



Australian Government

Australian Fisheries Management Authority

The SARAG logo is a stylized fish shape, with a green upper half and a blue lower half, curving to the right.

**Sub-  
Antarctic  
Resource  
Assessment Group  
(SARAG)**  
MINUTES  
SARAG 62

8 SEPTEMBER 2020

## **SUB- ANTARCTIC RESOURCE ASSESSMENT GROUP (SARAG)**

**CHAIR:** Dr Malcolm Haddon

**Date:** 8 September 2020

**Venue:** Teleconference

### **Attendance**

#### **Members**

Dr Malcolm Haddon, Chair  
Dr Rich Hillary, CSIRO  
Dr Jemery Day, CSIRO  
Dr Philippe Ziegler, AAD  
Mr Malcolm McNeill, Industry Member  
Mr Rhys Arangio, Industry Member  
Mr Brodie Macdonald, AFMA  
Ms Sarah Kirkcaldie, Executive Officer, AFMA

#### **Observers**

Mr Trent Timmiss, AFMA  
Dr Heather Patterson, ABARES  
Mr Martijn Johnson, Industry  
Dr Jaime Cleeland, AAD

## **Introduction**

### **Agenda item 1 - Preliminaries**

The sixty second meeting of the Sub-Antarctic Resource Assessment Group (SARAG 62) was opened at 10 am on 8 September 2020 by the Chair, Dr Malcolm Haddon. Dr Haddon welcomed members and observers to the video conference meeting.

#### **1.1 Acknowledgment of Country**

The Executive Officer on behalf of all members and observers acknowledged the Traditional Owners of the land on which we met and also paid our respects to Elders past, present and emerging.

#### **1.2 Declaration of interests**

Dr Haddon asked members and observers to state their name and profession and declare any conflict of interest that they may have on specific agenda items.

Dr Haddon advised that he is both a CSIRO Honorary Fellow and an Adjunct Professor with the University of Tasmania, and is currently involved in two Fisheries Research and



Development Corporation (FRDC) projects. He declared he has no pecuniary interest in the sub-Antarctic fisheries.

Dr Hillary advised that he is employed by CSIRO and is the Principal Investigator of the Macquarie Island Toothfish Fishery (MITF) stock assessment. He also advised that he is a member of AFMA's Southern Bluefin Tuna Management Advisory Committee (SBTMAC) and Tropical Tuna RAG. Dr Hillary advised that he has no pecuniary interests in the sub-Antarctic fisheries.

Dr Day advised that he is employed by CSIRO and works on the MITF stock assessment. Dr Day advised that that he has no pecuniary interest in the sub-Antarctic fisheries.

Mr McNeill advised he is the Managing Director of Australian Longline P/L which holds various fishing rights in, and operates vessels in, the sub-Antarctic fisheries and New and Exploratory fisheries under the jurisdiction of Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Mr McNeill further advised he is a member of Sub-Antarctic Management Advisory Committee (SouthMAC) and Board member of the Coalition of Legal Toothfish Operators (COLTO). Mr McNeill was not aware of any investigation or prosecution action by AFMA against his Company or of any legal action taken by his Company against AFMA. Mr McNeill noted that the company is changing its name in April to Australian Longline Fishing Pty Ltd.

Mr Arangio advised that he is employed by Austral Fisheries P/L (Austral Fisheries) that owns Statutory Fishing Rights (SFRs) in the Australian sub-Antarctic fisheries and waters under the jurisdiction of CCAMLR. Mr Arangio further advised he is the Executive Officer of COLTO, as well as being a member of SouthMAC and AFMA's Commonwealth Fisheries Marine Mammal Working Group. He was not aware of any investigation or prosecution action by AFMA against his Company or of any legal action taken by his Company against AFMA.

Dr Ziegler advised that he is employed by AAD and is the Fishery scientist responsible for Heard Island and McDonald islands Fishery (HIMIF) work including the HIMI stock assessments. Dr Ziegler has no pecuniary interest in the sub-Antarctic and his salary is not connected to any research grants noting that he is a co-investigator on a current FRDC project and future FRDC projects. Dr Ziegler informed members that he is also a member of SouthMAC.

