



Australian Government

Australian Fisheries Management Authority

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

Meeting minutes

Date: 7 December 2016

Teleconference

Attendees

Name	Membership
Mr Sandy Morison	Chair
Mr Robert Curtotti	Economic member
Mr Brodie Macdonald	AFMA member
Dr Brendan Kelaher	Scientific member
Dr Charlie Huveneers	Scientific member
Mr David Stone	Industry member
Mr Kyri Toumazos	Industry member
Dr Miriana Sporic	Invited participant – scientific (CSIRO)
Ms Giverny Rodgers	AFMA observer
Mr Ryan Keightley	Executive officer

Meeting Minutes

1 Preliminaries

1.1 Introduction and apologies

The Chair opened the meeting and welcomed participants, noting apologies from Mr Leigh Castle, Dr Ian Knuckey, Dr Robin Thomson and Ms Anissa Lawrence. 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.

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:

- David Stone, Executive Officer for the Sustainable Shark Fishing Industry Association, representing hook and gillnet industry members, in relation to Agenda Item 2
- Kyri Toumazos, holder of concessions in the Southern and Eastern Scalefish and Shark Fishery (SESSF), in relation to Agenda Item 2.

Both participants left the teleconference 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 member should participate in the discussion and recommendations for all Agenda Items.

2 Recommended Biological Catch (RBC) recommendations

2.1 Gummy shark

The Chair introduced the item noting the gummy shark assessment report was revised following the RAG's request for new projections at its November meeting. The Chair noted the new projections, as follows:

- Case 7: Total catch = 2052 t; split by region and gear according to 2015 catch. This was requested to project the outcome of continuing the current total allowable catch of 1836 t.
- Case 8: Total catch = 1961t; split by region and gear according to 2015 catch. This was requested to project the outcome of the long term RBC as per the assessment model.
- Case 9: Total catch = 1922t; split by region and gear according to 2015 catch. This was requested to project the outcome of the average of the 2016, 2017 and 2018 RBCs as per the reference case model.

The Chair reminded the RAG that the projections were requested in order for the RAG to provide a recommendation for a multi-year total allowable catch (MYTAC), noting the pup production scenarios for 2019 would represent the stock status at the end of a three year MYTAC.

The RAG noted that under each of the three projections, the Bass Strait region would fall below the target reference point by 2021. The Chair explained the projected depletion in Bass Strait in these scenarios is based off the 2015 catch proportions continuing. Such assumption is different to the base-case and cases 2–6 where the proportion of catches varies between regions.

The RAG agreed that, compared to the additional projections requested, the reference case model RBCs would be the most likely to keep all sub-stocks above target levels over the next three years. The implied TACs, however, would not be stable, resulting in an increase in TAC in the first year, then a significant step down in TAC. The RAG members were concerned that this could lead to higher short term catches with a potential increase in effort to the Bass Strait, followed by a large drop in TAC. Mr Curtotti also noted the reference case leaves the stock above the target reference point, which is not ideal from an economic perspective.

The RAG established that case 7 was not suitable for a three year MYTAC as the Bass Strait region would fall below the target reference point by 2019.

The RAG agreed that cases 8 and 9 were acceptable from a biological perspective (in that all three sub-stocks were projected to remain above target levels through to 2019) provided that only a 3 year MYTAC was applied, and would be preferable to Industry from a stability perspective. It was noted that both cases assume the catch would remain at the 2015 proportions which was particularly high in the Bass Strait. The RAG emphasised that under these cases there would be short term stability for Industry, however a new assessment in 2019 would likely to result in a lower RBC following fishing down to the target reference point.

The RAG asked Mr Curtotti on whether there would be more preference for either case from an economic sense. Mr Curtotti noted that if the price of gummy shark stays relatively constant, then there would be little difference so long as the stock is fished to, and remains around, the target reference point.

Considering the options, the RAG recommended a three year MYTAC using either of the following, with a preference for either case 8 or 9:

Reference case	2080 t, 1878 t, then 1807 t
Case 8	1961 t
Case 9	1922 t

The RAG recommended undercatch and overcatch provisions of 10 per cent, and recommended the following triggers for review of a MYTAC:

- If annual catches in any regional sub-stock exceed the long term RBC for that region (1098 t in Bass Strait, 650 t in South Australia or 213 t in Tasmania) by more than 20 per cent.
- If gummy shark catches in the SESSF fall below 1200 t.
- Standardized gillnet CPUE value for Bass Strait approaches historical lows (falls below the 10th percentile of the historical values for Bass Strait). Historical period being from 1997 to 2013 (Bass Strait is used because South Australian CPUE is no longer used in the assessment and Tasmania is in a fish down period with the stock above target).

