



Australian Government

Australian Fisheries Management Authority



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

**FINAL MINUTES
SARAG 61**

2 MARCH 2020

SUB- ANTARCTIC RESOURCE ASSESSMENT GROUP (SARAG)

CHAIR: Dr Malcolm Haddon

Date: 2 March 2020

Venue: Australian Antarctic Division, Channel Highway, Kingston

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
Dr Heather Patterson, ABARES#
Mr Brodie Macdonald, AFMA
Ms Sarah Kirkcaldie, Executive Officer, AFMA

Observers

Mr Trent Timmiss, AFMA
Mr Martijn Johnson, Industry

#Telephone - Agenda items 1-6 only

Introduction

Agenda item 1 - Preliminaries

The sixty first meeting of the Sub-Antarctic Resource Assessment Group (SARAG 61) was opened at 9:10 am on 2 March 2020 by the Chair, Dr Malcolm Haddon. Dr Haddon welcomed members and observers including the new AFMA member, Mr Brodie Macdonald to his first SARAG meeting.

1.1 Acknowledgment of Country

The Chair 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

An apology was received from Dr Dirk Welsford.

1.4 Agenda

SARAG adopted the agenda with no changes.

Agenda item 2 – Adoption of minutes from SARAG 60

Members noted that the draft minutes from SARAG 60 were circulated for comment on 26 September 2019. 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 60

Item	Action arising	Status
1	Tags - AAD agreed to investigate if tags from the trawl fishery could be used in the stock assessment (SARAG 58 Actions arising 57).	At previous SARAG meetings, AAD informed members that they had not fully investigated if tags from the trawl fishery could be used in the stock assessment. At SARAG 61 AAD had no further update or developments and noted that completing this work was on the long term workplan.
2	Skate stock assessment – AAD to prepare work on a skate stock assessment and present it to SARAG 60 (SARAG 59 Agenda item 10).	Members noted that this would be discussed under Agenda item 9.
3	Skates – AFMA agreed to brief the observers on Austral Fisheries’ intentions regarding skates (SARAG 60 Agenda item 5).	SARAG noted that this action was completed and the observers were briefed.
4	Random Stratified Trawl Survey (RSTS) – Industry agreed that in future they will leave 35 tonnes of Mackerel Icefish quota for the RSTS and members agreed that this should be included in the Fisheries Assessment Plan (FAP) (SARAG 60 Agenda item 10).	SARAG noted that the requirement to leave 35 tonnes of Mackerel Icefish quota was included in the HIMIF FAP.
5	Replicate longline survey – AAD and industry need to have further discussions on the objectives and benefits of conducting a replicate longline survey (SARAG 60 Agenda item 16).	Members noted that this was discussed under Agenda item 10.
6	Climate change – AAD requested that at a future SARAG meeting there is a focused discussion on climate change (SARAG 60 Agenda item 20).	SARAG noted that climate change was discussed under Agenda item 18.

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 26 September 2019 from Sarah Kirkcaldie seeking comments from members on the draft minutes from SARAG 60;
- An email dated 9 January 2020 from Sarah Kirkcaldie seeking support for the Macquarie Island Toothfish Fishery bycatch limits for the 2020/21 and 2021/22 fishing seasons;



- An email dated 16 January 2020 from Sarah Kirkcaldie seeking individual member comments on the research proposal submitted to the AFMA Research Committee:
- An email dated 22 January 2020 from Sarah Kirkcaldie seeking comments on AFMA's review of its Exploratory Fisheries policy; and
- An email dated 13 February 2020 from Sarah Kirkcaldie seeking comments from members on the draft agenda for SARAG 60.