Mr Macdonald advised he is employed by the Australian Fisheries Management Authority (AFMA) as the Manager for sub-Antarctic fisheries at AFMA. Mr Macdonald advised he has no pecuniary interests in the sub-Antarctic fisheries.

Ms Kirkcaldie advised she is employed by AFMA as a Senior Management Officer and advised that she is also the Executive Officer for SouthMAC and SBTMAC. Ms Kirkcaldie advised that she has no pecuniary interests in the sub-Antarctic fisheries.

Dr Patterson advised she is an employee of the Department of Agriculture and is the Editor of the Australian Bureau of Agricultural Resource Economics and Sciences (ABARES) Fishery Status Reports. Dr Patterson noted that she had no pecuniary interest in the sub-Antarctic fisheries.

Mr Timmiss advised he is employed by AFMA as a Senior Manager, Tuna and International fisheries and that he is also the member on the Tropical Tuna MAC (TTMAC) and SBTMAC. Mr Timmiss advised that he has no pecuniary interests in the sub-Antarctic fisheries.



Mr Johnson advised he was attending as an observer to SARAG and is currently employed by Australian Longline Pty Ltd which holds various fishing rights in, and operates vessels in, the sub-Antarctic fisheries and New and Exploratory fisheries under the jurisdiction of Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Mr Johnson is not aware of any investigation or prosecution action by AFMA against Australian Longline Pty Ltd or any litigation entered in to by Australian Longline Pty Ltd.

### **1.3 Apologies and observers**

No apologies

### **1.4 Agenda**

SARAG adopted the agenda with no changes.

### **Agenda item 2 – Adoption of minutes from SARAG 61**

Members noted that the draft minutes from SARAG 61 were circulated for comment on 11 May 2020. Comments were received from Mr Malcolm McNeill, Mr Rhys Arangio and Dr Philippe Ziegler. Members noted that the minutes from the SARAG 60 meeting are now finalised.



### Agenda item 3 – Actions arising from SARAG 61

Item	Action arising	Status
1	<b>Patagonian Toothfish stock assessment update</b> (SARAG 61 Agenda item 8).	SARAG noted that Australia will submit a paper to the 2020 CCAMLR meeting that will provide an update on the HIMI Fishery and information regarding whether the stock is tracking according to the prediction of the 2019 stock assessment.
2	<b>Skate stock assessment</b> – AAD to prepare work on a skate stock assessment and present it to SARAG 62 (SARAG 61 Agenda item 9).	Members noted that this item was discussed under agenda item 9.
3	<b>Electronic monitoring trial</b> – AFMA agreed to present a report of the outcomes of the trial to SARAG 62 (SARAG 61 Agenda item 16a).	Members noted that this item was discussed under agenda item 12.
4	<b>Electronic monitoring trial (grenadier)</b> – CSIRO and Industry agreed to keep the RAG up to date (SARAG 61 Agenda item 16b).	Members noted that this item was discussed under agenda item 12a.
5	<b>Close kin genetics trial</b> – CSIRO agreed to provide a more detailed design of the project to show what will be done and also clarify the sampling technique (SARAG 61 Agenda item 16c).	Verbal update to be provided at the meeting.
6	<b>Impact of environmental variability on Toothfish fishery (TREV)</b> – Researchers to provide update on recent progress by the project team and discuss planned work for this year (SARAG 61 Agenda item 16d).	SARAG noted that a TREV meeting is scheduled for Tuesday 22 September

### Agenda item 4 – Correspondence

SARAG noted the following correspondence which had been received out-of-session since the last meeting in August 2019:

- An email dated 17 March 2020 from Sarah Kirkcaldie circulating the final report for the project titled ‘Stock connectivity of Antarctic Toothfish’; seeking comments from members on the draft minutes from SARAG 60;
- An email dated 11 May 2020 from Sarah Kirkcaldie seeking comments from members on the draft minutes from SARAG 61;



- An email dated 9 July 2020 from Sarah Kirkcaldie seeking individual member comments on the draft Annual Research Statement; and
- An email dated 10 August 2020 from Sarah Kirkcaldie seeking comments from members on the draft agenda for SARAG 62.