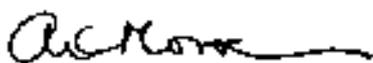
The AFMA member noted that an updated gummy shark species summary would be updated based on the RAGs comments and attached to the meeting minutes. The updated species summary is at **Attachment C**.

The RAG further agreed that in future the stock assessment scientist who undertakes the stock assessment must be present at the RAG meetings.

3 Other business and close of meeting

The Chair thanked participants for their attendance and thanked Mr Keightley for his work while acting as AFMA Manager for the 2016 RAG meetings.

Signed (Chairperson):



Alexander Morison

Date: 17 January, 2017

Attachments

Attachment A: SharkRAG 3 final agenda

Attachment B: Declarations of interest

Attachment C: Gummy Shark species summary



Australian Government
 Australian Fisheries Management Authority

Shark Resource Assessment Group (SharkRAG) Meeting 3 2016

Agenda

7 December 2016, 9:30am – 11:00am AEST – via teleconference

1	Preliminaries		30 minutes
1.1	Welcome and apologies	Chair	
1.2	Acceptance of agenda	Chair	Action
1.3	Declarations of interest	Chair	Action
2	Recommended Biological Catch recommendations	CSIRO	1 hour
2.1	Gummy shark <ul style="list-style-type: none"> • Review projections • RBC and MYTAC recommendations 		Advice
3	Other business and close of meeting		
3.1	Close	Chair	Information



Attachment B – Register of interests

Participant	Interest declared
Mr Sandy Morison	<p>Chair of South East Resource Assessment Group and Tropical Rock Lobster Working Group. Scientific member on South East Management Advisory Committee. Contracted by government departments, non-government agencies and companies for a range of fishery related matters including research and MSC assessments of AFMA managed and other fisheries (by SCS Global Service).</p> <p>No pecuniary or other interest.</p>
Dr Brendan Kelaher	<p>Scallop Resource Assessment Group Chair and Scallop Management Advisory Committee member. No other interests declared.</p>
Dr Robin Thomson	<p>Undertakes CSIRO stock assessments. No pecuniary interests. Declared interest in Close Kin Mark Recapture project (research investigator).</p>
Dr Charlie Huvneers	<p>Senior lecturer and research scientist. Potential interest in funding for research. No pecuniary interest or otherwise.</p>
Dr Ian Knuckey	<p>Director – Fishwell Consulting Pty Ltd</p> <p>Director – Olrac Australia (Electronic logbooks)</p> <p>Chair / Director – Australian Seafood Co-products (seafood waste utilization)</p> <p>Chair / Director – ASCo Fertilisers (seafood waste utilization)</p> <p>Chair – Victorian Rock Lobster and Giant Crab Assessment Group</p> <p>Agent – Olrac Australia electronic logbooks</p> <p>Invited scientific participant – SEMAC, SERAG</p> <p>Current / Recent Projects and funding:</p> <p>Principal Investigator – Fishery Independent Survey of shelf resources in the Great Australian Bight Trawl Fishery 2015</p> <p>Principal Investigator – Improved understanding of economics in fisheries harvest strategies.</p> <p>Principal Investigator – Realising economic returns of reducing waste through utilization of bycatch in the GAB Trawl Sector of the SESSF</p> <p>Principal Investigator – The social drivers and implications of conducting an ecological risk assessment of both recreational and commercial fishing - a case study from Port Phillip Bay</p> <p>Principal Investigator – Review of Monitoring and Assessment in the SESSF</p> <p>Co-Investigator – Optimising processes and policy to minimise business and operational impacts of seismic surveys on the fishing industry and oil and gas industry.</p> <p>Co-investigator – SESSF 2016 Fishery Independent Survey</p> <p>Co-investigator – Bird mitigation in the SESSF trawl sector</p>