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 since the last SARAG meeting Austral Fisheries Pty Ltd had completed the 2018/19 longline season which ended with higher catch rates and only 125 tonnes of quota left in the water. Both companies noted that they only saw one to two sperm whales towards the end of October whereas they normally see more. Members noted that the longline vessels *Corinthian Bay* and *Isla Eden* returned to port for the summer and the *Atlas Cove* went back down to the HIMI Fishery to trawl for Mackerel icefish. Mr Arangio noted that the catch rates for Mackerel icefish were down on previous years at around 5 tonnes/day. Members noted that normally when icefish catches are low a lot of skates are caught but this year skate bycatch has been low even though they are not catching well. Mr Arangio further noted that the *Atlas Cove* had triggered the juvenile Mackerel icefish catch twice and had to move-on. The vessel also spent time in January searching for lost gear and recovered about 60km IWL. Members noted that the *Atlas Cove* was re-fitted in February before heading back down to the HIMI Fishery to complete the Random Stratified Trawl Survey. Industry noted that the *Isla Eden* had just completed a month's fishing in the Southern Indian Ocean Fishing Agreement Area. SARAG noted that the *Isla Eden* and *Corinthian Bay* will leave to go longline fishing at HIMI around 20 March 2020.

Mr McNeill noted that their catch rates also improved in the second half of the HIMI Fishery season. Australian Longline Pty Ltd put a second vessel into the Fishery towards the end of the season and caught all their quota plus some of Austral fisheries. SARAG noted that the average CPUE for Australian Longline has been consistent for the last five years and the average fish size has also been consistent even though there has been ups and downs within the season.

Mr McNeil advised that the *Antarctic Chieftain* then fished in the East Antarctica (CCAMLR exploratory fishery division 58.4.2) and caught 40 tonnes noting that this trip lost money as the vessel can only fish a small area and they have to spread gear out for research requirements. Industry expressed a desire to expand that fishery in future years. Members noted that the French also fished in same area and the Australian vessel got 3 tag returns although they are not sure whose tags. The *Antarctic Discovery* fished in the Ross Sea (Divisions 88.1 and 88.2) starting on 1 December 2019 and had a successful and long season and ended up down toward the iceshelf in 88.2.

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

Deployments

During 2019, sixteen fishing voyages have been completed in the Southern Ocean Fisheries:



- Twelve Heard Island and McDonald Islands Fishery (HIMI) voyages and
- Two Macquarie Island Toothfish Fishery (MITF) voyages.
- Two New and Exploratory voyages.

Tagging

- 6802 toothfish were been tagged at HIMI (1468 recaptured);
- 1976 skates were also tagged at HIMI (83 recaptured).
- 935 toothfish were been tagged at Macquarie Island (203 recaptured); and
- No skates were tagged or recaptured at MITF

Observer feedback

There were no issues with achieving the tag overlap required or with general assistance, and all vessel observer obligations were met. Any voyage specific feedback from a trip was raised directly with the fishing company.

Internet access and data allocation

At times an observer may need additional internet data access allocated to them. Industry members were asked to please advise their Captains to assist them with such requests.

New Observers

Six new AFMA observers and one CapMarine observer were trained and deployed on their first Southern Oceans voyage. AFMA worked with Capfish to pair new observers with experienced observers.

Thanks were given by these new observers to the crews from both companies for providing support and co-operation, which ensured their first voyage was a good introduction to Southern Ocean deployments.

Observer refresher

On 17-19 February AFMA and AAD ran a refresher course for all new AFMA observers. The purpose of the refresher was to fill gaps in knowledge and protocols identified post the new observer's first trip.

Topics covered included

- Fishlog data quality control, import/export exercises
- Equipment maintenance
- Health & Safety
- Priorities and time management
- Macrourid identification & gonad staging



- Extracting bycatch data for vessel
- CCAMLR Conservation Measures and SFR conditions interpretation
- Compliance
- Seabird identification
- Gear loss/retrieval reporting

Observers also benefitted from having Senior AFMA Observer Martin Tucker attend where he was able to share his extensive observer experience on all Southern Ocean's vessels and observer duties knowledge.