## Agenda item 5 - Fishing operations update

Mr Arangio and Mr McNeill provided SARAG with verbal updates on fishing operations in the HIMIF, MITF and CCAMLR Exploratory fisheries.

Mr Arangio noted that the the Covid-19 pandemic had an impact on the start of the season and the *Isla Eden* and *Corinthian Bay* had to sail with only one observer on board due to travel restrictions and not being able to get observer to Mauritius. Members noted that Austral Fisheries sought approval from the Australian Government and that the CCAMLR Secretariat was informed of the decision.

Members noted that sperm whales were prevalent from April – June with 5-6 different whales observed. Mr Arangio noted that fishing was good however, the *Corinthian Bay* triggered the 3 bird limit and had to cease longlining in the season extension. The *Corinthian Bay* attempted to recover lost gear for the remainder of April.

Mr Arangio noted that Austral fisheries now has two trawlers operating in the HIMIF. The *Atlas Cove* caught the Mackerel icefish quota noting that the fish were smaller. Members noted that the new vessel *Cape Arkona* will be departing soon to go to HIMIF and trap.

SARAG noted that Austral vessels only lost 35kms of longline gear in the 2019/20 season and in addition had recovered 60km of unidentified fishing gear. Members noted that industry was keen to ensure these numbers remained low.

Mr Arangio indicated that the company is expecting all vessels will be in Fremantle over summer and leaving from there for the 2020/21 season.

Mr McNeill noted that his vessels had issues leaving port due to Covid-19 and ended up chartering a flight from Sydney returning with vulnerable Australian citizens back to Australia. SARAG noted that the vessel did not leave until 14 May and the season was not as successful for them. Mr McNeill noted that the catch per unit effort was higher than normal and targeting bigger fish than normal (about 1 kg larger than normal). Mr McNeill noted that only 1-2 whales were encountered for about a day but they were fishing further south and in deeper waters. Members noted that the *Antarctic Chieftain* will return to Hobart to unload and this will be the last trip of this vessel. Mr McNeil noted that the new vessel (*Antarctic Aurora*) will arrive in Hobart around 22 September from Vietnam and will go to the exploratory fisheries. Mr McNeil noted that the *Antarctic Aurora* will conduct sea trials out of Hobart prior to going fishing

Mr McNeill noted that the Macquarie Island Toothfish fishery season was very up and down. The Company moved crew as quickly as they could but had to go earlier with the season started on 4 April. SARAG noted that there were no observer on the vessel but it had E-monitoring installed. Members noted that good size fish were caught in large numbers on the first trip, however, the catch rates declined. Members noted that Australian Longline Pty Ltd caught 540 tonnes of 555 tonnes TAC. Mr McNeill noted that there had been increased number of seals preying on the line when hauling and taking Patagonian Toothfish at the surface. The vessel also had to move away from the Northern area due to the number of Porbeagles.



Mr McNeill noted that the intention is that both vessels would fish in the Ross Sea in December and then the Antarctic Aurora would fish in East Antarctica.

Industry noted their appreciation of all Australian government departments to get the vessels sailing and also the huge commitment of the observers doing exceptionally long trips. Members noted that importance of data collection that the observers have undertaken. Members noted that the probability of deploying observers out of Mauritius is very low.

SARAG also noted the update provided by the AFMA observer section.

