



Australian Government

Australian Fisheries Management Authority

Annual Research Statement 2024–25

Southern & Eastern Scalefish and Shark Fishery (SESSF)

Southern and Eastern Scalefish and Shark Fishery Annual Research Statement for 2024-25

This Southern and Eastern Scalefish and Shark Fishery (SESSF) Annual Research Statement was developed by AFMA, in consultation with the SESSF Resource Assessment Group (SESSFRAG), South East Resource Assessment Group (SERAG) and the South East Management Advisory Committee (SEMAC). It identifies areas of high priority research for both AFMA and potential FRDC funding in 2024-25 and will be presented to the AFMA Research Committee (ARC) for consideration as part of the 2024-25 funding round. The table

Title	Objectives and component tasks	Evaluation		
		Total cost (\$ (approx. only)	Priority/ ranking	Feasibility
APPROVED RESEARCH (UNDERWAY OR RECENTLY COMPLETED)				
Fish ageing for SESSF quota species (190840) Project ending 2022/23 Final report due May 2023	Undertake fish ageing for the SESSF to support stock assessments for the period 2020/21 to 2022/23.	Total project cost around \$770k over three years Apportioned across SESSF Sectors	Essential	High
Stock assessments for SESSF quota species in 2022 (using data to 2021) and 2023 (using data to 2022) (210800). Project ending 2022/23 Final report due In June 2023.	The annual assessment presents fishery statistics and catch at size/age data and synthesises existing stock assessment information for the key target species of the SESSF. This is a requirement of the SESSF Harvest Strategy.	\$737k (22/23)	Essential	High
Integrated Scientific Monitoring Program (ISMP) Data services in the SESSF 2022 (210801) Completed.	Manipulate and analyse all applicable SESSF data to produce stock summaries that include Commonwealth and State catches, estimated discards, length and age information for all applicable SESSF species. These are presented in three reports, SESSF Data Summary, ISMP	\$178k Apportioned across SESSF Sectors	Essential	High

Title	Objectives and component tasks	Evaluation		
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	for the SESSF Discards in 2021 and SESSF Catches and Discards for TAC purposes using data to 2021. Undertake targeting analyses and estimate companion species catches for John Dory, Silver Trevally, School Shark, eastern Redfish, eastern Gemfish, Blue Warehouse, Deepwater Shark and eastern Jackass Morwong. This work is presented in the report An investigation of the bycatch of rebuilding and other selected species in the SESSF.			
Orange roughy (Cascade) acoustic survey 2022 (200819) Project ending 2022/23 Not Completed	Submitted to the AFMA Research Committee in January 2021 – was not considered by SERAG or SESSFAG. This research will provide an acoustic based biomass estimation for orange roughy (Cascade) for the 2022 fishing season. It also includes the collection of biological samples including length, weight, sex, spawning stage and otolith extraction.	\$96k	High	High
Acoustic biomass estimates and monitoring metrics for Blue Grenadier, 2022 surveys (210806) Project ending 2022/23 Final report due in May 2023	Conduct structured acoustic surveys through the 2022 winter spawning aggregation of blue grenadier to provide a comprehensive view of the fishery and robust estimates of biomass to input into future Tier 1 stock assessments.	\$111K	High	High
Shark Industry Data Collection (SIDaC) Program – 3 year co-management contract Contract ending in 2024/25	Crew-based data collection program, on-going	\$491k (excl. GST) over 3 years (funded by the fishery, not ARC)	Essential	High

