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Australian Fisheries Management Authority

Minutes

Meeting	Shark Resource Assessment Group (SharkRAG)		
Meeting Number	OOS	Date	23 July 2026
Location	Microsoft Teams	Time	13:30 – 16:30
Members	Dr Rik Buckworth (Chair) Dr Robin Thomson (Scientific member) Dr Matias Braccini (Scientific member) Dr Charlie Huveneers (Scientific member) Dr Caleb Gardener (Economic member) Mr Kyriakos Toumazos (Industry member) Mr Anthony Harriss (Industry member) Mr Leigh Castle (Industry member) Mr Jamie Papas (Industry member) Ms Anissa Lawrence (Conservation member) Dr Lianos Triantafillos (AFMA member) Ms Michelle Henriksen (Executive officer – AFMA)		
Invited Participants	Dr Andrew Penney (Consultant) Dr Daryl McPhee (Consultant) Mr Ross Bromley (SSIA ¹) Mr Simon Boag (SSIA) Dr Paul Burch (CSIRO ²) Dr Miriana Sporcic (CSIRO)		
Observers	Mr James Woodhams (ABARES ³) Ms Sally Weekes (AFMA) Mr Anthony Coggan (AFMA)		

¹ Southern Shark Industry Association

² Commonwealth Scientific and Industrial Research Organisation

³ Australian Bureau of Agricultural and Resource Economics and Sciences

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Agenda Item	Title/Topic/Issue	Notes, Action & Recommendations
1.	Preliminaries	1.1 Welcome and apologies The Chair, Dr Rik Buckworth, opened the meeting with an Acknowledgement of Country and welcomed participants. The Chair facilitated introductions of meeting participants and noted apologies, recorded in the table above. Meeting participants were advised that the meeting would be recorded to assist the preparation of meeting minutes. 1.2 Declarations of interests In line with Section 15 of <i>Fisheries Management Paper 1 – Consultative Committees (FMP1)</i>, SharkRAG noted the requirement for all meeting participants to declare relevant interests, not limited to pecuniary gain, regarding all agenda items proposed for SharkRAG. Declared interests are recorded in the register of interest at Attachment A. 1.3 Adoption of agenda The agenda was adopted as final (see Attachment B). 1.4 Minutes of previous meeting AFMA noted that the minutes from the SharkRAG meeting held on 21 January 2026 have been circulated to SharkRAG members for comment and are published on the AFMA website.
2	Implications of permitting the use of autobaiting equipment to target gummy shark	The purpose of the agenda item was to seek SharkRAGs advice on: 1. the likely consequences of low, medium and high levels of uptake of automatic baiting equipment by gillnet and shark hook boats of the Southern and Eastern Scalefish and Shark Fishery (SESSF), with respect to: i. total allowable catches and stock assessments of target species; and ii. impacts on by-catch species, endangered, threatened and protected (ETP) species, species of special interest (SOSI), the benthos and economic outcomes. 2. whether any critical information gaps exist that could limit management decisions 3. whether current monitoring, research and data collection arrangements are sufficient to detect and manage any emerging risks associated with increased use of automatic baiting equipment. Dr Andrew Penney and Dr Daryl McPhee presented the findings of a desktop study assessing the implications of allowing gillnet and longline operators to use automatic baiting equipment in Bass Strait. SharkRAG noted that: a. Manually baited longlines (LLS), automatically baited longlines (LLA), and gillnets all operate in broadly similar fishing grounds, depths, and habitats, and target broadly the same species assemblages. The primary difference between LLS and LLA is the method used to attach bait to hooks, while gillnets typically catch a higher proportion of sawshark than either longline method. b. Relative to gillnets, LLA are expected to reduce ecological risk through lower interactions with marine mammals and vulnerable shark species, including dolphins, thresher shark and angel shark. By-catch

