Australian Government
Australian Fisheries Management Authority

Annual Research Statement 2022-23

Great Australian Bight Trawl Sector (GABTS)

2021

Box 7051, Canberra Business Centre, ACT 2610 / Ph (02) 6225 5555 / Fax (02) 6225 5500 / AFMA Direct 1300 723 621 afma.gov.au

Great Australian Bight Trawl Sector Annual Research Statement for 2022-23

The Great Australian Bight Trawl Sector (GABTS) Annual Research Plan is developed by AFMA, in consultation with the Great Australian Bight Resource Assessment Group (GABRAG) and the Great Australian Bight Management Advisory Committee (GABMAC). In developing the Plan consideration is given to the broader Southern and Eastern Scalefish and Shark Fishery Five Year Strategic Research Plan (SESSF Research Plan 2016-2020).

AFMA funding in 2022-23 (AFMA Research Committee; ARC)

Title	Objectives and component tasks	Evaluation		
		Total cost ($) (approx. only)	Priority/ rank	Feasibility
APPROVED RESEARCH (UNDERWAY OR RECENTLY COMPLETED)				
GABT Fishery Independent Survey 2021	GABRAG proposed to postpone April 2020 survey to April 2021. Conduct a winter survey which will provide further points in the times-series of fishery independent survey (FIS) indices of abundance. The resulting FIS data series will be included in stock assessments of target species and time series analysis of major by-product and by-catch species. The FIS also provides time series information on the spatial and temporal distribution of a large number of non-commercial fish species and a platform from which biological information (length, sex, maturity, age etc) can be collected in a systematic way from these species.	Medium	Essential	High
Fish ageing for SESSF quota species (included in SESSF research statement)	Undertake fish ageing for the SESSF to support stock assessments for the period 2020/21 to 2022/23.	Low Total cost approx $262k p/a for SESSF.	Essential	High

Title	Objectives and component tasks	Evaluation		
		Total cost ($) (approx. only)	**Priority/ rank**	**Feasibility**
		GABT proportion based on 2 species		
SESSF Stock Assessment 2019-20 to 2020-22 (project 190800) – 3 year project ending in 2021/22 (31 May 2022)	Provide quantitative and qualitative species assessments in support of the five SESSFRAG assessment groups, including RBC calculations within the SESSF harvest strategy framework	Three year project (Total cost $1.255m) 2019/20 $50,000 2020/21 $503,575 2021/22 $701,667	Essential	High
Research to support the Upper-Slope Dogfish Management Strategy	Undertake an initial baseline survey, which will underpin a long-term monitoring plan to measure the relative abundance and recovery of Harrisson'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 Harrisson's dogfish (Williams *et al*. 2018)' GABRAG have requested that at least one of the GAB closures is included in the survey design.	High (noting costs are split across SESSF and GAB)	High	High
NEW IDENTIFIED RESEARCH FOR 2022-23				
Stock assessments for SESSF quota in the SESSF in 2022 (using data to 2021) and 2023 (using data to 2022).	Deepwater flathead Tier 1 stock assessment. The stock 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.	Low	Essential (See GAP ID form for SESSFRAG Research Statement)	High

Title	Objectives and component tasks	Evaluation		
		Total cost ($) (approx. only)	**Priority/ rank**	**Feasibility**
Alternatives for orange roughy stock assessment	GABRAG (October 2020) considered alternative approaches to assessing the GAB orange roughy stock, and determined that an evidence based approach may provide an estimate of whether the stock has recovered above the limit reference point. This research priority has been identified to establish metrics for existing and potential data sources, including options for assessing the status of orange roughy in the GABT. Identified lines of evidence included: Currently available: - Ecological Risk Assessment (ERA) - Age structure (compare age structure of an orange roughy stock with known estimates of depletion) - CPUE (further analyses required to determine if this is an appropriate index Potentially available: - Acoustic surveys - Egg surveys	Low (to be undertaken withing existing staff budget, not for ARC funding)	High (This work is being pursued outside the ARC funding process)	High
Ageing orange roughy otoliths	Orange roughy otoliths have been (and continue to be) collected under the GABT Orange Roughy Research Plan, with the view to undertaking a future stock assessment. GABRAG are interested in pursuing the ageing of these otoliths to inform assessment options (above) and inform future sampling protocols.	Low	High (This work will be completed within the existing Fish Ageigin Services Budget, and does not require additional ARC funding)	High