Title	Objectives and component tasks	Evaluation		
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Continued Close Kin Mark Recapture (CKMR) sampling and analysis for school shark (190841) Contract ending 2024/25	Continue close kin sampling and analysis for school shark as the primary indicator of abundance for this species.	~\$300k	Essential	High
Research to support the Upper-Slope Dogfish Management Strategy (200820) Project ending 2022/23 Project extended, new contract commencing 2023/24	Undertake an initial baseline survey, which will underpin a long-term monitoring plan to measure the relative abundance and recovery of Harrison's dogfish and Southern dogfish. The survey is to be conducted in accordance with 'Option 1A with DeepBRUVS identified in the report 'Research to support the upper slope dogfish management strategy: Options for monitoring the recovery of southern dogfish and Harrison's dogfish (Williams <i>et al.</i> 2018)'. Work under the previous contract was not completed due to timing, weather and increased cost of vessel charters.	~\$450k across SESSF Sectors	High	High
RECENTLY APPROVED RESEARCH (COMMENCING 2023/24)				
Fish ageing for SESSF quota species 3 year (220812) Project ending 2025/26	Undertake fish ageing for the SESSF to support stock assessments for the period 2023/24 to 2025/26.	\$799k	Essential	High
Stock assessments for SESSF quota in the SESSF for the 2024-25 and 2025-26 financial years (including Integrated	The annual assessment presents fishery statistics and catch at size/age data and synthesises existing stock assessment information for the key target species of the	\$1,793K across SESSF and GAB	Essential	High

Title	Objectives and component tasks	Evaluation		
		Total cost (\$ (approx. only)	Priority/ ranking	Feasibility
Scientific Monitoring Program, data services in the SESSF) (220803) Preparatory work required in May/June 2024 Project ending 2025/26	SESSF. This is a requirement of the SESSF Harvest Strategy. ISMP Detailed deliverables are subject to advice from the relevant RAGs and AFMA management, previously: - Manipulate and analyse all applicable SESSF data to produce stock summaries that include Commonwealth and State catches, estimated discards, length and age information for all applicable SESSF species. These are presented in three reports; SESSF Data Summary, ISMP for the SESSF Discards and SESSF Catches and Discards for TAC purposes. Undertake targeting analyses and estimate companion species catches for school shark only.			
Improving CPUE standardisations for sharks; (220810) Project ending 2023/24	Improve standardisations: a) Incorporate the relationship between CPUE and net length. b) Effects of Australian Sea Lion and other closures on CPUE. c) Account for changing dynamics of fleet with new entrants. d) Combine manual and auto hook CPUE time series if feasible This project (~\$80k) was supported by the AFMA Research Committee (ARC) for 2022-23 however there was insufficient funding.	\$100K	High	High

Title	Objectives and component tasks	Evaluation		
		Total cost (\$) (approx. only)	Priority/ ranking	Feasibility
Acoustic Optical Surveys (AOS) of the Eastern Zone orange roughy stock for 2023 (220813) Preliminary work to commence in May/June 2023 Project ending 2023/24	Conduct structured acoustic surveys through the 2023 winter spawning aggregation of the Eastern Zone orange roughy spawning aggregation using towed body AOS equipment to provide robust estimates of biomass to input to future stock assessments. \$30,000 has been included in the 2022/23 FY research budget, for preliminary work to commence in May/June 2023. <u>** postponed to 2024, budget implications being worked through **</u>	\$354K	High	High
Blue grenadier acoustic survey 2023 (220811) Preliminary work to commence in May/June 2023 Project ending 2023/24	Conduct structured acoustic surveys through the 2023 winter spawning aggregation of blue grenadier to provide estimates of biomass to input into future Tier 1 stock assessments. \$12,000 has been included in the 2022/23 FY research budget, for preliminary work for the 2023 survey to be commenced in May/June 2023.	\$105k	High	High
Application of Close-Kin Mark-Recapture assessments for key and rebuilding species in the SESSF (220806) Project ending 2024/25	Use CKMR methods to produce fishery dependent abundance data for species where Catch Per Unit Effort (CPUE) data are not available (e.g., gummy shark). CMKR abundance indices are more reliable than traditional CPUE methods, especially for species that can no longer be estimated against B_0. This is important because of factors that cannot be effectively accounted for in the standardisation process and recent structural adjustments in the SESSF.	\$328K	High	High