		levels are expected to remain low, provided existing seabird mitigation measures are maintained. c. Some differences in size selectivity were identified between LLA, LLS and gillnets, but these were considered relatively minor. Any gear-related effects on catch composition are expected to be accommodated within existing stock assessment frameworks, supported by ongoing monitoring and collection of gear-specific catch and biological data. d. LLA are considered a low-impact fishing method on the benthos, with no evidence that increased uptake would materially increase habitat disturbance compared with LLS and gillnets. e. Management risks were assessed as low or negligible across all LLA implementation scenarios, except in the highly unlikely scenario of a compulsory transition from gillnets to LLA. f. Uptake of LLA would likely depend on the ability of operators to absorb installation and ongoing operational costs against anticipated long-term efficiency gains. Previous economic analyses indicate that lower-effort gillnet operators may be more likely to achieve positive economic returns from transitioning to LLA through increased catch opportunities, whereas high-effort gillnet operators are less likely to benefit from transitioning to LLA, as their current operations already provide efficient access to catch opportunities. g. Increased flexibility in fishing methods is expected to benefit the fishery overall, although benefits may not be distributed equally across all operators. SharkRAG discussed: a. Members considered widespread uptake of LLA unlikely, given the significant capital investment required to install automatic baiting equipment, ongoing operational costs and the limited economic incentive for many high-effort gillnet operators to transition to LLA. b. A range of ecological, operational, and assessment implications of increased LLA uptake were discussed, including potential changes in school shark catch composition (particularly catches of larger females); implications for future stock assessments; the number of seabird interactions; and post-release survival rates of animals captured using gillnets compared with hook-based gear. c. Members agreed that risks associated with LLA are likely to depend on the scale of uptake and the management controls implemented to govern their use. d. Some industry members raised concerns about extending access to operators without an established shark fishing footprint, particularly larger scalefish vessels currently authorised to operate up to 15,000 hooks in waters deeper than 183 m. These members considered that broader access could increase overall fishing effort and undermine existing management. They also noted that entry by these larger vessels could lead to market oversupply, lower beach prices, increased pressure on quota, or a loss of year-round supply. Restricting eligibility to operators with a demonstrated history of shark fishing was suggested as a potential safeguard. e. AFMA advised that access to LLA in waters shallower than 183 m would require operators to hold a gillnet or shark hook boat Statutory Fishing Right (SFR), and that proposed management controls were
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		likely to be consistent with existing Temporary Gillnet to Hook Permit conditions in South Australia, such as maximum of 5,000 hooks, fishing restricted to waters shallower than 183 m and the need for seabird mitigation measures. f. There was general consensus that allowing up to five vessels to operate LLA under these conditions would represent a low-risk implementation scenario, with respect to target species TACs and stock assessments, as well as impacts on by-catch species, ETP species, benthic habitats and economic outcomes. g. SharkRAG suggested that any increase beyond an initial uptake of up to five vessels should trigger a formal review to reassess risks, drawing on information collected from participating operators. h. Members identified several key information gaps warranting additional data collection should the use of LLA be permitted in the shark fishery, including discard rates, size composition of discarded species (particularly school shark and gummy shark), protected species interactions, and fishing effort characteristics. SharkRAG recommended that: a. The use of LLA by up to five vessels would represent a low-risk implementation scenario, provided appropriate management controls, monitoring arrangements and data collection requirements are in place. b. A precautionary and staged approach to implementation should be adopted, recognising that uncertainty and potential risks may increase as participation expands. c. Any proposal to increase uptake beyond an initial threshold of five vessels should be subject to a formal review by SharkRAG, drawing on information collected from participating operators to reassess ecological, operational, assessment and economic risks. d. Additional data collection should be undertaken for vessels using LLA in the shark fishery, to improve understanding of discard rates, size composition of discarded species (particularly school shark and gummy shark), protected species interactions and fishing effort characteristics, noting that many of these information gaps exist more broadly across the SESSF and are not unique to LLA operations. e. AFMA should consider establishing guardrails for shark vessels using LLA, including: I. eligibility requirements linked to existing concession holders in the GHAT fishery through holding gillnet or shark hook boat SFRs; II. operational conditions consistent with existing Temporary Gillnet to Hook Permit arrangements in South Australia, including a maximum limit of 5,000 hooks; and III. appropriate seabird mitigation, monitoring and reporting requirements. f. Access arrangements and management controls for the use of LLA in the shark fishery should be developed through further consultation with industry and relevant advisory forums. g. AFMA should consider the advice from SharkRAG and the outcomes of industry consultation in developing a proposal for consideration by the South East Management Advisory Committee (SEMAC).
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3	Addendum to the school shark stock rebuilding strategy	Dr Lianos Triantafillos (AFMA) presented the addendum to the 2015 School Shark Stock Rebuilding Strategy, seeking SharkRAGs advice on its content. SharkRAG noted that: - The School Shark Stock Rebuilding Strategy (SSSRS) was first implemented in 2008, after school shark biomass was found to be below the limit reference point. Based on modelling undertaken in 2012, the SSSRS was revised in 2015 to include a 66-year rebuilding timeframe and an annual catch target of 225 tonnes. - Recent scientific evidence indicates that several key assumptions underpinning the 2015 SSSRS no longer reflect the best available understanding of school shark stock dynamics. - Updated close-kin mark-recapture (CKMR) analyses using general linear models (GLMs) estimated that school shark abundance increased by ~7.5% per annum between 2006 and 2020. This was substantially faster than the growth rate assumed in the 2012 modelling, and consistent with trawl catch per unit effort (CPUE) data, which increased by ~8% per annum since 2005. - In addition, SharkRAG advised in July 2025 that school shark productivity has changed relative to the historical unfished baseline used to estimate B_0. - AFMA is currently funding a Management Strategy Evaluation (MSE) project to develop and test the properties of a harvest control rule. The MSE will also evaluate an approach to estimate stock status using an estimated future unfished biomass ($B_{unfished}$), rather than historical B_0, to address limitations associated with changes in stock productivity. If these approaches can meet pre-specified management objectives, they will be adopted to assess school shark stock status going forward. - Once stock status has been determined, AFMA will undertake a comprehensive review of the SSSRS. - The proposed addendum would remove the 225 tonne annual catch target as a fixed management setting, without altering other existing management controls under the SSSRS. - AFMA advised that the school shark incidental by-catch TAC will continue to be determined using the existing mortality-based logbook method, updated to incorporate the latest population growth estimates from CKMR analyses, pending completion of the MSE project and subsequent review of the SSSRS. SharkRAG discussed: - Members sought clarification on whether removing the 225-tonne catch target would also remove the associated 66-year rebuilding timeframe, given the two settings were intrinsically linked. - AFMA advised that both the fixed catch target and the associated rebuilding timeframe would be removed under the proposed addendum. - ABARES noted that alternative approaches for evaluating rebuilding performance and future catch limits may become available once the age-structured CKMR assessment is completed and forward projections are available, including approaches consistent with T-min
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		concepts and rebuilding projections under zero fishing mortality scenarios. d. Members agreed that decisions on rebuilding timeframes and recovery objectives under the SSSRS are ultimately management and policy decisions, rather than biological or modelling decisions. e. Members agreed that adoption of the age-structured CKMR assessment and completion of the MSE project would provide an appropriate basis for reviewing the metrics used to assess rebuilding progress, and for considering future harvest control rule approaches under the SSSRS. SharkRAG recommended: a. That the updated CKMR GLM analyses, trawl CPUE trends and revised understanding of school shark productivity provide sufficient scientific justification to remove the 225 tonnes annual catch target as a fixed management setting within the SSSRS. b. The existing management arrangements, including continued use of the mortality-based logbook method to determine the school shark by-catch TAC represents an appropriate interim management approach. c. Following completion of the age-structured CKMR assessment and MSE project, consideration should be given to alternative rebuilding metrics, harvest control rules and recovery objectives that better reflect the contemporary understanding of school shark stock dynamics and rebuilding performance. d. A comprehensive review of the SSSRS should occur once the stock status has been determined.
4	Gummy shark assessment model updates	Dr Robin Thomson (CSIRO) presented an update on modifications made to the Tier 1 gummy shark stock assessment model, ahead of the next scheduled stock assessment update in September 2027. SharkRAG noted: a. The model updates were initiated following advice by SharkRAG in 2023 that further development of the gummy shark stock assessment model was needed to improve the treatment of conditional age-at-length data. b. The previous stock assessment model relied on fixed von Bertalanffy growth parameters, whereas the updated model estimates growth parameters directly from the available age and length data. c. The von Bertalanffy growth model used by the gummy shark model was re-coded using a different growth parameterisation which allows more stable estimation of growth parameters. The same parameterisation is used by Stock Synthesis. d. The revised assessment model estimates five growth parameters, including the length-at-age 2 which is shared by males and females, the growth rate parameter and the length-at-age 30 which are both sex-specific. e. The updated model improved fits, most notably to conditional age-at-length data, particularly for female gummy shark, resulting in a statistically significant improvement in overall model fit despite a slight worsening in fit to CPUE data.