FRDC funding in 2022-23 (Commonwealth Research Advisory Committee; ComRAC)

Title	Objectives and component tasks	Evaluation		
		Total cost (approx. only)	Priority/rank	Feasibility
APPROVED RESEARCH (UNDERWAY OR RECENTLY COMPLETED)				
Development and evaluation of multispecies harvest strategies in the SESSF (FRDC project 2018-021)	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. To develop a process and set of design principles for multi-species harvest strategies.	$464,973 Commenced October 2018 and is due to finish in October 2020	High	High
Improving and promoting fish trawl selectivity in the SESSF and GAB (**FRDC project 2019-027**)	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.	High	High	High
NEW IDENTIFIED RESEARCH FOR 2022-23				
There are no new research priorities identified for FRDC funding.				

Cost

- **High: >$200,000**
- **Medium: $100,000 - $200,000**
- **Low: <$100,000**

Management priority categories

- **Essential**
- **High**
- **Medium**
- **Low**

Feasibility categories

- **High**
- **Medium**
- **Low**

Research projects identified for inclusion in future research plans

Title	Objectives and component tasks	Evaluation		
		Total cost (approx. only)	**Priority/ ranking**	**Feasibility**
Developing mitigation devices for deepwater shark.	GABIA have expressed interest in developing mitigation devices for deepwater shark with a view to allowing access to grounds currently closed under the Upper-slope Dogfish Management Strategy. *Improving and promoting fish trawl selectivity in the SESSF and GAB* (***FRDC* 2019-027**). The Principal Investigator (Matthew Broadhurst) has indicated this research could be included in the project if there is sufficient interest from industry. This research is considered a high priority, but should only progress if it is not pursued as part of FRDC project 2019-027. SESSFRAG (March 2021) did not support the inclusion of this research priority as part of the existing FRDC project, and recommended that GABRAG further consider progressing this priority (independently of FRDC 2019-027) in the 2023-24 Annual Research Statement, if it is determined to be an ongoing priority.	Low / Medium (consider co-management approach to reduce costs)	High (pending outcomes of FRDC project 2019-027)	High

SESSF stock assessments schedule

Species	MYTAC in 2021-22 season[1]	Last assessed	2019	2020	2021	2022	2023	2024	AFMA management comment
Alfonsino	7th year of 3-year MYTAC	2013							Future assessment subject to periodic review (SESSFRAG 2019 recommended to commission – delay the next assessment until 2020 due to low catches and lack of data)
Bight redfish	2nd of 5-year MYTAC	2019	1					1	GABMAC raised concerns about uncertainty in the model and recent biomass estimates form the FIS – however the TAC is largely undercaught.
Blue eye trevalla	Single year TAC	2018 (Seamount) 2020 (Slope)		4 (slope)	4 (slope) 5 (S/M)			4 (slope) 5 (S/M)	Tier 4 for slope stock only updated in 2020 – single year MYTAC for 2021-22 season. Tier 4 scheduled for slope and Tier 5 for seamounts in 2021. Trigger to be implemented for the seamounts with no more than 54 t to be taken in any fishing year. * CKMR being investigated.
Blue grenadier	3rd of 3-year MYTAC	2018			1			1	Under-caught and above target. As this is a very consistent stock, the stock assessment could be delayed a year (and perhaps thereafter undertaken every four years rather than three) SESSFRAG (March 2021) recommended considering deferring the 2021 blue grenadier Tier 1 assessment (dependent upon the analysis for the 2019 acoustic survey data – to be completed in May/June 2021).
Blue warehou	N/A (rebuilding species)	2013							Schedule subject to annual review of fishery indicators
Deepwater flathead	2nd of 3-year MYTAC	2019	1			1			
Deepwater shark east	3rd of 3-year MYTAC	2018 (T4)			5			5	
Deepwater shark west	3rd of 3-year MYTAC	2018 (T4)			5			5	

