



Australian Government

Australian Fisheries Management Authority



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

**FINAL MINUTES
SARAG 58**

29 AUGUST 2018

SUB- ANTARCTIC RESOURCE ASSESSMENT GROUP (SARAG)

CHAIR: Prof John Buckeridge

Date: 29 August 2018

Venue: Australian Antarctic Division, Channel Highway, Kingston

Attendance

Members

Prof John Buckeridge, Chair
Dr Rich Hillary, CSIRO
Dr Philippe Ziegler, AAD
Dr Dirk Welsford, AAD
Mr Martin Exel, Industry Member
Mr Malcolm McNeill, Industry Member
Ms Stephanie Martin, AFMA
Ms Sarah Kirkcaldie, Executive Officer, AFMA

Observers

Dr Jemery Day, CSIRO
Mr Trent Timmiss, AFMA
Mr Luke Robertson, AFMA
Mr Rhys Arangio, Industry Member
Mr Tim Lamb, AAD

Introduction

Agenda item 1 - Preliminaries

The fifty-eighth meeting of the Sub-Antarctic Resource Assessment Group (SARAG 58) was opened at 9:00 am on 29 August 2018 by the Chair, Professor John Buckeridge.

1.1 Declaration of interests

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

Professor Buckeridge 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 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.

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 CCAMLR. Mr McNeill further advised he is a member on SouthMAC, 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 Exel advised that he is the General Manager, Environment and Policy, Austral Fisheries Pty Ltd. Austral Fisheries P/L owns Statutory Fishing Rights (SFRs) in the Australian sub-Antarctic fisheries and waters under the jurisdiction of Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Mr Exel also declared that he is a Director of

the Institute of Marine and Antarctic Studies (IMAS), Member and public officer of the Commonwealth Fisheries Association (CFA), member of the South East Trawl Fishing Industry Association (SETFIA), Deputy Chair of the Great Australian Bight Industry Association, Member of Coral Sea Fishers Association. Mr Exel further advised that he is a member of the "National Benefit Assessment Panel" for the Marine National Facility (the RV Investigator) and a Member of the CSIRO Marine and Atmospheric Division review panel. 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 Welsford advised that he is employed by the Australian Antarctic Division (AAD) and no research grants contribute towards his salary. Dr Welsford advised that AAD get core funding but also seek grants from Fisheries Research and Development Corporation (FRDC) and AFMA. However, members noted that Dr Welsford salary was not connected to the FRDC grants. Dr Welsford further advised he is the Scientific Committee representative to CCAMLR, Chair of the Working Group for Fish Stock Assessments (WG-FSA) and a member on the Torres Strait Scientific Advisory Committee.

Dr Ziegler advised that he is employed by AAD and is the Fishery scientist responsible for 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 FRDC project and future FRDC projects. Dr Ziegler informed members that he was recently appointed to SouthMAC.

Ms Martin advised she is employed by the Australian Fisheries Management Authority (AFMA) as the Acting Manager for sub-Antarctic fisheries at AFMA. Ms Martin advised she 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 Sub-Antarctic Management Advisory Committee (SouthMAC) and the Southern Bluefin Tuna MAC (SBTMAC). Ms Kirkcaldie advised that she has no pecuniary interests in the sub-Antarctic fisheries.

Mr Arangio advised that he is an observer to SARAG. Mr Arangio is employed by Austral Fisheries P/L that owns Statutory Fishing Rights (SFRs) in the Australian sub-Antarctic fisheries and waters under the jurisdiction of Commission for the Conservation of Antarctic Marine Living Resources (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 Jemery 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 Trent Timmiss advised he is employed by AFMA as a Senior Manager, Tuna and International fisheries 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 Luke Robertson advised that he is a graduate from the Department of Agriculture and Water Resources completing a rotation at AFMA and has no pecuniary interests in the sub-Antarctic fisheries.

1.2 Apologies and observers

Apologies were received from CSIRO member Dr Malcolm Haddon who has retired (as a consequence of his retirement, Dr Haddon is no longer a member on SARAG), and the ABARES observer, Dr Heather Patterson. SARAG welcomed observers Mr Trent Timmiss, Mr Rhys Arangio, Mr Luke Robertson and Mr Tim Lamb as observers to SARAG.

1.3 Agenda

SARAG adopted the agenda with no changes (Attachment A)

Agenda item 2 – Adoption of minutes from SARAG 57

Members noted that the draft minutes from SARAG 57 were circulated for comment on 29 March 2018. Comments were received from Mr Martin Exel, Mr Malcolm McNeill and Mr Arangio. Members noted that the minutes from the SARAG 57 meeting are now finalised.