Macquarie Island Toothfish Fishery

Agenda item 6 – Extension of the Macquarie Island longline season

Members noted that in early 2018, AFMA received a request from Industry to extend the MITF longline season by one week at the end of the season. In February/March 2018, SARAG 57 and SouthMAC 36 considered the request and supported a one-week extension. The RAG and MAC also agreed that the observer report should be used to assess whether bird observations are higher in the first week in September compared to the last week in August.

Following SARAG 57 and SouthMAC 36, the AFMA Commission also supported the one-week extension to the 2018 longline season. The MITF statutory fishing rights conditions were amended to extend the 2018 longline season to 7 September 2018 but due to good catch rates early in the season, no fishing occurred in the extension period.

The AFMA observer explained that the season extension was rolled over to the 2019 longline season but again the catch rates were good, and no fishing occurred in the extension period. SARAG agreed that the one-week extension should be applied to the 2020 longline season. The longline season dates will be 15 April to 7 September 2020. Members noted that if fishing occurs in the season extension then the observer report for the 2020 trip will be used to assess bird observations. Members agreed that if fishing occurs, no further season extensions will be granted until the data from that season extension is reviewed by SARAG. SARAG further agreed that until fishing occurs between 1-7 September the season extension should remain in place.

The AFMA observer noted that the AFMA Commission will decide the Macquarie Island Toothfish Fishery Total Allowable Catch for the 2020/21 season next week. Members noted that the season starts on 15 April 2020. The next stock assessment will be presented to Members in early 2021.



Heard Island and McDonald Islands Toothfish Fishery

Agenda item 7 – William’s Ridge Southern Indian Ocean Fisheries Agreement (SIOFA) update

SARAG noted that at its Sixth Meeting of the Parties in July 2019, SIOFA adopted a Demersal Stocks Conservation and Management Measure (CMM 2019/15) to set a total allowable catch of 140t for toothfish on Williams Ridge. It also adopted a range of technical effort control measures which restrict the ability to catch the TAC, effectively reducing the available catch to a lower level. These technical measures include use of grid cells to spread effort where each cell can only be fished once per season; and a maximum number of hooks and lines that can be set in each grid cell.

The AFMA member explained that due to the omission of historical fishing activity on Williams Ridge in the calculation of Australia’s current fishing footprint in SIOFA, the feature is not currently fishable by Australian vessels. Members noted that AAD has just finalised a revised bottom fishing impact assessment (BFIA) with this previously omitted data to facilitate access by Australian vessels to William’s Ridge, including areas outside those fished by Australian vessels in the past. The BFIA will be presented to the SIOFA Scientific Committee at its next meeting on March 30 – April 3 2020 in La Reunion. Members noted that Spain had been fishing in the area since 1 December 2019 and had followed the Conservation measures and fished most of the blocks and had caught around 69 tonnes.

Members acknowledged that government agencies are not sure at the moment what will happen if meetings are canceled due to Covid-19. Members noted that currently most meetings are being postponed but it is likely that some meetings may be cancelled in some Regional Fisheries Management Organisations. Members noted that each organisation has its own decision making procedures and most of them need to decide annually on budgets, election of officers etc. Members noted that if a meeting didn’t go ahead government will be looking into mechanisms to get a decision on essential and important issues.

Industry members thanked the government agencies for prioritizing this issue as it is important to industry.

Agenda item 8 – Patagonian Toothfish stock assessment update

SARAG noted that the TAC of 3030 tonnes that was recommended by SARAG 60 was supported at CCAMLR, SouthMAC and the AFMA Commission. WG-FSA raised concerns regarding the estimated year-class-strength and the drop of the stock status below the target during the future projection period in the HIMIF stock assessment, but and AAD will be working with New Zealand and the United Kingdom on issues around the harvest control rule in the intersessional period.

Members noted that the CCAMLR decision rule has not been properly evaluated and welcomed that the planned work with NZ and the UK. The CSIRO member noted that the MITF is a also a suitable fishery to evaluate harvest control rules and suggested collaborating on this issue.

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.



Members noted that this paper will be presented at SARAG 62, prior to it being submitted to CCAMLR (**Actions arising 1**).