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

Species	MYTAC in 2021-22 season[1]	Last assessed	2019	2020	2021	2022	2023	2024	AFMA management comment
Elephant fish	2nd of 3-year MYTAC	2020		WOE			WOE		Assessed using weight of evidence approach in Jan 2020.
Flathead	2nd of 3-year MYTAC	2019	1		Update	1			
Gemfish - east	N/A (rebuilding species)	2009				1		1	Schedule subject to annual review of fishery indicators. SESSFRAG (March 2021) agreed to defer the eastern gemfish Tier 1 assessment to 2022, noting the large number of Tier 1 assessments scheduled for 2021.
Gemfish - west	2nd of 3-year MYTAC	2019	4			4			Moved to a Tier 4 for the CTS component of the stock. Stock structure research has revealed evidence of genetically different populations between the east and west (no gene flow), with a mixing of the two stocks in western Bass Strait through to Portland
Gummy shark	1st of a 3-year MYTAC	2020		1			1		The original schedule for assessment in 2019 was delayed to 2020. There was concern of insufficient new data to run an updated assessment in 2019.
Jackass morwong	3rd of 3-year MYTAC	2018			1			1	
John dory	3rd year of 3-year MYTAC	2020		WOE[2]	4				A weight of evidence approach was used in 2020 given uncertainty about the status of the stock during the default reference period and whether CPUE is indexing stock abundance. Scheduled for a Tier 4 in 2021, subject to resolving issues regarding stock status abd CPUE.
Mirror dory	Single year TAC	2020	4	4	4	4	4	4	Annual assessment given the cyclical nature of stock abundance
Ocean perch	1st of 3-year MYTAC	2020		4			4		
Orange roughy - south	N/A (rebuilding species)	2000							The Pedra Branca portion of the orange roughy was assessed as part of the eastern stock.
Orange roughy - east	4th of a 3-year MYTAC	2017			1			1	SESSFRAG agreed to delay the assessment until 2021 to enable further consideration of natural mortality.
Orange roughy - west	N/A (rebuilding species)	2002							Limited effort, bycatch TAC and RCA
Orange roughy - Cascade Plateau	Single year TAC	2009							Limited data. Acoustic survey scheduled for 2021.
Orange roughy - Albany & Esperence	N/A (rebuilding species)	N/A							Limited effort, bycatch TAC

[2] Weight of evidence (WOE) adopted in 2020 due to concerns about the CPUE series.

Species	MYTAC in 2021-22 season[1]	Last assessed	2019	2020	2021	2022	2023	2024	AFMA management comment
Oreo smooth - cascade	Long term TAC (catch dependent)	2010							Limited data
Oreo smooth - other	Single year TAC	2020	WOE	WOE	WOE	WOE	WOE	WOE	
Oreo basket	1st of a 3-year MYTAC	2020		4			4		
Pink ling	3rd of a 3 year MYTAC	2018			1			1	
Redfish	N/A (rebuilding species)	2017		1			1		Avoidance behaviour by operators and low catches may mean that CPUE is becoming less informative as an index of abundance. Redfish may be assessed in 2020 subject to data availability, the available data will be assessed at the August SESSFRAG data 2020 meeting.
Ribaldo	1st of a 3 year MYTAC	2017		4			4		
Royal red prawn	1st of a 3 year MYTAC	2017		4			4		
Saw shark	1st of a 3 year MYTAC	2020		4			4		
School shark	N/A (rebuilding species)	2018						1	
School whiting	1st of a 3 year MYTAC	2020		1			1		
Silver trevally	Single year	2020		4	4			TBC	Single-year TAC due to concerns about most recent CPUE point
Silver warehou	3rd of 3 year MYTAC	2018			1			1	
			2019	2020	2021	2022	2023	2024	