs.</p>   |
| Anissa Lawrence   | <p>Independent consultant. Director of TierraMar consulting.</p>   |

|                            |   |
|----------------------------|---|
|                            | <p>Conservation member on SEMAC.</p> <p>Undertakes environmental work with Southern Shark Industry Alliance on an ad-hoc basis. Undertakes contracts for a number of Conservation NGOs, government departments, non-government agencies on a range of fishery related matters. Provides environmental advice to industry associations. No pecuniary interest.</p> <p>President of the SEA LIFE Trust (ANZ).</p> <p>Director of FISHI International.</p> |
| Robert Curtotti            | No interests, pecuniary or otherwise.   |
| Brodie Macdonald           | AFMA member. No interest pecuniary or otherwise.  |
| Ryan Keightley             | AFMA EO. No interest pecuniary or otherwise.  |
| <b>Invited Participant</b> | <b>Interest declared</b>  |
| Miriana Sporcic            | CSIRO, Assessment scientist. A general interest in acquiring funding for research purposes. No interest, pecuniary or otherwise.  |
| <b>Observers</b>           | <b>Interest declared</b>  |
| James Woodhams             | No interests, pecuniary or otherwise.   |
| Ross Bromley               | Undertakes contracts as an independent consultant.  |
| Natalie Manahan            | Research Assistant, Atlantis Fisheries Consulting Group.  |

## Attachment C – Status of actions

### Agenda item 1.4      Actions

**Purpose:** To inform the RAG of the action taken with respect to business arising from previous SharkRAG meetings.

#### SharkRAG 1 2015

| No | Action item   | Member to action | Status  |
|----|---|------------------|---|
| 9  | AFMA to trial e-monitoring length measurement protocol as soon as possible. | AFMA             | <b>In progress</b> – Fishwell consulting have commenced a project that is trialling the use of EM as a method for collecting length frequency data. Ian Knuckey to provide an update of the project at the meeting. |

#### SharkRAG 2 2015

| No | Action item  | Member to action | Status   |
|----|--|------------------|--|
| 1  | AFMA to consider increasing the lower size limit of gummy shark based on Mr Pettit's comments. | AFMA             | <p><b>To discuss</b> – The RAG postponed consideration of this item until the gummy shark stock assessment projection showing the impact using scalefish hook selectivity for all catch was available. This item was not discussed in 2016,.</p> <p>The results of the impact of using scalefish hook selectivity for all catch of gummy shark (worst case scenario) were presented to the RAG for consideration for this action item.</p> |

### SharkRAG 1 2016

| No | Action item   | Member to action | Status  |
|----|---|------------------|---|
| 1  | Mr Keightley to refer RAG concerns regarding the most recent Australian sea lion report to the Commonwealth Marine Mammal Working Group (CMMWG) | Mr Keightley     | <b>Complete</b> – AFMA relayed these concerns to the CMMWG in 2016. This was discussed and Dr Goldsworthy presented at CFMMWG Meeting No 2 in June 2017. The minutes from this meeting can be found on the AFMA website at <a href="http://www.afma.gov.au/fisheries/committees/">http://www.afma.gov.au/fisheries/committees/</a> .  |
| 3  | AFMA to liaise with CSIRO on using catch by net length instead of catch by shot for all shark species CPUE.                                     | Mr Keightley     | <b>In progress</b> – The RAG recommended that catch by net length should be adopted as soon as possible for CPUE standardisations. This was included as a priority in the SSSF 2018-19 research plan and was supported for potential AFMA research funding in 2018-19. This project is included in the ARC's November 2017 call for applications at <a href="http://www.afma.gov.au/afma-research-committee-2018-call-research/">http://www.afma.gov.au/afma-research-committee-2018-call-research/</a> . |

### SharkRAG 2 2016

| No | Action item  | Member to action           | Status   |
|----|--|----------------------------|--|
| 1  | For the next gummy shark assessment, the assessment scientist to investigate estimating selectivity separately for the three regional stocks and allowing it to be flexible in form. This may allow the differing availability function to be removed from the assessment. | CSIRO Assessment Scientist | <b>Ongoing</b> – to be actioned for the 2019 stock assessment. |
| 2  | For the next gummy shark assessment, SharkRAG to review how density dependence is incorporated in the model including in the context of the paper 'Population biology and dynamics of the gummy harvested off southern Australia' (Walker 2010).                           | CSIRO, SharkRAG            | <b>Ongoing</b> – to be actioned for the 2019 stock assessment. |

| No | Action item  | Member to action | Status   |
|----|--|------------------|--|
| 3  | The School Shark Rebuilding Strategy to be updated to reflect research showing there is some genetic connectivity between Australian and New Zealand school shark stocks.  | AFMA             | <b>Ongoing</b> – AFMA will update the School Shark Rebuilding Strategy following the results of the Close Kin Project and subsequent stock assessment.   |
| 4  | AFMA to prepare a paper, developed in consultation with stock assessment scientists, outlining updated data needs for the GHAT and preferred, cost effective options, to obtain the data. Following circulation of this paper, the RAG to meet for a one day workshop with any other appropriate participants. | AFMA             | <b>Complete</b> – AFMA held a GHAT Data Working Group in March 2017. The meeting record from the workshop is available on <a href="#">AFMAs website</a> . The workshop recommended, in the short term, that observers be placed on boats to collect biological data as confirmed in the <a href="#">GHAT Data and Assessment Plan</a> . Industry are currently developing an alternative crew based sampling regime to replace on board observers if cost effective. |

#### GHAT Data Working Group March 2017

| No | Action item  | Member to action | Status   |
|----|--|------------------|--|
| 1  | David Stone/Les Scott to develop and trial proposals for industry based data collection programs in the gillnet and longline fisheries. Any proposal for an alternative data collection program should provide evidence of an ability to collect the requisite biological (length/frequency, sex and/or otolith/vertebrae) data. | Industry         | <b>In progress</b> – AFMA have received a draft Industry based sampling regime from the Southern Shark Industry Alliance. To be discussed at item 6.1. |
| 2  | Robin Thomson to investigate the statistical implications of conducting biennial collection of biological data for the GHAT (subject to funding).  | Robin Thomson    | <b>Ongoing</b> – potentially a reasonably large simulation study/MSE and may require funding. To be discussed at item 6.2.                             |

| No | Action item   | Member to action    | Status   |
|----|---|---------------------|--|
| 3  | Ian Knuckey to consider expanding his current funding EOI to include a preliminary investigation into the use of EM cameras as a method for collecting length/frequency data. | Fishwell Consulting | <p><b>Complete</b> – Fishwell consulting expanded their project scope to include the following objectives:</p> <p>1: To establish a process for obtaining discard weight estimates from pieces counts using EM</p> <p>2: To trial the use of EM cameras as a method for collecting length frequency data on retained and discarded shark species and make recommendations for practical implementation by AFMA and Industry.</p> |