The AAD member advised that the new version of CASAL has been delayed and therefore has not been released yet. The new version is also unlikely to be available for the next stock assessment.

Agenda item 9 – Skate and ray assessment

At SARAG 59 in May 2019 members noted that the skates caught when trawling (shallow water skates) were different species to the skates caught when longlining (deeper water skates) for Patagonian Toothfish. Members discussed the potential of running an assessment for skates similar to one conducted for the two morphs of grenadier. AAD noted that this work was planned for the second half of 2019. Members noted that lots of skates have been tagged but there are not many returns.

At SARAG 60 in August 2019, AAD noted that they had looked at the available data and agreed to conduct assessments with the Generalised Yield Model (GYM) for the three major species. SARAG noted at that meeting that length, weight and external maturity data are available, however that there was no age data to estimate growth recruitment-at-age. Members noted that AAD aimed to re-do the 1998 assessment and indicated that the Random Stratified Trawl Survey gave acceptable estimates for shallow water skates but not the deeper water skates.

SARAG noted that a new scientist at AAD is currently working on the skate assessment, to be at the next SARAG meeting (**Action arising 2**).

However, the AAD member noted that at the moment CCAMLR is unlikely to agree to increase bycatch levels even if an assessment indicates that higher bycatch levels were sustainable..

Agenda item 10 - Replicate longline survey

SARAG noted that for several years' industry have been interested in the utility of conducting a replicate or random stratified random longline survey, potentially with the ultimate aim to replace the current trawl survey.

At SARAG 60 in August 2019, members noted that AAD have started progressing the project to design and conduct a replicate longline survey, however, members noted that AAD and industry needed to have further discussions on the objectives and benefits of conducting a replicate longline survey. It was noted that a trawl survey would continue to be required for mackerel icefish and that the current trawl survey provides an index of recruitment. It is likely that a longline survey would provide an index of abundance of older year classes.

SARAG had also discussed that fishing could be more structured to ensure tag releases were spread throughout the area of the fishery.

The AAD member explained at SARAG 61 that no further work has been done on the replicate longline survey.



Agenda item 11 – Trawl gear modification trial to reduce skate bycatch

At SARAG 59, Austral Fisheries put forward a proposal to either broaden or remove the current HIMI Regulations on trawl gear. The proposal includes the use of lighter gear and a larger mesh size but with a bobbin and disc size that is smaller than currently permitted in the *Fisheries Management (Heard Island and McDonald Islands Fishery) Regulations 2002*

At that meeting, SARAG supported Austral Fisheries running gear trials for 12 months either through SFR conditions or a scientific permit. SARAG also supported implementation of new gear requirements if the trial proves that the new gear specifications reduce bycatch.

Industry explained to members that they had organised a new trawl rig and they were hoping to use it to fish for icefish next summer under a scientific permit.

SARAG noted the update on the trawl gear modification to reduce skate bycatch.



CCAMLR & Exploratory Fisheries

Agenda item 12 – Outcomes of CCAMLR and deliverables

The AAD member noted that the 38th meeting of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR-38) was held in Hobart from 21 October to 1 November 2019

Members noted that the HIMI Fishery toothfish and icefish stock assessments and recommended sustainable catch limits were adopted by the Commission. CCAMLR also noted that the HIMI season extension trials had concluded and the core season (1 May – 14 September) and season extension periods (1-30 April (pre) and 15 September – 30 November (post)) were streamlined. SARAG noted that AFMA will continue to apply the three-seabird caught and killed mitigation measures for the season extension periods.

SARAG further noted that the Commission endorsed the removal of barriers (Conservation measure 25-02) for newly built vessels to access the season extension periods.