### **Observer Summary report on fishing operations completed during 2020\***

#### Observer deployment during COVID 19

AFMA suspended the Observer Program in March following careful consideration of the risks to the observers of contracting or spreading the virus and ensuring compliance with various governments COVID-19 social distancing and management measures. This decision made it difficult (and at times impossible) to place observers on vessels operating in the Southern Ocean. In response AFMA amended the HIMI Fishery SFR conditions to allow vessels to fish with a single observer. The MITF SFR conditions were amended to allow vessels to fish with an e-monitoring system and no observer.

Six observers have been deployed at HIMI and MITF (three AFMA, three CapMarine) on eleven fishing voyages.

Noting the reduced observer capacity on each voyage, and to ensure the health and wellbeing of the observers, AFMA and AAD modified the standard observer duties to account for the reduction in coverage. This reduced the amount of tagging, biological sampling, catch composition, wildlife observations, otolith removal, gonad staging, and conversion factor tests undertaken during voyages.

#### Observer deployments completed during 2020 to date\*

Since SARAG 61 Fishing operations update, eleven fishing voyages have been completed with reports and data submitted to the CCAMLR Secretariat. One voyage include in this paper was not included in the previous paper as the data hadn't been processed at the time of writing the paper for SARAG 61.

- Seven Heard Island and McDonald Islands Fishery (HIMI) voyages;
- Two Macquarie Island Toothfish Fishery (MITF) voyages ;and
- Two CCAMLR exploratory fisheries (1x Ross Sea and 1x East Antarctic) voyages.

#### Tagging

- 3400 toothfish were tagged at HIMI (724 recaptured);



- 152 skates were also tagged at HIMI (20 recaptured);
- 1101 toothfish were been tagged at Macquarie Island (172 recaptured);
- No skates were tagged or recaptured at MITF;
- 573 toothfish were tagged in Ross Sea (75 recaptured); and
- 223 toothfish were tagged in East Antarctic (3 recaptured).

\*Figures reported only include those trips completed since 2 February 2020.

## Heard Island and McDonald Islands Toothfish Fishery

Industry declared interest and left teleconference. SARAG agreed industry members could stay for all discussions and recommendations.

### Agenda item 6 – Mackerel icefish stock assessment

Members noted that AAD had prepared a stock assessment for Mackerel Icefish titled “*A preliminary assessment for mackerel icefish (Champsocephalus gunnari) in Division 58.5.2, based on results from the 2020 random stratified trawl survey*” for peer-review and consideration by CCAMLR’s Working Group on Fish Stock Assessments (WG-FSA) and Scientific Committee. However, no formal WG-FSA meeting was held and there is uncertainty on if there will be a Scientific Committee meeting.

Members noted that the 2020 survey showed a large 2+ cohort in the population and a high biomass. Projections run with both the Generalised Yield Model (GYM) software and the Grym were highly consistent. Based on the Grym implementation, catches of 1276 t in the 2020/21 season and 1047 t in the 2021/22 season satisfy the CCAMLR decision rules.

SARAG noted that the current Conservation Measure states that the catch limit for 2020/21 is 406 tonnes but recommended a catch limit of 1276 tonnes for 2020/21 and 1047 for 2021/22

SARAG noted that once the stock assessment has been considered by CCAMLR a TAC recommendation for Mackerel Icefish will be provided to SouthMAC before being considered by the AFMA Commission

### Agenda item 7 – Patagonian Toothfish stock assessment update

SARAG noted that WG-FSA-19 recommended an update on stock parameters, including recruitment indices from the trawl survey, and age-frequency data and tag-recapture data





from the fishery be presented to WG-FSA-20 to evaluate whether recruitment and the stock trajectory were consistent with those estimated by the stock assessments for Patagonian toothfish (*Dissostichus eleginoides*) fishery in HIMIF.

Members noted the paper presented by AAD that indicated that the stock trajectory is consistent with that predicted by the 2019 stock assessment model. Increases in the survey biomass and young fish in the survey catch composition also indicate a potential strong recruitment pulse in recent years.