	<p>Researcher – Various fishing industry liaison projects for oil and gas industry</p> <p>Researcher – Review of mammal mitigation for a Seafish Tasmania pelagic trawler</p> <p>Scientific Advisor – GABIA, SETFIA, SSIA, SPF (Geelong Star), Gulf St Vincent Prawn Fishery</p> <p>Facilitator – WWF shark traceability workshop</p> <p>Facilitator – Indonesian fishery training and development</p>
Mr David Stone	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.
Mr Leigh Castle	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.
Mr Kyri Toumazos	South Australia/Bass Strait shark fisher, boats fishing with hooks and gillnets. SESSF quota holder. Southern Rock Lobster Board CEO. Declared interests in RBCs.
Mr Ryan Keightley	AFMA executive officer. No interest pecuniary or otherwise.
Ms 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>Director of OZFISH Unlimited Ltd.</p> <p>Executive officer of the NSW Fish Habitat Partnership.</p> <p>President of the SEA LIFE Trust (ANZ).</p> <p>Director of FISHI International.</p>
Mr Robert Curtotti	No interests, pecuniary or otherwise.
Mr Brodie Macdonald	AFMA Manager. No interest pecuniary or otherwise.
Dr Miriana Sporcic	CSIRO, Assessment scientist. A general interest in acquiring funding for research purposes. No interest, pecuniary or otherwise.

1 Gummy shark (*Mustelus antarcticus*)



(Fisheries Research & Development Corporation, 2012)

Assessed by SharkRAG in 2016

Stock status summary		
Stock structure	Gummy shark is endemic to southern Australia. It is considered a single genetic stock across the SESSF extending from Bunbury in Western Australia to Jervis Bay in NSW. The single genetic stock is assessed as three separate sub-stocks within broad regions on the continental shelf of Bass Strait, Tasmania and South Australia.	
Stock status against reference points and trend	<p>Limit reference point is 20 per cent of unfished biomass (pup production is used as a proxy for breeding biomass)</p> <p>Target reference point is 48 per cent of unfished biomass (pup production is used as a proxy for breeding biomass)</p> <p>The 2016 assessment estimates that each of the three sub-stocks are above the target reference point.</p>	
ABARES most recent assessment (2016)	Biomass: Not overfished	Fishing mortality: Not subject to overfishing
GVP figures (2014-15 fishing season)	GVP	% fishery GVP
	\$14.6 million	21.5 per cent

Recommended Biological Catch 2016-17	<p>Based on the 2016 stock assessment, the RAG recommended a three year MYTAC using either of the following RBCs, with a preference for either case 8 or 9:</p> <ul style="list-style-type: none"> • Reference case - 2080 t, 1878 t, then 1807 t • Case 8 - The total catch for each future year is set to 1961 t (the long-term RBC). • Case 9 - The total catch for each future year is set to 1922 t (the average of the RBCs over the first three years, 2016, 2017, 2018).
Overcatch/undercatch	<p>10 per cent undercatch</p> <p>10 per cent overcatch</p>

Probability of recommended biological catch (RBC) (or other levels of catch) causing a decline below limit reference under proposed management Species that follow a HS rule that has been MSE tested will have a “very unlikely” score in this section (i.e. P<10%).

Very unlikely (P<10 per cent)

Alternative Catch Scenarios: The RAG considered 10 year projections where catch is taken by different gear types (pup production as a percentage of unfished pup production).

Region	2017	2019	2021	2026
Base case: catches equal RBCs				
Bass Strait	53.2	53.0	52.4	50.9
South Australia	62.5	61.2	58.5	51.8
Tasmania	71.7	66.7	62.5	54.7
Case 2: All catch by shark longline in South Australia				
Bass Strait	53.2	53.0	52.4	50.9
South Australia	61.5	59.1	55.8	48.1
Tasmania	71.7	66.7	62.5	54.7
Case 3: Longline catch in South Australia increases so total catch equals maximum historical catch				
Bass Strait	53.2	53.0	52.4	50.9
South Australia	62.5	58.5	52.3	42.8
Tasmania	71.7	66.7	62.5	54.7
Case 4: All catch by 6.5" gillnets				
Bass Strait	53.2	53.1	52.4	50.9
South Australia	62.9	62.4	60.3	53.4
Tasmania	71.9	67.2	63.1	55.1
Case 5: All catch by shark longline				
Bass Strait	51.9	50.0	48.9	48.0
South Australia	63.4	63.2	61.3	56.8
Tasmania	71.3	66.2	62.4	56.0
Case 6: All catch by scalefish longline				
Bass Strait	50.3	46.6	44.2	40.1
South Australia	61.5	59.1	55.8	48.1
Tasmania	69.0	61.4	56.4	47.7
Case 7: Total catch = 2052t; split by region and gear according to 2015 catch				
Bass Strait	51.8	47.1	41.9	34.2
South Australia	63.9	63.9	61.8	57.2
Tasmania	75.3	76.9	79.3	82.3
Case 8: Total catch = 1961t; split by region and gear according to 2015 catch				
Bass Strait	52.1	48.2	43.9	37.6
South Australia	64.1	64.6	63.1	59.2
Tasmania	75.4	77.2	79.9	83.3
Case 9: Total catch = 1922t; split by region and gear according to 2015 catch				
Bass Strait	52.2	48.7	44.7	39.0
South Australia	64.2	64.9	63.6	60.1
Tasmania	75.5	77.4	80.1	83.8