SARAG noted that exploratory fishing in Division 58.4.2 was endorsed by the Commission and one vessel each from Australia and France had undertaken fishing in the 2019/20 fishing season. However, members noted that consensus was blocked on the exploratory fishery in Division 58.4.1, and fishing did not proceed in this area. Members noted that Australia has started discussion on how to reach consensus at the CCAMLR 2020 meeting to enable Australia to fish in 58.4.1. Industry indicated that it is difficult to continue to operate if they only have access to a small area of 58.4.2. SARAG noted that one Australian vessel participated in Subareas 88.1 and 88.2.

Agenda item 13 – CCAMLR new and exploratory applications

The AFMA observer noted that on 11 February 2020, the Guide to CCAMLR New and Exploratory fisheries (the Guide) was sent out inviting proposals from interested Australian parties wishing to participate in New and Exploratory fisheries in the CCAMLR Area for the 2020/2021 fishing season.

SARAG noted that industry members need to submit a proposal in the format described under Section 4.2 of the Guide to AFMA by 10 March 2020. Relevant Australian government agencies will then carry out a preliminary examination of the proposals to determine if the applications fall within the CCAMLR guidelines for New and Exploratory fisheries.

Members noted that all Australian applications for New and Exploratory fisheries will be tabled at the CCAMLR Consultative Forum Meeting which is scheduled for late April 2020 and applicants will be invited to present their proposals.

Members acknowledged that the final decision on whether to lodge a proposal with CCAMLR is taken by the relevant Australian government agencies that are also responsible for final preparation and submission of the proposal documents. AFMA will advise applicants by May 2020 of the final decision and, if necessary, any amendments to the proposal that may be required before Australia would support the application. SARAG noted that final applications for New and Exploratory fisheries must be submitted by Australia to the CCAMLR Secretariat no later than 1 June 2020.



Agenda item 14 – Papers to WG-EMM & WG-SAM

SARAG noted that the following papers are planned to be submitted to the 2020 CCAMLR Working Group on meetings of the Ecosystem Monitoring and Management (WG-EMM) and WG-SAM.

- Decision rules with UK and NZ – related to HIMI stock assessment
- Divisions 58.4.1 and 58.4.2: Research fishing Progress report;
- Divisions 58.4.1 and 58.4.2: Updated research plan ; and
- Recoded Generalised Yield Model (GYM) in R - generic work.

Agenda item 15 – Papers to WG-FSA, SC & Commission

AAD indicated that the following papers are planned to be submitted to **WG-FSA**:

- HIMI Report on the 2020 Random Stratified Trawl Survey;
- HIMI Updated Mackerel icefish assessment;
- HIMI update Toothfish Fishery trends 2020;
- Divisions 58.4.1 and 58.4.2: Updated stock assessment; and
- Divisions 58.4.1 and 58.4.2: Ageing and growth.

Research

Agenda item 16 – Recent research

a. Electronic monitoring trial

The AFMA observer noted that last year Australian Longline Pty Ltd had volunteered the vessel *Antarctic Discovery* to undergo an electronic monitoring trial. The trial was government funded and cameras were installed by Archipelago Marine Research prior to the *Antarctic Discovery* fishing in the CCAMLR New and Exploratory fisheries in 88.1 and 88.2. Sensors were placed on the hydraulics and line hauler to detect fishing activity and all fishing activity was recorded on video cameras. Cameras were placed to monitor the set, the haul and fish on the conveyor belt (bird's eye view to check footage and take fish length shot) in the factory.

Members noted that the *Antarctic Discovery* was in Hobart a few weeks ago and AFMA now have decrypted hard drives and preliminary analysis of 'health statement' data indicate no issues with data collection.

SARAG noted that the observer was asked to manually measure a selection of fish and label these in front of the video camera. It is hoped that this process will allow the development of an automated fish measurement tool and this will allow it to be calibrated to observer measurements. AFMA further noted that it will look at seabird abundance and also discuss if electronic monitoring can be used to revise and reduce observer workload.



Members noted that the cameras are still on boat as they were a permanent installation. A forensic copy of the data is placed on the AFMA system so that it can be used as evidence. The drive is then sent to Archipelago for analysis and wiped before it is re-distributed to be used again. Members noted that AFMA can save the data, but it is usually wiped every seven months.