## Longline survey

SARAG started discussions on conducting a random stratified longline survey (RSLs) last year and noted that there were differing ideas on how this would be conducted. Members noted that scientist and industry have begun discussions on objectives of a new FRDC project that includes the RSLs. CSIRO agreed to keep SARAG informed of the progression of the project (**Action arising 1**).

## Agenda item 8 – Bycatch limits for 2020/21 season

SARAG noted that no new assessments of bycatch species have been conducted since the limits were previously set for the 2019/20 season. SARAG agreed that bycatch limits from the current fishing season be rolled over to the 2020/21 fishing season.

### Heard Island and McDonald islands Fishery bycatch species:

<i>Macrourus caml</i> and <i>M. whitsoni</i>	409 tonnes
<i>M. halotrachys</i> and <i>M. carinatus</i>	360 tonnes
Unicorn Icefish ( <i>Channichthys rhinoceratus</i> )	1 663 tonnes
Skates and Rays ( <i>Bathyraja spp.</i> )	120 tonnes
Grey Rockcod ( <i>Lepidonotothen squamifrons</i> )	80 tonnes
All other species (each)	50 tonnes

Members noted that the recommended bycatch limits for the 2020/21 season will be provided to SouthMAC before being considered by the AFMA Commission.

SARAG noted that AAD is working with French scientists to improve the tagging of skates noting they are currently double tagged.



## Agenda item 9 – Skate and ray assessment

Dr Jamie Cleeland presented an update on the progress of the bycatch assessment for skates in the HIMI Fishery. Members noted that due to their deep-water, demersal existence little is known about the life history of the three species of skate, *Bathyraja eatonii*, *B. irrassa* and *B. murrayi*, most frequently taken as bycatch in the Heard Island and McDonald islands (HIMI) Patagonian toothfish Fishery. Dr Cleeland noted that *B. eatonii* is mainly taken in the Mackerel icefish fishery, *B. murrayi* is taken in the trawl fishery and the RSTS and *B. irrassa* is taken mainly in the longline fishery in deeper waters.

Dr Cleeland explained that they undertook an assessment using a generalized yield model (GYM). The following factors were included in the assessment; species grouping, natural mortality, age structure, growth, length-weight relationship, maturity, recruitment, biomass and selectivity. Members noted that growth and mortality had a large impact on the assessment so Dr Cleeland will be refining the assessment.

Members noted that future work includes:

- Further refinement of growth and selectivity parameters
- Test scenarios of post release mortality
- Quantify yield range from scenerios

AAD noted that changing bycatch catch limits in CCAMLR could be a long process as CCAMLR is reluctant to increase any bycatch limits.

Mr Arangio noted that Austral fisheries were trialing a new lighter trawl rig and hoped that this would reduce skate bycatch.

SARAG thanks Dr Cleeland for her presentation.



## CCAMLR & Exploratory Fisheries

### Agenda item 10 – Update from WG-EMM and WG-SAM

Members noted that informal meetings of WG-EMM and WG-SAM were held, however, no HIMI issues were discussed at these meetings.

### Agenda item 11 – Papers to WG-FSA, SC & Commission

SARAG noted that there is Heads of delegation meeting scheduled for 8 September 2020 to discuss if the Scientific and Commission meeting will be proceeding. AAD noted that the Scientific Committee has its own rules of procedure so not connected to Commission. SARAG noted that Conservation Measure cannot be agreed unless there is a Commission meeting.

AAD noted that the following papers have been prepared if there is a WG-FSA and Scientific Committee meeting:

#### HIMI

- RSTS
- Mackerel icefish assessment
- Toothfish fishery update

#### Exploratory fisheries

- Updated research proposal (58.4.2)
- Season report
- Stock assessment (including ageing)
- Bycatch analysis (led by France)

## Research

### Agenda item 12 – Recent research

#### a. Electronic monitoring trial

SARAG noted that AFMA has successfully implemented e-monitoring programs in the Eastern Tuna and Billfish Fishery and the gillnet and longline sectors of the Southern and Eastern Scalefish and Shark Fishery. In both fisheries, this has essentially ceased the deployment of on-board observers, except in cases where the deployment is warranted for specific management or research purposes.