Title	Objectives and component tasks	Evaluation		
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NEW IDENTIFIED RESEARCH NEEDS FOR 2024-25				
Blue Grenadier acoustic survey for 2024.	Conduct structured acoustic surveys through the 2024 winter spawning aggregation of blue grenadier to provide a comprehensive view of the fishery and robust estimates of biomass to input into future Tier 1 stock assessments.	~\$100K	High	High
Evaluating contributing factors to catch per unit effort (CPUE) standardisation in the SESSF to inform assessments and the establishment of environmental triggers for management purposes Project to be undertaken in two parts, with Part 1 proposed for 2024–25.	<u>Part 1</u> : A desk-top scoping project to: - Identify priority species for analysis (noting that biomass estimates for some species are obtained through acoustic surveys or Close-Kin Mark Recapture); - Consider the outputs of the Multi-Species Harvest Strategy (MSHS) project and other current and past projects (e.g., FRDC Project 2022-07) when identifying priority species; - Identify what data is: a) available; b) influential; or c) lacking; - Consider the impacts of climate change, trophodynamic shifts, current and future spatial closures (e.g. for offshore energy), changes in fishing power, gear selectivity and fleet dynamics; - Scope possible environmental indicators of ecosystem health for important species captured by the Ecological Traits Index as part of the MSHS project; and,	~\$50K (Part 1)	Medium* *Reduced to medium priority at SEMAC 50	High

Title	Objectives and component tasks	Evaluation		
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	- As a special case, explore/identify targeted versus non-targeted shots for the deepwater shark basket quota to assist in refining the CPUE series for this species group. <u>Part 2</u>: Following a review of the outputs of Part 1, a more comprehensive analysis would: - Develop and refine CPUE standardisation methodologies for the priority species identified in Part 1; and, - Use the environmental indicators identified in Part 1 to establish environmental triggers for management purposes.			
Pink Ling stand-alone stock assessment 2024/25	Provide a quantitative stock assessment for pink ling, including RBC calculations consistent with the SESSF harvest strategy framework. The vendor will be required to process and aggregate data prior to analysis.	\$50K – \$100K	High	High
Independent review of Blue Grenadier Tier 1 stock assessment in 2024/25	SERAG has recommended that an independent review of the Blue Grenadier stock assessment be conducted before the next assessment, noting the history of waiting until poor predictions are given from assessments before reviews are undertaken.	\$50K – \$100K	High	High
Deepwater shark habitat characterisation	Where available data permits, describe the temporal (i.e. diurnal/seasonal) habitat associations of deepwater sharks by genus/species, sex and life history stage, in	<\$100K	Medium	High

Title	Objectives and component tasks	Evaluation		
		Total cost (\$ (approx. only)	Priority/ ranking	Feasibility
	both ‘closed’ and ‘open’ areas of the SESSF using contemporary GIS habitat layers. Please note that the identification of targeted versus non-targeted shots for the deepwater shark group has been included in the project scope for the proposal ‘Evaluating contributing factors to catch per unit effort (CPUE) standardisation in the SESSF’.			
Acoustic Optical Surveys (AOS) of the Eastern Zone orange roughy stock for 2024 (220813) Preliminary work to commence in May/June 2024 Project ending 2024/25	This project was approved by the ARC in early 2023 but AFMA has since been informed that it cannot be completed in 2023–24. AFMA has agreed to support an identical project starting in late 2023–24 into 2024–25. Conduct structured acoustic surveys during the 2024 winter spawning aggregation of the Eastern Zone orange roughy using towed body AOS equipment to provide biomass estimates for use in future stock assessments. \$30,000 has been included in the 2023/24 FY research budget, for preliminary work to commence in May/June 2024.	\$354K	High	High

FRDC funding in 2024-25 - Commonwealth Research Advisory Committee (ComRAC)