		f. Dr Thomson advised that an informal review by Dr Andre Punt concluded that the gummy shark stock assessment should remain in the existing bespoke model structure, primarily due to its extensive tagging dataset and shark-specific processes, that are not readily accommodated within Stock Synthesis. g. Dr Thomson advised that the recoded model had some difficulty in converging, seemingly primarily due to three parameters that allow the relationship between CPUE and abundance to be non-linearly related. She advised that it would be advantageous to consider dropping those parameters from the model in future. SharkRAG discussed: a. Members discussed the improvements in model performance resulting from estimating growth parameters, noting the improved overall model fit despite relatively modest changes to several individual diagnostics, with the largest gains observed in conditional age-at-length data, particularly for female gummy shark, where previous model fits had performed poorly. b. While some conditional age-at-length and CPUE fits remained imperfect, the overall statistical improvement was considered sufficient to justify retaining estimated growth in future model configurations. c. The revised model produced changes in estimated pup production and depletion levels. Dr Thomson noted that some of the changes appeared larger than expected, given the relatively subtle changes observed elsewhere in the model. d. The reduction in estimated pup production was particularly concerning because it differs with previous assessments and indicates a less favourable outlook for future recruitment and stock performance than previously understood. Further investigation is warranted to determine whether this result reflects a biological signal or model-related uncertainty. e. Further investigation of the availability function would be undertaken prior to the 2027 stock assessment, noting that the function may have been applied beyond its original intended purpose and could be influencing model outputs. f. Further investigation would also be undertaken into the CPUE power parameters, which allow non-linearity between CPUE and abundance, noting previous sensitivity analyses indicated little influence on contemporary stock status estimates. Future model projections would additionally examine the implications of shifts in selectivity from gillnet to line fishing methods. g. Members noted that additional ageing data will become available through the ongoing Fish Ageing Services (FAS) program and will be incorporated into the 2027 stock assessment. SharkRAG recommended: a. Further investigation of the availability function, CPUE power parameters, the reduction in estimated pup production and other model assumptions should be undertaken as part of the next assessment, due in September 2027.
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		b. Additional sensitivity analyses should be presented during development of the 2027 stock assessment, to inform selection of the future base-case model including investigation of increased line fishing in Bass Strait in the future. c. Continued incorporation of ageing data and model refinements are supported, to improve assessment performance and understanding of stock dynamics.
	Next meeting	SharkRAG 1 2026 was confirmed for 23-24 September.
	Close of meeting	The Chair closed the meeting at 4:30pm.