Members noted that currently AFMA (and CCAMLR) relies heavily on the placement of two observers to undertake the range of data collection activities required to support assessment work and report on compliance with CCAMLR requirements. Going forward, AFMA is considering the feasibility of implementing an e-monitoring program, working alongside an observer to free up their time while also still having human observer capacity to collect biological samples and conduct more complicated research and data collection.

The AFMA member explained that electronic monitoring systems provide independent and auditable evidence of fishing behaviours including verification of:

- setting and hauling of fishing gear;
- catches (including bycatch, discards and protected species);
- mitigation device deployment;
- wildlife observations; and
- retained fish lengths.

Members noted that E-monitoring has proven to be effective in recording fishing operations in Toothfish fisheries, both at high latitudes in Ross and Amundsen Seas and in the MITF during rough winter conditions. The physical systems operated well and were able to capture 100% of fishing activities. Fishing operations were more continuous than in other fisheries where AFMA deploys e-monitoring and more hard drive exchanges were conducted compared to what was expected, but all hard drive exchanges were completed successfully.

Following the trial of e-monitoring in the Ross Sea and at Macquarie Island, AFMA sought advice from SARAG on the strategic implications of the potential implementation of e-monitoring, initially in the HIMI (outside April) and MIT fisheries. Industry highlighted that E-monitoring is a requirement of the Ross Sea client group.

Industry were supportive of progressing E-monitoring on the condition that it is cost effective. AFMA to develop a draft data collection plan for EM plus one observer in fisheries and times where this is not contrary to CCAMLR obligations (ie MITF and HIMI after April).

AFMA thanked Australian Longline Pty Ltd including Mr McNeill, shore staff, and crew who were moved due to cameras, noting that the level of cooperation is appreciated.



## **b. Creating an automated catch monitoring platform using AIML in the HIMI Patagonian toothfish longline fishery**

Members noted that in 2019 Industry and AFMA informally put Go-pros on Austral vessel. Members noted that 23 videos were recorded and 1200 images extracted with 6 camera views. The main species recorded were Patagonian Toothfish, Grenadier sp, Skates and rays and starfish. Members noted that 6 people did the count and there was variation. One issue encountered was the need to track fish to ensure they are not double counted.

SARAG discussed if the technology could be used to differentiate Grenadier sp. Mr McNeill agreed that footage from Australian Longline Pty Ltd would be provided to CSIRO.

SARAG agreed that CSIRO, AFMA and Archipelago Asia Pacific would meet and discuss ways to progress a Grenadier trial (**Action arising 1**)

### **Agenda item 13 – Recent research**

#### **a) Reviewing biological parameters**

SARAG noted the FRDC-CSIRO project titled “*Revisiting biological parameters and information used in the assessment of Commonwealth fisheries: a reality check and workplan for future proofing*” recently started. Members noted that the project team had briefly looked at the HIMIF and pulled out some of the key parameters that are important. Members noted that the project progression had been slowed down by Covid-19.

Members noted that the project is not very relevant to current fisheries as catch rate analysis is not used (and is also trawl) for assessment. Dr Day requested approval from industry to publish data. SARAG agreed that Industry would discuss with Dr Day and request removal of any sensitive data including latitudes and/or longitudes.

#### **b) Any other research**

There was no other research discussed at SARAG 62.

## **Environment**

### **Agenda item 17 - Environmental interactions and gear loss**



SARAG noted that during the 2019/20 HIMI Fishery fishing season 5,116,670 hooks were set (to 31 July 2020) and there were four seabirds and two seal interactions resulting in deaths.

- On 14 April 2020 a White-chinned Petrel was hooked and drowned while longline gear was being set at night
- On 16 April 2020 two White-chinned Petrel were hooked and drowned while longline gear was being set at night on
- On 22 June 2020 a Giant Petrel was tangled on the tori line and drowned while longline gear was being set
- Two Southern Elephant Seals were found dead after being hooked on longline gear on 15 April and 30 August 2020.