Title	Objectives and component tasks	Evaluation		
		Total cost (approx. only)	Priority/ ranking	Feasibility
APPROVED RESEARCH (UNDERWAY OR RECENTLY COMPLETED)				
Revisiting biological parameters and information used in the assessment of Commonwealth fisheries: a reality check and workplan for future proofing (FRDC project 2019-010). Completed. Final report published December 2022	1. Identify the origin of current biological information used in assessments of species (including empirical stock assessments and ecosystem modelling efforts) carried out under the Commonwealth Harvest Strategy Policy, including the pedigree of the information (provenance, age, appropriateness of methods used). 2. Assess the implications and risks associated with using dated and borrowed information in assessments currently used for informing fisheries management, including the scale of any risks and the species for which a change in biological parameters used in assessments has the greatest impact. 3. Identify the methods that might be applied to update priority biological parameters, including a review of the efficacy and applicability of novel methods and approaches developed in recent years. 4. Articulate a work plan including appropriate sampling regimes required for updating priority biological parameters used in assessments for those species identified as being at most at risk.	\$189K	High	High

Title	Objectives and component tasks	Evaluation		
		Total cost (approx. only)	Priority/ ranking	Feasibility
Development and evaluation of multispecies harvest strategies in the SESSF (FRDC project 2018-021). Underway. Commenced October 2018.	1. To develop and evaluate multi-species harvest strategies, including reference points and decision rules. 2. To evaluate future monitoring and assessment options identified in the SESSF Monitoring and Assessment Research Project. 3. To develop a process and set of design principles for multi-species harvest strategies.	\$464,973	High	High
Implementation of dynamic reference points and harvest strategies to account for environmentally-driven changes in productivity in Australian fisheries (FRDC project 2019-036). Underway.	Develop understanding of dynamic reference points, and those species for which they can be used, that can account for shifts in productivity to inform stock assessments and harvest strategies. Primary outcomes include: • Identified candidate fish stocks that may utilise dynamic reference points • Make recommendations for future implementation of dynamic reference points • Develop and improve approaches to stock assessments with regard to productivity • Evaluate options for effective harvest controls rules	\$552K	High	High
Developing a harvest strategy for school shark as a case study for species where depletion can no longer be estimated against B_0 .	Investigate development of a harvest strategy for species where depletion can no longer be estimated against B_0 (absolute estimate is only available), using school shark as a case study. To be informed by the multi-species harvest strategy project (MSHSP), and dynamic reference points project. The project scope was expanded to include a teleost species.	High	High	High

Title	Objectives and component tasks	Evaluation		
		Total cost (approx. only)	Priority/ ranking	Feasibility
An updated understanding of Eastern School Whiting stock structure and improved stock assessment for cross jurisdictional management (FRDC project 2019-030). Underway. Commenced September 2019	Determining the stock structure of eastern school whiting stock and better understanding the species composition mix between eastern school whiting and stout whiting. Recommendations for approaching assessment(s) based on the outcomes of stock structure work.	\$420,285	High	High
Improving and promoting fish trawl selectivity in the SESSF and GABTS (FRDC project 2019-027). Underway.	Quantify the performance of discard and bycatch reduction strategies in the GABT Sector and SET Sector. Recommendations for reducing discards and increasing NER and boat level profits in the trawl fisheries.	\$776,376 across SESSF and GAB	High	High
NEWLY APPROVED RESEARCH PROJECTS				
Southeast Australian Marine Ecosystem Survey (SEA-MES) on <i>RV Investigator</i> .	This project has been funded and survey voyages will commence in the second half of 2023.	AFMA contributed \$100K in 22– 23 FY	High	High
Trials of oceanographic data collection on commercial fishing vessels in SE Australia (FRDC 2022-007).	Increase the spatial resolution of oceanographic data collected in Australia's inshore, shelf, upper-slope, and offshore waters by fitting commercial fishing vessels, or fishing gear, with environmental sensors and/or data loggers. Data transfer and processing could potentially be managed through the 'Ships of Opportunity' Facility within the Integrated Marine Observing System (IMOS).	\$259K AFMA contributed \$50K in 22–23 FY	High	High

Title	Objectives and component tasks	Evaluation		
		Total cost (approx. only)	Priority/ ranking	Feasibility
Biological parameters for stock assessments in South Eastern Australia – an information and capacity uplift (FRDC 2022-032). Underway.	1. To develop projects that directly address priority areas for updating biological parameters for target species in the SESSF and understanding the implications of changing parameters on the fishery. 2. Reduce uncertainties in stock assessments for the SESSF through the updating of biological parameters and understanding of key interactions between and drivers of change in biological parameters. 3. Progress methods development associated with ascertaining biological parameters and progressing stock assessments to increase efficiencies, reduce time and financial costs, expand applicability and reduce uncertainties in stock assessments. 4. Build fisheries capability across multiple pathways to support the ongoing sustainability of high quality fisheries research.			