Agenda item 3 – Actions arising from SARAG 57

Item	Action arising	Status
1	Tags - AAD agreed to investigate if tags from the trawl fishery could be used in the stock assessment.	At SARAG 57 members noted that AAD provided a verbal update and stated that there had been no change since the last SARAG meeting. AAD stated that there was still no change (Action arising 1).
2	South Georgia - CSIRO agreed to circulate a paper on South Georgia setting a lower TAC than presented to CCAMLR	SARAG noted that this action was completed. Dr Hillary circulated the South Georgia paper on 1 March 2018.
3	Porbeagle shark - EO to circulate draft paper on the status of the Southern Hemisphere porbeagle shark.	Members noted that this action was completed. The Porbeagle shark paper was distributed to members on 29 September 2017.
4	Joint Australia-France research action plan - AAD to circulate terms of reference.	At SARAG 57, the AAD member noted that there are still ongoing discussions regarding

		<p>the final ToR. Members noted that the ToRs were not discussed at the recent Kerguelen symposium but AAD will follow up and provide the final ToRs. At SARAG 58 AAD noted that the ToR have still not been finalised by France but Australia had accepted them.</p>
5	<p>Macquarie Island longline season extension - observer report to be used to assess whether bird observations are higher in the first week in September compared to the last week in August.</p>	<p>Members noted that no vessels will be fishing at MITF during the season extension. Industry members declared an interest and left the room. The remaining members agreed that AFMA should extend the MITF longline season by a week for another year (2019) (Action arising 2). Members noted that the company has a spotless record regarding seabird mitigation.</p>
6	<p>HIMIF season extension trial - AFMA and AAD to discuss appropriate measures (performance criteria) to determine the success of the trial.</p>	<p>Members noted that this action item was discussed under agenda item 13.</p>
7	<p>Ecological Risk Assessment (ERA) - AFMA to provide CSIRO with the final comments on the draft ERA and request a new version of the document and then place them on the AFMA website.</p>	<p>SARAG noted that this action was completed. Comments were provided and the final ERAs will soon be on the AFMA website.</p>
8	<p>ERA - SARAG to write to Dr Cathy Bulman and Dr Miriana Sporcic and thank them for all their hard work and dedication producing the three ERAs.</p>	<p>Members noted that this action item will be completed as soon as the ERA's are considered by the AFMA Commission.</p>

9	Observers - the Executive Officer to add a new section (observer update) to standing agenda item 5 - Update on fishing operations	SARAG noted that this action was completed. The observer update has been added to the agenda and a paper provided.
10	HIMI Fishery Assessment Plan 2018-2020 - industry to provide further comment out-of-session and AFMA would then finalise the FAP.	SARAG noted that this action was completed. The final HIMIF FAP was circulated to members on 20 March 2018.
11	Estimation of natural mortality (M) - AAD to discuss work on estimating M at the next SARAG meeting	AAD noted that they tried the CSIRO approach and did a simulation which gave an estimate of M. This was applied to the longline and tag data but they do not have an estimate of natural mortality yet. Members noted that a manuscript is being prepared.
12	Skates/ray - AAD agreed to consider what are appropriate, reliable indicators of skate and ray populations and what data is required to assess indicators	AAD stated that there is a project in the 5-year Southern Ocean fisheries work plan to look at this.
13	AFMA supplementary observer report - AFMA to include a new question on the AFMA supplementary observer report asking for suggestions on additional research for Antarctic fisheries	SARAG noted that this action was completed. A new section has been added to the AFMA supplementary report.
14	Quota price information - AFMA agreed to provide information on why quota price information was now required to be published	Members noted that this action was completed. An email was sent to members on 2 July 2018 providing the information.
15	Draft Seabird Bycatch Strategy - Members agreed to provide any comments by 9 March 2018.	SARAG noted that this action was completed. Members provided comments as agreed.

16	Climate change - Dr Hillary to let IMAS know that SARAG is interested in the climate reports	All members agreed to provide any climate change reports as they become available.
17	Indigenous and recreational membership on RAGs - The Executive Officer agreed to provide SARAG's comments to the AFMA Commission to inform its views on future RAG appointments	Members noted that this action was completed. The comments provided during SARAG 57 were given to the AFMA Commission.

Agenda item 4 – Correspondence

SARAG noted the following correspondence which had been received out-of-session since the last meeting in February 2018:

- An email dated 1 March 2018 from Philippe Ziegler informing members that AAD had provided all the Macquarie Island toothfish fishery data to CSIRO for the next assessment;
- An email dated 1 March 2018 from Rich Hillary providing members with the South Georgia MEY and IUU patrol papers;
- An email dated 20 March 2018 from Jo Fisher providing members with the final HIMI Fishery Assessment Plan for the 2017-18 and 2018-19 fishing years;
- An email dated 26 March 2018 from Jo Fisher providing members with the final MIT Fishery Assessment Plan for the 2017-18 and 2018-19 fishing years;
- An email dated 29 March 2018 from Sarah Kirkcaldie providing members with the final HIMI Fishery Assessment Plan for the 2017-18 and 2018-19 fishing years;
- An email dated 29 March 2018 from Sarah Kirkcaldie seeking comments on the draft SARAG 57 minutes;
- An email dated 17 April 2018 from Sarah Kirkcaldie seeking comments on the draft Fisheries Management Paper 15 – Science Quality Assurance;
- An email dated 23 May 2018 from Sarah Kirkcaldie requesting to change the date of SARAG 58;
- An email dated 21 June 2018 from Jo Fisher seeking comments from members on the draft Antarctic Fisheries 5 year Strategic Research Plan 2019-2023;
- An email dated 2 July 2018 from Jo Fisher providing information on AFMA's collection of SFR trading and price information;
- An email dated 5 July 2018 from Sarah Kirkcaldie, providing members with a link to the most recent edition of the Australian Antarctic Magazine;
- An email dated 8 August 2018 from Sarah Kirkcaldie attaching the draft agenda for SARAG 58 to be held on Wednesday 29 August 2018; and