SARAG noted that a full report of the outcomes of the trial will be presented to SARAG at its August meeting (**Actions arising 3**).

b. Electronic monitoring trial (grenadier)

Austral Fisheries Pty Ltd explained that they were approached by CSIRO to set up an electronic monitoring system on the vessel *Atlas Cove*. A single camera was installed with a bird's eye view of the hauling, and data has been collected on one trip and sent back to CSIRO. SARAG noted that the aim of the trial is to determine whether CSIRO's machine learning algorithms can make sense of a toothfish vessel hauling station configuration to accurately count toothfish, skate and grenadier.

Members noted that the system counts fish as they come up (currently skippers manually count as they come up) and can identify toothfish, skate and grenadier. Members noted that the species of grenadier all look very similar which causes a problem. Members noted that the software identifies fish with confidence levels and was working fairly well given that there is limited data.

Members noted that another trial will be done this year and CSIRO and Industry will keep the RAG up to date (**Action arising 4**).

c. Close kin genetics trial (MITF)

SARAG noted that CSIRO have not put together a proposal for this project and noted that there are three steps before this project can be fully developed:

1. Determine sample sizes (CSIRO) – CSIRO had made calculations on sample size before the maturity was changed. CSIRO initially calculated that 50 pairs would be required but with the re-calculation of maturity that number may have be reduced to 20-30 pairs;
2. Sample procedure (CSIRO and industry) – industry noted that it is not easy to do sampling, and industry and CSIRO need to discuss the best process for collecting the samples eg fin clips which worked best on grenadiers but noted the need to ensure there is no contamination; and
3. A new geneticist to be employed (CSIRO).

Members noted that tissues samples were collected last year and are good to use and that it does not matter if the methodology changes to fin clips. CSIRO explained that they have the storage facilities and that the crews on the boat would be collecting all the data.

CSIRO agreed to provide a more detailed design of the project to show what will be done and also clarify the sampling technique (**Action arising 5**).



d. Impact of environmental variability on Toothfish fishery (TREV)

SARAG noted that this FRDC funded project started about a year ago and the broad aims are:

- To investigate the impacts of environmental variability on toothfish catch rate (and other fisheries indicators); and
- To understand the likely impacts of long-term climate change on the Toothfish fishery in the Australian EEZ on the Kerguelen Plateau and Macquarie Island.

Members noted that in August 2019, a workshop was conducted that compile data sources for the climatology model and updated the quantitative model of factors that could influence catch rates at HIMIF. .

SARAG noted that a meeting is scheduled for Wednesday 4 March 2020 to outline recent progress by the project team and discuss planned work for this year. Industry will be providing the researchers with a brief summary of how the season went last year and any further insights into impacts of environmental variability. The outcomes of this meeting will be presented to the next SARAG meeting in August 2020 (**Action arising 6**).

e. Environmental and ecosystem drivers of catch efficiency within Australia's Toothfish fisheries

The CSIRO member provided a verbal update on this project noting that it is a separate project but will run in parallel with TREV and with objectives referring to TREV.

SARAG noted that the differences between the two projects are:

1. Oceanography –currently detail are inadequate and the aim is to get a resolution that is more representative;
2. Acoustic - a lot of acoustic data has been collected and CSIRO will be examining what this information tells us regarding environmental changes;
3. Analysis – will be more focused on geo-statistical methods, and dealing with spatial/temporal variation, as well as identifying what are the drivers of change.

SARAG noted this project is due to start in March and also incorporates the MITF.



f. Trace Element Toothfish Traceability

SARAG noted that under the Southern Ocean IPA, Austral Fisheries has undertaken a pilot program with the objectives of chemically profiling Patagonian Toothfish from the HIMI Fishery which will allow for the verification of the provenance of toothfish product that is labelled as coming from HIMI in the marketplace.