No newly identified FRDC projects.

Research projects identified for inclusion in future research plans

Title	Objectives and component tasks	Evaluation		
		Total cost (approx. only)	Priority/ ranking	Feasibility
Obtaining discard data and fish lengths using electronic monitoring	Investigate implementation issues, cost and solutions to adopt electronic monitoring to collect length frequency information for key commercial species on hook and gillnet vessels to support Tier 1 assessments. Previously not supported for funding.	Low	High	High
Economic data collection	Improve the collection of fishery related economic data to inform modelling and availability of information for the fisheries. More regular and accurate, industry-supported provision of economic data, including fixed and variable costs of running fishing vessels, and quota trading and lease prices, is required to support management of primary species under an MEY goal as stipulated in the Commonwealth Harvest Strategy Policy. There is an action item to refine the scope and objectives of this research priority before further consideration.	TBA	TBA	TBA
Independent review of the Flathead Tier 1 stock assessment.	SERAG has recommended that an independent review of the Flathead stock assessment be conducted before the next assessment, noting the history of waiting until poor predictions are given from assessments before reviews are undertaken.	TBA	TBA	TBA

SESSF stock assessments schedule

Species	MYTAC in 2023-24 season ¹	Last assessed	2021	2022	2023	2024	2025	2026	AFMA management comment
Alfonsino	9 th year of 3-year MYTAC	2013							Future assessment subject to periodic review of data.
Bight redfish	1 st year of 3-year MYTAC	2022		1					Stock assessment brought forward to 2022 due to ongoing concerns around abundance estimates in the GABFIS.
Blue eye trevalla	Single year TAC (slope) 1 st of 3-year MYTAC (seamount)	2022 (slope) 2021 (seamount)	4 (slope) 5 (S/M)	4 (slope)	4 (slope)	4 (slope)	4 (slope)	4 (slope)	Tier 4 for slope stock only updated in 2021 – single year MYTAC for 2022-23 season. To be updated in 2022. * CKMR being investigated.
Blue grenadier	1 st year of 3-year MYTAC	2022	1	1			1		Independent review of the Blue Grenadier stock assessment model (before the 2025 assessment) considered a high priority
Blue warehou	N/A (rebuilding species)	2013							Schedule subject to annual review of fishery indicators
Deepwater flathead	4 th of 3-year MYTAC	2019			1				Originally scheduled for 2024 to allow for a Bight redfish assessment in 2022. Has been moved forward to 2023 due to the FIS being discontinued in its current form.
Deepwater shark east	Single year TAC	2022	5		4*				Tier 5 could not be completed in 2021 due to uncertainties in the data. *subject to SESSFRAG advice for a Tier 4 alternative approach to be developed for 2023.
Deepwater shark west	Single year TAC	2022	5		4*				Tier 5 could not be completed in 2021 due to uncertainties in the data. *subject to SESSFRAG advice for a Tier 4 alternative approach to be developed for 2023.
Elephant fish	3 rd of 3-year MYTAC	2020			WOE			WOE	
Flathead	1 st of 3-year MYTAC	2022	Update	1			1		Partial update completed in 2021 showed no concerns with indicators.
Gemfish - east	N/A (rebuilding species)	2009							SESSFRAG (April 2022) agreed to not undertake the 2022 assessment due to lack

¹ For some MYTAC scheduling, assumption that decisions of the Commission will be consistent with AFMA management advice