AFMA indicated that Australian fishing operations had one seal and no bird interactions with fishing gear that resulted in death in CCAMLR Exploratory Fisheries in the 2019/20 season

On 16 January 2020 a seal (unknown) was hooked and drowned while longline gear was being set

Members noted that there has been a significant decrease in the amount of gear lost in the HIMI Fishery in 2020 compared to 2019. The amount of gear recovered has also been greater than the amount of gear lost. Gear loss in the MITF increased in the 2020/21 season compared to the previous season. In 2019/20 Exploratory fisheries had a significant decrease in gear lost when compared to the previous season.

## **Other**

### **Agenda item 15 – Other business**

SARAG noted that the whale depredation project is due to finish in next 6 months with a French project finishing at the same time. Industry noted that COLTO are discussing progressing a new depredation project that would cover all Antarctic and sub-Antarctic fisheries that catch Toothfish.

### **Agenda item 16 – Next meeting**

SARAG agreed to hold the next SARAG meeting on Tuesday 4 May 2021. The key item for discussion will be the Patagonian Toothfish and Mackerel Icefish assessments and the upcoming CCAMLR meetings.

The meeting closed at 2:20 pm on Tuesday 8 September 2020.



# Sub-Antarctic Resource Assessment Group (SARAG) Meeting 62

## Final Agenda

Tuesday 8 September 2020

10.00am – 3:00pm

Teleconference

### Introduction

- |     |  |       |                 |
|-----|--|-------|-----------------|
| 1.  | Preliminaries  |       |                 |
| 1.1 | Declaration of interests   | Chair | For Discussion  |
| 1.2 | Apologies  | AFMA  | For Information |
| 1.3 | Adoption of Agenda   | Chair | For Decision    |
| 2.  | Minutes from SARAG 61  | AFMA  | For Noting      |
| 3.  | Action Arising   | AFMA  | For Discussion  |
| 4.  | Correspondence   | AFMA  | For Noting      |
| 5.  | Update on fishing operations<br>(HIMI, MITF, Exploratory, observers) | All   | For Information |

### Heard Island and McDonald Islands Fishery

- |    |                                   |          |                    |
|----|-----------------------------------|----------|--------------------|
| 6. | Mackerel icefish stock assessment | AAD      | For Recommendation |
| 7. | Patagonian Toothfish              |          |                    |
| a) | Spatial effort                    |          |                    |
| b) | Longline survey                   | ALL      | For Discussion     |
| 8. | Bycatch limits for 2020/21 season | AFMA/AAD | For Recommendation |
| 9. | Skate and ray assessment          | AAD      | For Discussion     |

### CCAMLR & Exploratory Fisheries

- |     |                                   |     |                |
|-----|-----------------------------------|-----|----------------|
| 10. | Update from WG-EMM & WG-SAM       | AAD | For Discussion |
| 11. | Papers to WG-FSA, SC & Commission | AAD | For Discussion |



## Research

- |     |   |       |                 |
|-----|---|-------|-----------------|
| 12. | E-monitoring  |       |                 |
|     | a) E-monitoring   | All   | For Discussion  |
|     | b) Creating an automated catch monitoring platform<br>Using AIML in the HIMI longline fishery | CSIRO | For Information |
| 13. | Recent research   | All   | For Information |
|     | a) Reviewing Biological Parameters – project overview   | CSIRO | For Information |
|     | b) Preliminary evaluation of catch prediction for<br>Patagonian Toothfish at Macquarie Is     | All   | For Discussion  |

## Environment

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|-----|--|------|------------|
| 14. | Environmental interactions and gear loss | AFMA | For Noting |
|-----|--|------|------------|

## Other

- |     |                |       |                |
|-----|----------------|-------|----------------|
| 15. | Other Business | Chair | For Discussion |
| 16. | Next Meeting   | Chair | For Discussion |