- An email dated 9 August 2018 from Sarah Kirkcaldie attaching for information the NSW FRDC project titled “Developing automated data cleansing and validation processes for fisheries catch and effort data”.

Agenda item 5 - Fishing operations update

Mr Arangio and Mr McNeill provided SARAG with verbal updates on fishing operations in the Heard Island and McDonald islands Fishery (HIMIF), Macquarie Island Toothfish Fishery (MITF) and CCAMLR Exploratory fisheries.

Mr Arangio noted that the 2017/2018 season started with the fishing vessel *Atlas Cove* taking on a full load of icefish and finishing Random Stratified Trawl Survey in March and April 2018. Members noted that it was the second highest RSTS catch for Evitas. Mr Arangio noted that all three Austral Fisheries Pty Ltd boats then began longline fishing and are currently all on their second trips to the HIMIF and will be fishing until the end of the season. SARAG noted that catch rates are on average 150g/hook which is down on previous years. Mr Arangio stated that there has been some interactions with sperm whales at similar levels to recent years and the boats were seeing them up to June. Members noted that Austral Fisheries were continuing CTD (conductivity, temperature and pressure) tag deployment with observers. Mr Arangio stated that depending on fuel levels the *Atlas Cove* may longline until the end of November and then go straight into trawling icefish starting in the new season on 1 December 2018.

Mr McNeill stated that Australian Longline had a later start in the HIMIF due to issues with observers noting that the fishing vessel *Antarctic Chieftain* had two capfish observers for its first trip. SARAG noted that fishing had been positive this season for Australian Longline Pty Ltd with an increase in CPUE although the average size of the Patagonian Toothfish were slightly smaller. Mr McNeill noted that they had encountered whales similar to Austral Fisheries Pty Ltd. Members further noted that pilot whales had been sighted but they were not sure if there had been any depredation. Mr McNeill stated that the vessel had lost approximately 12,000 hooks but had recovered 9,500 noting that the recovered gear included illegal, unreported and unregulated (IUU) gear.

Mr McNeill noted that a typical MITF season starts well and then slows down, however, this season they were experiencing catches double to triple what was expected and had caught all their quota by 6 August 2018. SARAG noted that the vessel lost 60 Patagonian Toothfish to fur seals and that they had caught a few Porbeagles (dead and alive). Members noted that the vessel unloaded in Hobart and is now back in Nelson and getting ready for fishing in the Ross Sea.

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

Deployments

From 1 December 2017 to date (2/08/2018) there has been seven fishing voyages (579 days) in Southern Oceans with an AFMA Observer deployed onboard six. Two Exploratory Fisheries trips, one Macquarie Island Toothfish Fishery (MITF) trip, and three Heard Island and McDonald Islands Fishery (HIMI) trips.

Tagging

There has been 1,817 TOP tagged and released at HIMI with three fish being recaptured and re-released. At MITF there has been 369 TOP tagged and released with one fish being

recaptured and re-released. For the Exploratory trips there was 773 TOA tagged and released and five TOP tagged and released with no recaptures.

Observer feedback

On the whole observers have indicated that crew are generally friendly and co-operative in regard to observer requirements, with no issues with tagging or general assistance. Any company/ trip specific feedback from an observer is provided directly to the company by the Technical Co-ordinator.

Internet access

Internet access via WIFI for observers on all Southern Oceans vessels is still pending. The Observers look forward to there being a consistent standard across all operators to provide adequate access to communication technology, providing reliable independent and secure communications between observer and professional and private support services and family.

Requests for sample and data collection by the Observers

Members noted that any requests for Observers to collect data or samples that may have an effect on observer duties and priorities will need to go to SARAG in order for the request be assessed against fishery management data priorities. For any request the first point of contact should be AFMA. The following should be considered.

- 1) There needs to be a clear scientific need to collect samples – requests will need to be approved by one of the science representatives to SARAG (Dirk Welsford/Phil Ziegler)
- 2) Any additional workload for the observer needs to be approved by the AFMA Observer Program, and may require negotiation to reduce workload in another area to compensate.
- 3) All workplace health and safety issues need to be addressed (for example chemical handling and storage).
- 4) Any specialised sample storage, labelling, collection, etc., materials that may be required are supplied to the vessel before it departs.
- 5) Adequate instructions are provided to the observer.
- 6) All appropriate permits need to be in place.
- 7) A plan for freighting any samples back to whoever requested it must be in place.