Species	MYTAC in 2023-24 season ¹	Last assessed	2021	2022	2023	2024	2025	2026	AFMA management comment
									of data. Application CKMR is a priority for this species.
Gemfish - west	1 st of 3-year MYTAC	2022		4			4		
Gummy shark	3 rd of a 3-year MYTAC	2020			1				Model updates to be completed in 2022 to support 2023 assessment.
Jackass morwong	N/A (rebuilding species)	2021	1 (eastern)			1			SERAG discussed the western jackass morwong stock at the October 2021 meeting. Noting the low catches, and the management changes resulting from the eastern jackass morwong assessment, there was no western jackass morwong assessment in 2022. Future approaches to assessments and TAC setting process for western jackass morwong will be considered in the context of both stocks.
John dory	N/A (rebuilding species)	2021	4			3*			*Subject to SERAG/SESSFRAG advice
Mirror dory	Single year TAC	2022	4	4	4	4	4		Annual assessment given the cyclical nature of stock abundance
Ocean perch	3 rd of 3-year MYTAC	2020				4			SESSFRAG (April 2022) agreed to postpone Tier 4 assessment to allow for funding to be redirected to higher priority research.
Orange roughy - south	South: N/A (rebuilding species) Pedra Branca: 2 nd of a 3-year MYTAC	S:2000 PB:2021							The Pedra Branca portion of the orange roughy was assessed as part of the eastern stock in 2021.
Orange roughy - east	2 nd of a 3-year MYTAC	2021	1				1		AOS of Orange Roughy East deferred from 2023 to 2024 and assessment postponed to 2025
Orange roughy - west	N/A (rebuilding species)	2002							
Orange roughy - Cascade Plateau	Single year TAC	2009				3?			Subject to SERAG advice. SESSFRAG Chair's 2023, actioned AFMA to liaise with Fish Ageing Services to review Orange roughy otolith weight/fish length data to determine if there are multiple stocks in the Cascade and GAB
Orange roughy - Albany & Esperance	N/A (rebuilding species)	N/A				3?			Subject to GABRAG advice

Species	MYTAC in 2023-24 season ¹	Last assessed	2021	2022	2023	2024	2025	2026	AFMA management comment
Oreo smooth - cascade	Long term TAC (catch dependent)	2010							
Oreo smooth - other	Single year TAC	2022	WOE	WOE	WOE	WOE	WOE		
Oreo basket	3 rd of a 3-year MYTAC	2020				4			SESSFRAG (April 2022) agreed to postpone Tier 4 assessment to allow for funding to be redirected to higher priority research.
Pink ling	2 nd of a 3-year MYTAC	2021	1			1			Potential stand-alone assessment in 2024 depending on vendor availability
Redfish	N/A (rebuilding species)	2020							SESSFRAG agreed to not undertake the 2024 stock assessment due to lack of data. CKMR has been prioritised for this species.
Ribaldo	3 rd of a 3-year MYTAC	2020				4			SESSFRAG (April 2022) agreed to postpone Tier 4 assessment to allow for funding to be redirected to higher priority research.
Royal red prawn	3 rd of a 3-year MYTAC	2020				4			SESSFRAG (April 2022) agreed to postpone Tier 4 assessment to allow for funding to be redirected to higher priority research.
Saw shark	3 rd of a 3-year MYTAC	2020				4			SESSFRAG (April 2022) agreed to postpone Tier 4 assessment to allow for funding to be redirected to higher priority research.
School shark	N/A (rebuilding species)	2018				1			Tier 1 assessment will be updated with information from the CKMR on this species.
School whiting	3 rd of a 3-year MYTAC	2020				1			SESSFRAG (April 2022) agreed to postpone this assessment to 2023. This will be revisited at the August Data meeting once CPUE and other indicator data have been reviewed.
Silver trevally	Single year TAC	2022	4	4	4*				*Traditionally a Tier 4 assessment but may be elevated to a Tier 1 (the joint assessment) or a Dynamic Tier 4 depending on SERAG advice
Silver warehou	2 nd of 3-year MYTAC	2021	1			1			
Species	MYTAC in 2022-23 season	Last assessed	2021	2022	2023	2024	2025		