Industry explained that counterfeit versions of Austral's Glacier 51 Toothfish brand are being sold in international markets, and started this project to be able to provide verifiable proof that the toothfish product carrying the G51 label is in fact HIMI fish. Initial results of the research show that there are small variation in some elements depending on when sample was taken in the HIMIF with six different element profiles identified. It is hoped that eventually, with more testing of product from other fisheries, it should be possible to decipher from which fishery the counterfeit product is being sourced from. SARAG noted that if Industry have proof of traceability they will approach COLTO and MSC to see if there is interest in those organisations to pursue do more work on traceability.

Industry noted that this process may also have additional scientific benefits with regard to stock structure and movement, but we will not know the potential of this until more samples are analysed.

g. Any other research

AAD noted that there had been a few changes in the AAD research team. with. Jaimie Cleeland and Genevieve Phillips (both Research Scientists) have replaced Jim Dell and Peter Yates, and Andy Nicholls (Ageing Technician) have now joined the team at AAD. Members further noted that Gabrielle Nowara had recently retired and SARAG thanked Ms Nowara for all her invaluable work and contribution to SARAG over a number of years.

Environment

Agenda item 17 - Environmental interactions and gear loss

SARAG noted that during the 2018/19 HIMI Fishery fishing season 17,745,965 hooks were set and four seabirds and five marine mammals were killed as a result of interactions with fishing gear in the HIMI fishery:

- on 22 June 2019 a Southern Giant Petrel was hooked on longline gear when setting and drowned;



- on 31 October 2019 a white chinned petrel was tangled by a snood when setting and presumed drowned;
- four Southern Elephant Seals were found dead after being tangled in longline gear on 16 August 2019, 21 August 2019, 14 October 2019 and 11 November 2019;
- one Southern Elephant Seal was found dead after being hooked on longline gear on 10 October 2019; and
- two White chinned Petrels were found dead after being tangled in the longline gear on 5 November 2019 and 19 November 2019.

During the MITF in the 2019/20 season 1,797,020 hooks were set with no TEP wildlife interactions with fishing gear that resulted in a death. However, members heard there were 15 Porbeagle sharks killed as a result of interactions with fishing gear.

Australian fishing operations had no bird interactions with fishing gear that resulted in death in CCAMLR Exploratory Fisheries in the 2019/20 season. Members noted that one seal (unidentified) was killed in CCAMLR statistical area 88.2 on 16 January 2020 as a result of interactions with fishing gear.

Members noted that there has been a significant increase in the amount of gear lost in the HIMI Fishery in 2019 compared to 2018. The amount of gear recovered was similar to the previous season.

SARAG further noted that gear loss in the MITF increased in the 2019/20 season compared to the previous season but gear recovery was very similar to the amount lost.

In 2018/19 Exploratory fisheries had a significant increase in gear lost when compared to the previous season.

Industry advised SARAG that the vessel Atlas Cove had recovered 60km of integrated weighted line in December 2019 and January 2020. Industry noted that some of this gear can be re-used and typically when gear is recovered there is no fish on the line. Industry further noted that the length of line lost (if the line lost is too short it is harder to recover), how deep set the line was and also weather can all be factors when attempting to recover gear.

AFMA agreed to provide an additional column in the annual table with gear loss as a proportion of number of hooks set (**Action arising 7**).

Australian Longline noted that they were investigating using sonars, which are currently used in the oil and gas industry, to better locate lost gear. Industry stated that depending on the amount of money spent you can get bearings or latitudes and longitudes of the lost gear. Members noted that the pingers cost between \$5000-20000 each and the transducer is more expensive. Australian Longline indicated that they may trial using sonars at Macquarie Island and noted that they would be speaking to Dr Paul Tixier to discuss if the use of sonars has an impact on whales.