Vessel re-fits

The AFMA observer section requested that if a vessel is to be re-fitted in the future, the Observer section and AAD would like the opportunity to be involved in discussions surrounding the observer workstation needs and WH&S considerations.

Australian Antarctic Medal

SARAG congratulated Australia's longest serving fisheries observer, Martin Tucker who was recently awarded the Australian Antarctic Medal (AAM) which is awarded for outstanding service in scientific research or exploration in connection with an Australian Antarctic expedition or for support of such work. Mr Tucker was awarded the Australian Antarctic Medal for his scientific work as a Southern Ocean Fisheries observer with the AFMA Observer Program.

Mr Tucker has been a valued part of the Observer program since 1991 and has spent some 21 years as a Southern Oceans Fisheries Observer undertaking 32 voyages equating to 2,790 days in the Southern Oceans including CCAMLR Exploratory Fisheries, MITF, and HIMI. His longest single trip has been 143 sea days.

Members noted that Mr Tucker's data quality and report writing is exceptional and is the measuring stick to which all observer data is measured. He always goes above and beyond the expectations of his duties and is always happy to share his knowledge and experience with new and existing observers.

New Observers

Members noted that there have been two new observers trained up by AFMA and AAD for Southern Oceans trips this season, Jeremy Bussell (*Antarctic Discovery*) and Jake Horton (*Corinthian Bay*). Feedback is that they are keen to undertake more trips next season. AFMA thanked the crew from both companies for providing support and co-operation to ensure their first trip was a good introduction to Southern Ocean deployments.

Members noted that AFMA observers are now on three year contracts and this provides some certainty and allows sufficient time for training. SARAG discussed the training needs of observers and suggested that the Southern Ocean modular be a bit more intensive. AAD agreed to provide assistance and noted the need for the experienced observers to help train newer observers. Industry members agreed to provide fish samples for next training program.

Macquarie Island Toothfish Fishery

Mr Exel, Mr McNeill and Mr Arangio declared their interest under all agenda items. The members and observers left the room. SARAG then discussed whether the members and observer needed to leave the room for any agenda items; it was agreed that, as their input was essential to the agenda items, they should remain in the meeting room for all discussions noting that no recommendations were being made.

Agenda item 6 – Macquarie Island research project results

Dr Day presented the report "Stock assessment and management strategy evaluation for the Macquarie Island toothfish fishery 2017-2018 dated 27 June 2018". Members noted that one of the objectives of the project was to provide SARAG in a non-assessment year a requisite analysis of the data to decide whether the current TAC should be maintained or otherwise. Members noted that this objective was the result of moving to a two-year TAC cycle with a one-year data lag.

SARAG noted that to address the above objective, CSIRO presented a paper titled "Interim data inspection in lieu of assessment of the Macquarie Island fishery for Patagonian toothfish using data up to and including August 2017". The focus of the paper was to look at diagnostics exploring length frequency distributions by area or fishery and the catches and number of recaptures of tagged fish from each area, to see if there are any indications of some change to the fishery which may warrant further investigation or an earlier assessment.

Tagging data (2017)

SARAG noted that an additional 700 fish have been tagged since the last assessment and 200 recaptured.

Members noted that there does not appear to be any remarkable differences in recapture rates by region in 2017. The number of recaptures of fish released in the north of the fishery is much lower than the number of recaptures of fish released in the south of the fishery, with only three fish released in the north recaptured in 2017, only one of these three fish was recaptured in the south. All 155 remaining recaptures from 2017 were of fish both released and recaptured in the south. SARAG noted that one fish was recaptured 18 years after release.

Length composition data

Members noted that one more year of length data was included and that length frequency data suggest that in 2017 slightly smaller than normal fish were caught on the Southern Macquarie Ridge and slightly larger than normal fish were caught in the Aurora Trough. In Northern Macquarie Ridge there appear to very little change to the length frequency distribution. Note that the catch in Southern Macquarie Ridge was higher both in absolute numbers in recent years and as a proportion of the total catch compared to the distribution of catches by area in recent years.

Dr Day noted that inter-annual variability in the areas and depths fished within fleets likely contributes to some of the variability and inconsistency among data. The lengths of toothfish available to the fishery at Macquarie Island vary considerably by month and depth, and so inconsistencies in the length data from year to year can be expected as a result of spatial and temporal differences in fishing activity by season.

Summary

Members noted that there were no warning signs in the data presented by CSIRO that SARAG need to react to and agreed that the recommended TAC for 2019/20 did not need to be adjusted. Dr Day commented that it took a lot of time to complete analysis and stated that this didn't take much less time than a full stock assessment. Scientific members noted that this was the first year that scientists didn't do an assessment. SARAG nonetheless appreciated why the paper was being conservative but questioned whether it will be beneficial in the future. The AFMA observer noted that the AFMA Commission has an expectation, given the move to setting a two year TAC and the delay in the data, that the 2017 and 2018 data will be reviewed. AFMA stated that such a thorough analysis may not be required in the future but scientists could look at other indicators such as catch rates, is more than 90% of the TAC caught, and tag returns. Members further noted that there is an expectation of SARAG that if something happens in the Fishery, the group will have discussion about putting planning arrangements in place. Industry noted that this Fishery is known to fluctuate so it wouldn't want SARAG to react to just a single bad year; they would however be concerned if multiple bad years occurred. CSIRO noted that if more work was required additional funding would be required.