The RAG noted that even where all the RBC in South Australia (743.8 t) is taken by longline, the stock remains above target to 2026 (case 2). Even if longline catch in South Australia increased to the maximum historic catch (all gear) the stock would remain above target to 2021 (case 3).

TAC and catch trends								
Assessment year	2009	2010	2011	2012	2013	2014	2015	2016
Tier /rollover /MYTAC	Tier 1	Tier 1	Rollover	Rollover	Tier 1	MYTAC	MYTAC	Tier 1
Stock Status	>B _{TARG} _G	>B _{TARG}						
Fishing season	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
RBC	1800	1836	1836	1836	2010	2010	2010	1961
Agreed TAC*	1717	1717	1717	1836	1836	1836	1836	TBC
Actual TAC after over/unders	1826	1847	1862	1964	1986	1978	1925	TBC
% TAC caught	85	79	79	77	77	91	TBC	TBC

*Note that Commonwealth TAC is set based on the RBC minus state allocation. Details of the state allocation are outlined in the MOU between the Commonwealth and the State of Victoria and South Australia. The total state allocation for Gummy shark is 4.6 per cent of the global catch limit (or RBC) and is apportioned for catch in South Australian internal waters (2.9 per cent) and catch in Victorian Bays and Inlets (1.7 per cent).

Tier Level & Discounts		
Tier Level	Tier 1	
Discount factor	0 per cent	
Is a multi-year TAC in place?	<input type="checkbox"/> Yes (in place this season) 2016-17 was the last year of the three year MYTAC	<input type="checkbox"/> No
Is a multi-year TAC recommended? (please provide a clear indication on whether the multi-year recommendation is a RBC (e.g. based on Tier 1 model output) or TAC (e.g. a roll-over of catch))	<input checked="" type="checkbox"/> Yes (recommended for future seasons) <ul style="list-style-type: none"> • 3 year RBC of 1961 tonnes 	<input type="checkbox"/> No

Breakout rules for multi-year TAC	<p>SharkRAG recommended the following triggers for review of multi-year TACs:</p> <ul style="list-style-type: none"> • If annual catches in any regional sub stock exceed the long term RBC for that region (1098 t in Bass Strait, 650 t in South Australia or 213 t in Tasmania) by more than 20 per cent. • If gummy shark catches in the SESSF fall below 1200 t. • Standardized gillnet CPUE value for Bass Strait approaches historical lows (falls below the 10th percentile of the historical values for Bass Strait). Historical period being from 1997 to 2013 (Bass Strait is used because South Australian CPUE is no longer used in the assessment and Tasmania is in a fish down period with the stock above target).
Have breakout rules been triggered?	n/a

Assessment	
Stock indicator trends	All three assessment stocks remain above target, with no evidence that stocks were ever below the management target.
RAG comments	<p>The RAG agreed that it would have the most confidence in the reference case model RBCs, however, this would result in an increase in TAC in the first year, then a significant step down in TAC. The RAG were concerned that this could lead to higher short term catches with a potential increase in effort to the Bass Strait, followed by a large drop in TAC. The Economics Member also noted the reference case leaves the stock above the target reference point, which is not ideal from an economic perspective.</p> <p>The RAG agreed that cases 8 and 9 were acceptable from a biological perspective and would be preferable to Industry from a stability perspective. It was noted that both cases assume the catch would remain at the 2015 proportions which was particularly high in the Bass Strait. The RAG emphasised that under these cases there would be short term stability for Industry, however a new assessment in 2019 would likely to result in a lower RBC following fishing down to the target reference point.</p> <p>Considering the options, the RAG recommended a three year MYTAC using case 8 or 9.</p>
Key model technical assumptions/parameters	<p>The model uses three management regions which are assessed simultaneously.</p> <p>Differing availability to gear by age is incorporated into model reflecting the varying ability to target gummy shark. Although this approach improves fits to data, for the next gummy shark assessment, SharkRAG agreed to investigate estimating selectivity separately for each region and allowing it to be a</p>