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Attachment A – Register of interests

Table 1. Members', invited participants' and observers' declarations of interest

Member	Position	Interest declared
Rik Buckworth	Chair	Chair of SharkRAG. Director of Sea Sense Australia Pty Ltd Scientific Member – NPRAG Adjunct Professor – Charles Darwin University Current or anticipated projects with government agencies, CDU and fishing industry for projects in the NT, Qld and Commonwealth fisheries. Researcher involved particularly in stock assessment research. No pecuniary or other interest in the SESSF shark fishery.
Robin Thomson	Scientific Member	CSIRO, Assessment scientist. Acquiring funding for research purposes. PI of AFMA-CSIRO co-funded project 'Ongoing monitoring of school shark abundance and rebuilding in the SESSF using close kin mark recapture'. PI of the AFMA-funded project 2022/0806: "CKMR assessment design for selected key and rebuilding species in the SESSF and development of a CKMR tool for by-catch stocks". Co-investigator on FRDC project to develop harvest strategies for CKMR assessments for school shark and scalefish.
Charlie Huveneers	Scientific Member	Associate Professor and research scientist. Potential interest in funding for research. No pecuniary interest or otherwise.
Matias Braccini	Scientific Member	Employed by WA DPI Senior research scientist for the Shark and Ray Sustainability research group Potential interest in funding for research. No pecuniary interest or otherwise.

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Member	Position	Interest declared
Caleb Gardner	Economic Member	Institute for Marine and Antarctic Studies. Organisation is known to submit research funding applications for consideration by AFMA Committees
Kyriakos Toumazos	Industry Member	Chief Executive Officer (South Australian Northern Zone Rock Lobster Fishermen's Association Inc.); Director of Southern Sea Eagles Pty Ltd; Director of Southern Fisheries Pty Ltd; Director Health Balance Pharmacies Pty Ltd; Member South Australian Boating Facility Board; Member of Shark Resource Assessment Group (AFMA); Member of South East Management Advisory Committee; Member of AMSA Regional Safety Committee; Director Southern Shark Industry Alliance; Director PACK Investments Pty Ltd; Director Cruickshank's Corner Developments Pty Ltd; Director Cruickshank's Corner Commercial Pty Ltd; Director Seafood Industry Australia;
Leigh Castle	Industry Member	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 items and RBC recommendations
Anthony Harriss	Industry Member	Gillnet fisher and SFR holder.
Jamie Papas	Industry Member	Gillnet fisher and SFR holder. Gillnet Hook and Trap Fishers Association – Committee Member Board Director San Remo Fishermen's Co/Op
Anissa Lawrence	Conservation Member	Director of TierraMar Ltd, registered charity. Independent consultant TierraMar Consulting Pty Ltd.