SARAG noted that the new MITF stock assessment will be presented to SARAG at the next face-to-face meeting in 2019 and will include catch and tag data for 2018 and ageing work up to and including 2017 (**Action arising 3**). Members noted that CSIRO require the catch and tag data to be quality controlled by AAD by 1 November 2018 to be able to present the new assessment early next year.

CSIRO stated to get a better estimate of natural mortality five fish per tonne would need to be tagged. Members noted that natural mortality has a big effect on the current assessment and is currently estimated at 0.13 which is based on figures in other toothfish fisheries.

Agenda item 7 – Stock assessment and MSE for MITF 2017-18

Agenda item 7 was discussed under agenda item 6.

Agenda item 8 – Update on revised stock assessment model

Agenda item 8 was discussed under agenda item 6.

Heard Island and McDonald Islands Toothfish Fishery

Mr Exel, Mr McNeill and Mr Arangio declared their interest under all agenda items. The members and observers left the room. SARAG then discussed whether the members and observer needed to leave the room for any agenda items; it was agreed that, as their input was essential to the agenda items, they should remain in the meeting room for all discussions and recommendations.

Agenda item 9 – Mackerel Icefish stock assessment

SARAG noted that scientists from AAD prepared a stock assessment for Mackerel Icefish for peer-review and consideration by CCAMLR's Working Group on Fish Stock Assessments (WG-FSA) and CCAMLR Scientific Committee.

SARAG noted that the annual random stratified trawl survey (RSTS) was undertaken by industry in March-April 2018. AAD presented a paper that provided an updated growth model and a preliminary assessment for Mackerel Icefish population structure, abundance and yield in Division 58.5.2 to the west of 79°20' E using standard CCAMLR methods.

SARAG noted that the best fit to the survey length density data was achieved when the population was assumed to consist of 4 components. That is, year classes 1+ through 4+. Members noted that the substantial 3+ cohort observed in the 2017 survey is still present as the 4+ cohort this year and overall fish density was estimated to be the higher than last year due to the presence of a strong 2+ and a weaker 3+ cohort. Members noted that in previous years the assessment showed big spikes of certain year classes and now getting peaks across multiple year classes. The 2018 RSTS showed a large 2+ and 4+ cohort dominating the Mackerel Icefish population. Members noted that the preliminary assessment discards the 4+ cohort under the assumption that it will no longer be available to the fishery in the coming years. Members noted that as has been observed in previous years, cohorts younger than age 3+ may not be well selected by the survey gear.

Industry members highlighted that the catch after the RSTS is also removed from the stock assessment so the 4+ cohort are being removed twice from the assessment. AAD re-ran the assessment with only one removal from the assessment as was past practice. This changed the outcome slightly for the TAC recommendations which will be presented to WG-FSA:

The results of the correction to the assessment are below:

Scenario	Initial biomass estimate (t)	Target fishing mortality rate	Catch after RSTS	Yield (tonnes) 2018/19	2019/20
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2018 draft assessment	2965	0.1440	262	424	307
Revised 2018 assessment Without 4+ in catch	2965	0.1440	112	443	320

SARAG agreed that a revised assessment be conducted in 2019 based on survey data collected in 2019.

Members 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 10 – CCAMLR independent toothfish stock assessment review

SARAG noted that in June 2018 AAD attended a CCAMLR Independent Stock Assessment Review for Toothfish in Norwich, UK. AAD distributed a summary which is being used to provide advice to the Scientific Committee and its working groups on the adequacy of the modeling approaches and methods used in CCAMLR's integrated toothfish stock assessments (HIMI, Ross Sea and South Georgia) relative to international best practices, and to suggest improvements to the assessment methods where appropriate. AAD reported the following general outcomes and recommendations from the workshop:

General

- single modeling framework (CASAL) is appropriate;
- uncertainty in parameters and assumptions are precautionary and conservative, consistent with CCAMLRs approach to management;
- Longline and trawl surveys are important to inform assessments and monitor recruitment strength;
- Modelling the spatial aspects of fisheries requires further work.

Technical short-term recommendations

- Regularly update all parameter estimates;
- Further develop tagging weighting;
- Estimate age-structured natural mortality within assessments;
- Estimate tag-release mortality;
- Further investigate fleet structure to identify asymptotic selectivity.

Reporting and transparency

- More structured and similar assessment document;
- five year updates for the public;
- Potentially make models and input files publically available;
- Review specific research questions (eg similar to this review workshop).