Agenda item 18 – Climate Change Project

SARAG noted that the Adaptation of Commonwealth Fisheries to Climate Change project (FRDC project 2016-059) which commenced in early 2018 held a second stakeholder workshop on 26 September 2019 to:



- test stakeholder support for the climate impact risk assessment approach and methodology developed and review the preliminary results of the analysis of the climate risk assessment applied on two case study fisheries;
- consider the applicability of the risk assessment methodology to other fisheries/sectors;
- review key elements of the fisheries management system relevant to risk assessment; and
- seek stakeholder input into the development of the climate adaptation tools including a manual for fisheries managers and a survey.

SARAG noted that a third workshop is planned for 4 March 2020 where the HIMI Fishery will go through the climate adaptation project methodology. Members noted that the completion of the project is still expected by June 2020.

Other

Agenda item 19 – Other business

Members noted that in 2019 there was a Statutory Fishing Right change in HIMI Fishery that enabled industry to dump offal in an area in the west of the Fishery in waters deeper than 2500m. Industry noted that in the 2018/19 season they utilized the new condition three times and gained an extra five days of fishing. SARAG noted that the observer monitored bird numbers whilst the offal was being dumped.

Agenda item 20 – Next meeting

SARAG agreed to hold the next face-to-face SARAG meeting be held on Tuesday 8 September 2020. The key item for discussion will be the Mackerel icefish assessment and the upcoming CCAMLR meetings.

The meeting closed at 1:20 pm on Monday 2 March 2020.



Sub-Antarctic Resource Assessment Group (SARAG) Meeting 61

Final Agenda

Monday 2 March 2020

9.00am – 5:00pm

Mawson Conference Room 2

Australian Antarctic Division – Channel Highway, Kingston

Introduction

- | | | | |
|-----|--|-------|-----------------|
| 1. | Preliminaries | | |
| 1.1 | Acknowledgement of Country | Chair | For Information |
| 1.2 | Declaration of interests | Chair | For Discussion |
| 1.3 | Apologies | AFMA | For Information |
| 1.4 | Adoption of Agenda | Chair | For Decision |
| 2. | Minutes from SARAG 60 | AFMA | For Information |
| 3. | Action Arising | AFMA | For Discussion |
| 4. | Correspondence | AFMA | For Discussion |
| 5. | Update on fishing operations
(HIMI, MITF, Exploratory, observers) | All | For Information |

Macquarie Island Toothfish Fishery

- | | | | |
|----|--------------------------------------|------|-----------------|
| 6. | Extension of Macquarie Island season | AFMA | For Information |
|----|--------------------------------------|------|-----------------|

Heard Island and McDonald Islands Fishery

- | | | | |
|-----|---|----------|-----------------|
| 7. | William's Ridge SIOFA update | AFMA/AAD | For Information |
| 8. | Patagonian Toothfish stock assessment update | AAD | For Discussion* |
| 9. | Skate and ray assessment | AAD | For Information |
| 10. | Replicate longline survey | AAD | For Information |
| 11. | Trawl gear modification trial to reduce skate bycatch | Austral | For Discussion |



CCAMLR & Exploratory Fisheries

12.	Outcomes of CCAMLR and deliverables	AAD	For Discussion*
13.	CCAMLR new and exploratory applications	AFMA	For Information
14.	Papers to WG-EMM & WG-SAM	AAD	For Discussion
15.	Papers to WG-FSA, SC & Commission	AAD	For Discussion

Research

16.	Recent research		
h.	Electronic monitoring trial	AFMA	For Information
i.	Electronic monitoring trial (grenadier)	Industry	For Information
j.	Close kin genetics trial (MITF)	CSIRO	For Information*
k.	Impact of environmental variability on Toothfish fishery	All	For Discussion
l.	Environmental and ecosystem drivers of catch efficiency within Australia's Toothfish fisheries	Industry	For Information
m.	Trace Element Toothfish Traceability	Industry	For information
n.	Any other research	All	For Discussion

Environment

17.	Environmental interactions and gear loss	AFMA	For Information
18.	Climate Change	AFMA	For Information

Other

19.	Other Business	Chair	For Discussion
20.	Next Meeting	Chair	For Discussion

* Verbal update, no agenda paper provided