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Member	Position	Interest declared
		Undertakes contracts for a number of Conservation Non-Government Organisations, government departments, non-government agencies and the private sector on a range of fishery related matters. No pecuniary interest. Conservation member on SPFRAG. Conservation member on SEMAC. Conservation member on South Australia Rock Lobster MAC and RSC. Conservation member on Spencer Gulf Prawn RSC. Director and Chair of Ocean Future Fund Inc
Andrew Penney	Invited Participant	Director of Pscs Australis Pts Ltd, an Australian registered marine/coastal research and management consultancy based in Canberra – interests in any opportunities in this regard. Engaged by SSIA for the project titled “Implications of allowing gillnet and longline SFRs to use automatic baiting longline equipment in the Bass Strait.
Daryl McPhee	Invited Participant	Associate professor at Bond University. Engaged by SSIA for the project titled “Implications of allowing gillnet and longline SFRs to use automatic baiting longline equipment in the Bass Strait.”.
Ross Bromley	Invited Participant	Principle of Girella Fisheries Services. Engaged by SSIA as SIDaC manager. Engaged by SETFIA as TIDaC project manager. Member of Victorian Rock Lobster RAG and MAC. EO of Eastrock (Eastern Zone Rock Lobster Industry Association Inc.). Client representative of various MSC Certificates (none are shark spp.). No interest, pecuniary or otherwise.
Simon Boag	Invited Participant	EO SETFIA (trawl) EO SSIA (sharks) EO SPFIA (SPF) Industry member on behalf SERAG and SEMAC. SSIA is engaged by AFMA to collect shark industry biological data. Atlantis undertakes work to assist shared marine space developers (wind, oil etc) and understand the fishing industry.

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Member	Position	Interest declared
		Atlantis undertakes other work within the fishing industry from time to time including on MSC assessments. SETFIA is the PI on the orange roughy east AOS. SETFIA is engaged by participants within the W ORS research fishery to collect biological samples. SETFIA is engaged by AFMA under co-management to undertake a variety of tasks including snapper management, ling management, industry data collection and consultation. Investment committee member of a large fund that owns fishing rights including SBT, ling and flathead.
Paul Burch	Invited Participant	Employed by CSIRO, assessment scientist. Acquiring funding for research purposes. Principle investigator on the SESSF stock assessment project.
Miriana Sporcic	Invited Participant	CSIRO, assessment scientist. Acquiring funding for research purposes. PI of the ERA project
Lianos Triantafillos	AFMA Member	AFMA member, Manager of the Gillnet, Hook and Trap fishery. No interest pecuniary or otherwise.
Michelle Henriksen	Executive Officer	AFMA EO. No interest pecuniary or otherwise.
James Woodhams	Observer	Employed by ABARES. No interest, pecuniary or otherwise.
Anthony Coggan	Observer	Employed by AFMA. No interest pecuniary or otherwise.
Sally Weekes	Observer	Employed by AFMA. No interest pecuniary or otherwise.

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Attachment B – Adopted agenda

Location: Online, Microsoft Teams

Chair Name: Dr. Rik Buckworth

23.07.26 13:30 – 16:05

Time	Item	Purpose	Presenter
13:30	1. Preliminaries 1.1 Acknowledgement of Country 1.2 Declarations of interest 1.3 Adoption of Agenda	For noting	Chair (5 min)
13:35	2. Implications of permitting the use of autoline baiting equipment to target gummy shark	For advice	Andrew Penney/ Daryl McPhee (90 min)
15:05	3. Addendum to the 2015 school shark stock rebuilding strategy	For advice	AFMA (30 min)
15:35	4. Gummy shark model updates	For noting	Robin Thomson (30 mins)
16:05	<i>End of Day</i>		