Members noted that the group thought that the HIMIF tag data is good but acknowledge there are problems and therefore before Australia goes to CCAMLR we will need clear guidelines on how to respond to these recommendations. Members noted that there is an issue due to the non-linear estimate of tag loss and the fact that currently CASAL has linear tag loss function. Members noted that therefore the assessment model needs to approximate the non-linear tag loss function with a linear estimate. SARAG has previously agreed that this approximation only works for 6 years and therefore excludes tags returns greater than 6 years. AAD agreed to enquire with team developing CASAL 2 to fix tag loss issues as part of revisions (**Action arising 4**).

SARAG was generally supportive of assessment and agreed to implement recommendations where feasible. Members noted that the paper demonstrated that Australia's stock assessment was the best documented, explained and presented. SARAG thanked Dr Ziegler for his work. Members noted that, in conjunction with Dr Smith's review, this review showed that Australia can be confident that we have the best current Toothfish Fishery stock assessment.

Agenda item 11 – Bycatch limits for the 2018/19 season

SARAG noted that no new assessments of bycatch species have been conducted since the limits were previously set for the 2017/18 season. SARAG recommended that bycatch limits from the current fishing season be rolled over to the 2018/19 fishing season. The AAD member noted that the conservation measure (CM 33-02) was not going to be discussed at CCAMLR in 2018. Members noted that there had been a request to look at grenadiers in more detail. SARAG discussed what information would be need to be collected noting that GR2 (*M. halotrachys* and *M. carinatus*) are found below trawl depth so can't be collected in RSTS.

AAD agreed to provide a proposal in March 2019 including what information would be required to get biomass estimate of grenadiers and also discuss how samples are taken. SARAG noted that currently, the first 20 whole fish taken are sampled to determine the difference in biomass of GR1 (*Macrourus caml* and *M. whitsoni*) and GR2.

SARAG recommended the following bycatch limits for the 2018/19 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 (*Lepidonotothen squamifrons*)

80 tonnes

All other species

50 tonnes (for each species)

Members noted that the recommended bycatch limits will be provided to SouthMAC before being considered by the AFMA Commission.

Agenda item 12 – Season extension trial

SARAG noted that currently the HIMI Fishery has 3 extension trials; these are both pre- and post-season (1-14 April, 1-14 November and 15-30 November). Members noted that the trial was to conclude once a cumulative total of at least 500,000 hooks have been set during daylight between 1 and 14 April and a cumulative total of at least 500,000 hooks have been set (during day and/or night) in the periods 1 to 14 November and 15 to 30 November.

Members noted the number of hooks set in each trial period and agreed that the hook set requirements for all three periods have now been met. The 1-14 April trial period was the final period that required the completion of the 500,000 hooks set. The data for this period has now been obtained and is displayed below:

Hooks Set 1-14 April by Time of Day						
Year	Night		Nautical Dawn	Day	Nautical Dusk	Total Daylight
2016	618300		13500	17100		30600
2017	592505		40999	205984	34200	281183
2018	560016		36900	228006	49300	314206
	1770821		91399	451090	83500	625989

Members agreed that the data now needs to be assessed and a long-term decision made on the HIMI season extension periods. It was agreed that an analyses would be done for the 2019 CCAMLR meetings.

Agenda item 13 – Criteria to assess season extension trial

SARAG noted that the key focus of the season extension trial was to assess the level of seabird mortalities during the three extension periods. Members noted that two boats were excluded from the trial extension periods in 2016. However, since 2016, no boats have breached AFMA's seabird mortality conditions.

AFMA noted that the number of seabird mortalities due to interactions with fishing gear during each trial extension period per year were:

		Total seabird mortalities			
	Total hooks set	1-14 Apr	1-14 Nov	15-30 Nov	Boats excluded
2016	2,892,557	1	3	2	2
2017	3,374,283	1	0	0	Nil

2018*	874,222	0	0	0	Nil
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*Totals apply to the 1-14 April period only

Members agreed that the results of the trial clearly demonstrate that fishing can occur in HIMIF waters during April – November with seabird bycatch rates well below the standard set by the Australian Government through the Seabird Threat Abatement Plan.

AAD and AFMA agreed that at the conclusion of the 2018 HIMIF season to review the data and develop criteria to enable a long-term management regime of three longline fishing periods (pre-season, core season and post-season). SARAG noted this proposal would be presented at the next SARAG meeting (**Action arising 5**).

Members noted that the results of the trial will then need to be reviewed and considered by CCAMLR. Any permanent change to the fishing season dates for HIMI will need to be discussed and agreed to through CCAMLR.

CCAMLR & Exploratory Fisheries

Agenda item 14 – Research in exploratory fisheries

SARAG noted that AAD developed a research plan for East Antarctica which was supported by CCAMLR with only small changes. AAD stated that the plan was at the end of a three year block and will then start the next three year block. Members stated that Australian vessels were operating responsibly in the exploratory fishery noting that constraints on the fishing operations are tight but Australia aspires to make it a long term fishery with Australia getting recognition for past research.

