ANTARCTIC FISHERIES FIVE YEAR STRATEGIC RESEARCH PLAN
2019 – 2023

The *Heard Island and McDonald Islands Fishery Management Plan 2002* and the *Macquarie Island Toothfish Fishery Management Plan 2006* both require that a five year strategic research program be developed and implemented, to support assessment and management of the fisheries. The Management Plans also require that the five year strategic research program be reviewed annually. Due to Australia's involvement in CCAMLR Exploratory Fisheries, some research for these areas has also been included however this is not a comprehensive list.

To meet the Management Plan requirements, the Sub-Antarctic Resource Assessment Group (SARAG) and Sub-Antarctic Fisheries Management Advisory Committee (SouthMAC) have developed the Antarctic Fisheries Five Year Strategic Research Plan. The Plan identifies areas of priority research for Antarctic Fisheries for 2019 – 2023, and should be considered in conjunction with the Australian Antarctic Division (AAD) 5 year Southern Ocean Work Plan provided at Attachment 1. The work at Attachment 1 will be funded through AAD core funding and industry through an AAD-industry collaborative deed via the industry/FRDC Industry Partnership Agreement.

The Antarctic Fisheries Five Year Strategic Research Plan includes research for the Heard Island and McDonald Islands (HIMI) Fishery, Macquarie Island Toothfish Fishery (MITF) and CCAMLR Exploratory fisheries. The numbering is for ease of reference but does not reflect any order of priority.

SARAG and SouthMAC recognise that significant resources and funding will be required to complete all the items listed below. Given the current funding environment it is possible that not all of these will be completed within the five year timeframe. However, the Plan tries to present a picture of the level of work required to address issues in relation to the management of the fisheries.

The Antarctic Fisheries Five Year Strategic Research Plan should be read in conjunction with AFMA's Strategic Research Plan 2017 – 2022 (www.afma.gov.au).

	HIMI toothfish fishery	**Priority**	**2019**	**2020**	**2021**	**2022**	**2023**
1.	ARC Whale Depredation Research program Cost: $743,000 Funding source: Industry, ARC, AAD (in-kind support)	Funded	X	X			

	HIMI toothfish fishery	Priority	2019	2020	2021	2022	2023
2.	Ecology of the HIMI marine ecosystem - Study to address predator prey interactions, benthic ecology and biological oceanography. Refer also to AAD Five Year Work Plan for HIMI ecosystem work. Estimated cost: To be determined Possible funding source: IPA and FRDC	Low - Med					
3.	Application of MSE model for Harvest control rule. Estimated cost: Possible funding source:	Low					

	Macquarie Island Toothfish fishery	Priority	2019	2020	2021	2022	2023
4.	Macquarie Island Toothfish stock assessment & MSE structure Required biennially Cost: $176,228[1] (part of project below) Funding source: CSIRO, industry through AFMA levy base	High (funded 2019)	X		X		X
5.	Development of new toothfish stock assessment model CSIRO project funded through AFMA Research Fund Estimated cost: $176,228[2] (part of project above) Funding source: CSIRO, industry through AFMA levy base	Funded	X				
6.	Review of MITF biennial assessment Biennial assessment to be reviewed a few years after biennial assessment approach began in 2016/17. Estimated cost: up to $10,000 Possible funding source: Research provider and industry. For inclusion in next Macquarie Island assessment project	High			X		

[1] Note that $62,669 of the $176,228 is a CSIRO contribution to the project.

[2] Note that $62,669 of the $176,228 is a CSIRO contribution to the project.

	Macquarie Island Toothfish fishery	Priority	2019	2020	2021	2022	2023
7.	Ecological Risk Assessment of the Macquarie Island Toothfish Fishery Estimated cost: $20,000 (75% industry funded, 25% government funded) Funding source: Industry through AFMA levy base	Funded		X			
8.	Publish report (presented to SARAG 55) from the following research task: Use the HIMI Benthic Impacts study to inform and undertake an ERA for MITF, and identify changes required to ensure additional protection of benthic habitats at MITF. (Impact study has been completed and used by MSC however report has not been published.) Estimated cost: $50,000 Funding source: Industry	Funded - completed	X				

	CCAMLR Exploratory Fisheries	Priority	2019	2020	2021	2022	2023
9.	Evaluation of management procedure for CCAMLR Exploratory fisheries Estimated cost: To be determined Funding source: Government (in the past New Zealand has led this work)						
10.	Application of HIMI Benthic Impacts study to new and exploratory fisheries in CCAMLR. Ongoing discussion at CCAMLR Estimated cost: To be determined Funding source: Government	Medium					

	Research across multiple fisheries	Priority	2019	2020	2021	2022	2023
11.	All fisheries: Catch and effort data Compulsory completion of logs **Required annually** Estimated cost: Funding source: Industry levybase	High	X	X	X	X	X

	Research across multiple fisheries	Priority	2019	2020	2021	2022	2023
12.	All fisheries: Observer work, including collection of otoliths, collection of tagging data, ongoing monitoring including bycatch, wildlife observations, bird and mammal interactions including cetacean depredation Estimated cost: Refer to observer costs Funding source: Industry levybase and direct (government contribution 20%)	High	X	X	X	X	X
13.	HIMI, Macquarie and CCAMLR areas: Quantify the amount of illegal and non-reported catches of both target species and ecologically related species AFMA surveillance program and input from Coalition of Legal Toothfish Operators (COLTO) Estimated cost: Variable Funding source: Government	High	X	X	X	X	X
14.	Impact of environmental variability on the Patagonian Toothfish (*Dissostichus eleginoides*) fishery Cost: $586,621 Possible funding source: FRDC	Med-High Funded	X	X	X	Funded until June	
15.	Use of satellite storage tags on longlines, eg DST & Smart Tags, to record environmental data (raised by SARAG in 2017) Estimated cost: To be determined Funding source: Industry Partnership Agreement	Medium	X	X	X	X	X
16.	All fisheries: Genetics work of otoliths. Possibly part of a broader CCAMLR international genetics survey to determine provenance of toothfish in the market or inspected in port. Estimated cost: Funding source:	Low					