	more flexible form. This may allow the differing availability function to be removed from the assessment.
Changes to model structure/assumptions	<p>The following changes were made to the 2013 model:</p> <ul style="list-style-type: none"> • catches by various gear types are assumed to occur simultaneously rather than sequentially • the ‘hook fleet’ is now separated into shark longline, trawl, and scalefish longline gear types • allowance is made for age reading error.
Significant changes to data inputs	<p>The following data were added to the 2016 model:</p> <ul style="list-style-type: none"> • landings for the seven gear types included in the assessment • length composition data for the seven gear types • age composition data for 1995, 1997, 2002 and 2003 • updated catch rate data.
Comments on data	Standardized gillnet CPUE from South Australia is no longer used in the assessment.
Implications for companion species/TEPs/multi-species fisheries	<p>The gillnet fishery interacts with Australian sea lions in waters off South Australia. Interactions are mitigated by using trigger limits that close spatial zones for 18 months if an interaction occurs.</p> <p>Dolphin interactions are managed through the GHAT Dolphin Strategy which sets performance criteria for individual operators.</p> <p>To reduce targeting of school shark, GHAT operators (excluding scalefish hook) must limit their school shark catch to 20 per cent of their gummy shark catches.</p>

Tier 1 stock projection

Projected biomass

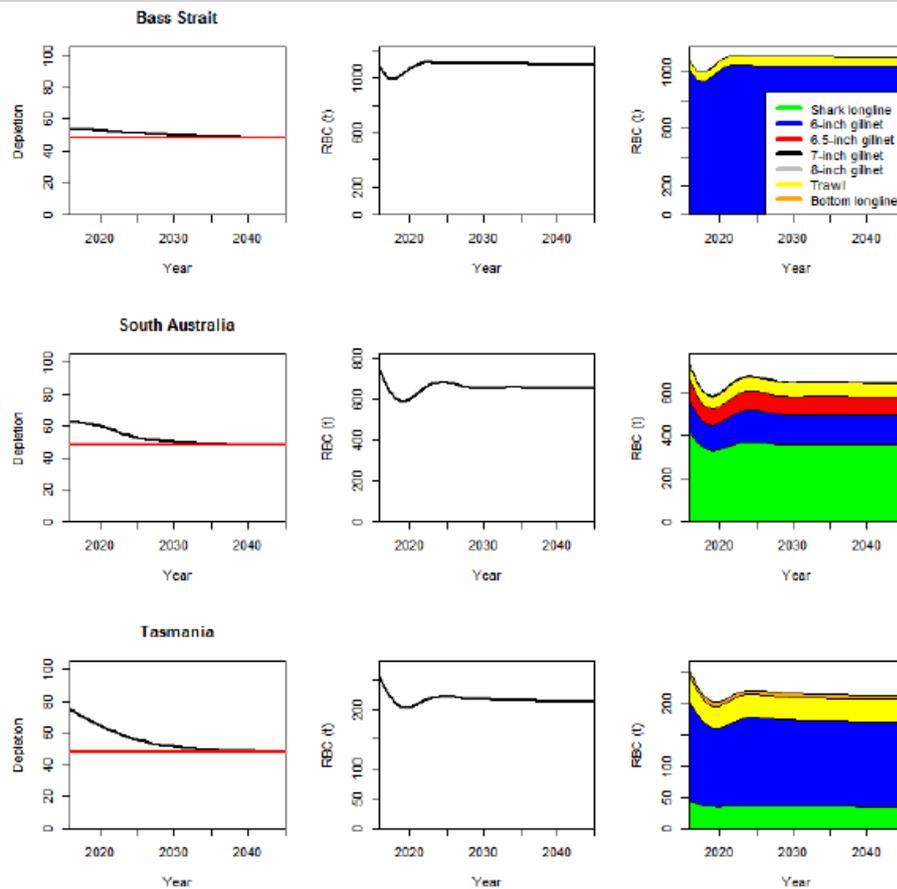


Figure 19. Time-trajectories of depletion (pup production relative to unfished pup production) (left panels), Recommended Biological Catch (centre panels), and Recommended Biological Catch by gear-type (right panels) for projections based on Model 5D (the reference case model).

Research

Research allowance

N/A

Included in TAC

In addition to TAC

Catch trends – Gummy shark

(RBC and total catch are calendar year; TAC and Commonwealth catch are fishing season)