Agenda item 15 – Update from WG-SAM & WG-EMM

AAD stated that the main item of interest for Australia was the exploratory fisheries research plan and the independent review.

SARAG noted that the Working Group on Ecosystem Monitoring and Management (WG-EMM) focused on the krill fishery.

Agenda item 16 – Papers to WG-FSA, SC & CCAMLR 2018

SARAG noted that the following papers will be submitted to the Working Group on Fish Stock Assessment (WG-FSA), Scientific Committee and CCAMLR in 2018:

HIMI

1. RSTS – annual report;
2. Stock assessment of Mackerel Icefish; and
3. Report on longline season extension. Members noted that this paper will just be reporting what has happened to date. In 2019, the final numbers and future options will be presented.

Exploratory fisheries in 58.4

1. New research proposal (including responses to WG-FSA-17 and WG-SAM-18 comments);
2. Biomass estimation;
3. Update on genetics project – Antarctic Toothfish;
4. Ageing (led by Spain);
5. Bycatch (led by France); and
6. Research summary (other milestones & responses).

Members expressed concern regarding the workload of the AAD scientists. AAD noted that the projects are resourced by industry and have project plans that enables them to manage workloads and bring in external scientists when required.

Research

Agenda item 17 – Antarctic Fisheries 5 year Strategic Research Plan

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 plan be in place for these fisheries. For simplicity, one five year plan - the Antarctic Fisheries Five Year Strategic Research Plan - has been developed for both fisheries.

The current Antarctic Fisheries Five Year Strategic Research Plan extends from 2014-15 to 2018-19.

In September 2017, SARAG agreed that AFMA should draft the next Plan for consideration out of session and in consultation with relevant stakeholders, prepare a draft Antarctic Fisheries five year strategic research plan, and present a final draft to SARAG 58.

Members noted that in June 2018, AFMA management prepared a new draft Plan (2019-2023) which was circulated to SARAG and SouthMAC out of session for comment. The comments received were incorporated into the draft which was presented to members.

SARAG noted that the format of the Plan has been changed to:

1. simplify editing of the document
2. align the Plan with the format of the AAD-Industry Southern Oceans Science Work Plan, (**Attachment B**); and
3. incorporate costs/estimated cost and funding source/possible funding source, as had been requested by SARAG.

SARAG provided final comments on the draft Plan which have been included (**Attachment C**) and the Plan will be sent to SouthMAC for comment and endorsement. Members will be consulted should SouthMAC have any significant changes to the draft Plan.

Agenda item 18 – Recent research

Members noted that this agenda item is an opportunity to discuss any planned research, any research currently happening and any recently completed research.

SARAG noted that each year AFMA asks individual fishery RAGs to consider their fishery's five year strategic research plan to identify their research needs. AFMA has requested that SARAG identify:

1. Potential AFMA funding in 2019-20 (essential stock assessment/monitoring related research); and
2. Potential FRDC funding in 2019-20 (more innovative type projects).

Members agreed that the annual research statement should include those projects that need to be started in 2019 but do not have any funding yet. This included:

1. HIMI & Macquarie: 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

Environment

Agenda item 19 – Environmental interactions and gear loss

SARAG noted that during the 2017/18 HIMI Fishery fishing season 7,771,984 hooks have been set (to 31 July 2018) and there has been five seal and one seabird interactions resulting in deaths:

- 22/4/2018 - A Grey Petrel was caught on setting on the vessel *Corinthian Bay*;
- 6/6/2018 - A Southern Elephant Seal was hauled tangled with the mainline on the vessel *Isla Eden*;
- 29/6/2018 - A Southern Elephant Seal was hauled tangled with the mainline on the vessel *Antarctic Chieftain*;
- 5/07/2018 – A Southern Elephant Seal was hauled tangled with the mainline on the vessel *Corinthian Bay*;
- 26/07/2018 – A Southern Elephant Seal was hauled tangled with the mainline on the vessel *Atlas Cove*; and
- 23/08/2018 - A Southern Elephant Seal was hauled tangled with the mainline on the vessel *Antarctic Chieftain*.

During the MITF in the 2018/19 season 2,088,320 hooks have been set (to 31 July 2018) with no protected species interactions with fishing gear that resulted in a death. Members noted that there have been 10 Porbeagle sharks killed as a result of interactions with fishing gear.

Australian fishing operations had no wildlife interactions with fishing gear that resulted in death in CCAMLR Exploratory Fisheries in the 2017/18 season.

SARAG noted that there has been a significant decrease in the amount of gear lost in the HIMIF and noted that the amount of gear recovered was actually higher than gear loss. Members further noted that gear loss in the MITF has also significantly decreased in the 2018/19 season compared to the 2017/18 season. There was also a significant reduction in gear lost in the CCAMLR Exploratory fisheries.

AFMA agreed that given the current gear loss figures no action was required to account for mortality of fish on lost line. AFMA thanked industry for the reduction in gear loss and also their increased attempts to recover lost gear.

Other

Agenda item 20 – Management history of Sub-Antarctic fisheries

SARAG noted the timeline of management changes developed for Australia's sub-Antarctic fisheries compiled by AFMA. Members noted that AFMA compiled this information because as the Sub-Antarctic fisheries have developed, management arrangements have been introduced and/or changed, however, the changes have not been collated in one place. The aim is for this document to be used as a reference guide for fishery managers, as well as SARAG and SouthMAC.

SARAG noted that this timeline will be a living document that will be updated whenever any new measures are brought in or there are any management changes. SARAG agreed that it should also be reviewed every two years by SARAG and SouthMAC to ensure information remains accurate and up-to-date.

Industry members provided feedback on the management history providing some historic information and suggesting additional items that should be included. SARAG noted that AFMA will update the document and provide it to members (**Action arising 6**).

Agenda item 21 – Observer duties

Members noted that at SARAG 45 (30 August 2012) members discussed observer coverage and the range of duties undertaken in trawl and longline operations in the HIMI Fishery by the observer and data collection officer (DCO). Members noted that at that point in time the current set of duties occupied a full 24 hour period and included many high priority biological, fish and bycatch data collection, tagging and wildlife observations.

Members noted that an AFMA observer recently reviewed the longline document and provided comments on any changes to observer requirements that have occurred in the last 5 years. Mr Tim Lamb joined the meeting to provide further expertise on observer duties.

Members discussed the updated document noting that observers no longer do a few tasks (line weighting trials) but that additional tasks have also been added including camera deployment, collection of Antarctic Toothfish samples and CDT deployment. Members further discussed that some tasks could be replaced by electronic monitoring noting that some requirements are set by CCAMLR and therefore cannot be changed. AFMA agreed to update the longline observer duties (**Action arising 7**).

Industry members recently asked if observers would be able to take photos of any whales seen in HIMIF. Members noted that at this stage the current observer set of duties makes it difficult to add any further requirements. Mr Lamb noted that they could discuss with observers but that it may be only the experienced observers who may be able to find some time. Members further noted that the observers require new cameras that are better suited to the Antarctic conditions.

SARAG recognised the extensive observer workload and noted that they do a fantastic job. Members praised the observers and observer program and noted that priorities need to be focused in an attempt to reduce workload.

SARAG thanked Mr Lamb for attending SARAG and for his contribution.

Agenda item 22 – Other business

HIMI Closure Directions

SARAG noted that the HIMI Closure Directions; *Heard Island and McDonald Island Fishery (Closures) Direction No. 1 2014* and the *Heard Island and McDonald Island Fishery (Closures) Direction No. 2 2014*, are due to sunset in April 2019.

SARAG supported the remaking of the current Directions.

Agenda item 23 – Next meeting

It is proposed to hold the next face-to-face SARAG meeting on Wednesday 8 May 2019. The key items for discussion will be new stock assessment for MITF stock assessment and HIMI stock assessment.

The meeting closed at 3.00 pm on Wednesday 29 August 2018.

Sub-Antarctic Resource Assessment Group (SARAG) Meeting 58

Final Agenda

Wednesday 29 August 2018

9.00am – 5:00pm

Mawson Conference Room 3

Australian Antarctic Division – Channel Highway, Kingston

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 57 | 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. | Macquarie Island research project results | CSIRO | For Discussion |
| 7. | <i>Stock assessment and MSE for MITF 2017-18</i> | CSIRO | For Discussion |
| | - Tag rates & monitoring data to inform breakout rules | | |
| | - Interim data inspection in lieu of assessment | | |
| | - Impact of spatial tagging rates for key estimates | | |
| 8. | Update on revised stock assessment model | CSIRO | For Discussion |

Heard Island and McDonald Islands Fishery

- | | | | |
|----|-----------------------------------|-----|--------------------|
| 9. | Mackerel Icefish stock assessment | AAD | For Recommendation |
|----|-----------------------------------|-----|--------------------|

10.	CCAMLR independent toothfish stock assessment review	AAD	For Information
11.	Bycatch limits for 2018/19 season	AFMA/AAD	For Recommendation
12.	Season extension trial	AFMA/AAD	For Discussion
13.	Progression of the season extension trial results	AFMA/AAD	For Discussion

CCAMLR & Exploratory Fisheries

14.	Research in exploratory fisheries	AAD	For Discussion*
15.	Update from WG-SAM & WG-EMM	AAD	For Discussion
16.	Papers to WG-FSA, SC & CCAMLR 2018	AAD	For Discussion

Research

17.	Antarctic Fisheries 5 Year Strategic Research Plan	All	For Decision
18.	Recent research	All	For Discussion

Environment

19.	Environmental interactions and gear loss	AFMA	For Information
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Other

20.	Management history of Sub-Antarctic fisheries	AFMA	For Discussion
21.	Observer duties	AFMA/AAD	For Discussion
22.	Other Business	Chair	For Discussion
a)	HIMI Closure Directions	AFMA	For Decision*
23.	Next Meeting	Chair	For Discussion

* Verbal update, no agenda paper provided