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Extraordinary Meeting of the Sub-Antarctic Resource Assessment Group (SARAG)



FINAL MINUTES
SARAG 67

24 FEBRUARY 2023

SUB- ANTARCTIC RESOURCE ASSESSMENT GROUP (SARAG)

CHAIR: Mr Bruce Wallner

Date: 24 February 2023

Venue: Videoconference

Attendance

Members

Dr Philippe Ziegler, AAD
Dr Cara Miller, AAD
Dr Rich Hillary, CSIRO
Dr Tim Ward, IMAS
Brad Milic, Industry
Rhys Arangio, Industry
Danait Ghebregabhier, AFMA
Claire Wallis, Executive Officer, AFMA

Observers

Dr Heather Patterson, ABARES
Martijn Johnson, Industry
Selina Stoute, AFMA
Dr Pia Bessell-Browne, CSIRO
Dale Maschette, IMAS

Introduction

Agenda item 1 - Preliminaries

1.1 Welcome and Apologies

The sixty seventh meeting of the Sub-Antarctic Resource Assessment Group (SARAG 67) was opened at 1:00pm on 24 February 2023 by the Chair, Mr Bruce Wallner. The Chair welcomed members and observers to meeting.

No apologies were noted for the meeting.

1.2 Declarations of interest

The standing declaration of interests can be found at **Attachment A**.

1.3 Adoption of agenda

SARAG adopted the agenda without amendments.

The agenda can be found at **Attachment B**.

Agenda item 2 – Review of the Random Stratified Trawl Survey

The discussion started with a brief summary of the requirements of the Heard Island and McDonald Islands (HIMI) Fisheries Administration Paper (FAP) by AFMA. SARAG heard that the HIMI FAP designates the timing and design of the 2023 Random Stratified Trawl Survey (RSTS) and noted that given the origin of the document and process to develop and implement it, consideration should be given to whether SARAG and other advisory groups will have had sufficient opportunity to consider potential changes to the FAP and RSTS. AFMA identified that pending the RAGs recommendation, the next step is to advise the MAC and potentially seek their recommendation.

Austral gave background to the request for SARAG to consider changes to the RSTS, highlighting that the RSTS is a substantial annual cost, and while industry is historically and currently

committed to a range of research in HIMI, their view is that the research funding could be utilised more optimally. Large icefish TACs for 2023 and 2024 generated by the 2022 stock assessment could provide an opportunity to provide more operational flexibility in parts of the icefish component of the RSTS in the current year.

SARAG noted that Austral, AFMA and the AAD had a preliminary discussion in December about challenges associated with looking to scale back or remove icefish strata from the RSTS. Complete removal of those strata may impact the toothfish component of the RSTS, but Austral was interested in exploring flexibility around current daylight setting requirements for hauls in strata which are used to estimate icefish biomass. SARAG heard the impacts of up to 60 daylight-only sets on fishing logistics, with industry reporting delaying fishing to undertake shots, or alternatively undertaking increased steaming across the fishery to night-set in parallel with the day-shots. SARAG heard that the RSTS takes 23-27 days on average, increasing to 31 days in recent years, and that this increased survey period creates huge opportunity cost through delaying the ability of the vessel to start targeting toothfish with longline gear.

SARAG heard that the driver behind the requests is to increase flexibility in fishing operations at HIMI, particularly in the context of difficult market conditions and high icefish TACs which industry anticipates not fully utilising. Austral suggested that amending the RSTS starting date may be simpler for the RAG to consider and make a recommendation on, while recognising that more discussion will be needed on the issue of exploring daytime only sampling regimes.

Proposal 1 - Random Stratified Trawl Survey Commencement Date

AFMA requested explicit SARAG advice on any proposed changes to the RSTS, noting the role of the RAG in considering potential implications of amending the start date to 13 March 2023. AFMA advised that the date set in the FAP was a means of standardising the RSTS for inter-annual comparability, and noted preliminary discussions indicate that the change may be possible.

Dr Ziegler reflected that RSTS timing had varied substantially until recently following the introduction of consistent survey timing. Dr Ziegler expressed the view that changing to a week earlier is unlikely to have a significant impact. While the timing of the survey should be as consistent as possible, there is currently no data to suggest that changing to a week earlier will be a substantial factor resulting in a change of biomass estimate.

Dr Ward queried whether any analysis of the impact of the timing of the survey on results had been conducted, and SARAG heard that due to how the analysis is conducted this review has not been carried out. The group heard that the assessment projects forward from the data collected to the beginning of the fishing season and beyond. Mr Maschette proposed that a change in RSTS timing may have a small impact on the length-weight relationship depending on proximity of the survey to spawning date. Mr Maschette advised that this change is unlikely to significantly impact the TAC, though this could be explored.

Industry was asked whether, in exploring opportunity cost, whether any mapping had been undertaken to clarify what activity patterns have been like in years with extended RSTS periods. The group heard that recently RSTS had been paused due to time required to process large catches, while at other times pauses had been due to bad weather days and situations requiring increased use of reserve stations which increase transit times.

In regard to an amendment to the timing of the RSTS timing, the RAG heard that it would be difficult to explore changes to fish species dynamics due to the larger inter-annual impacts.

RECOMMENDATION: Having considered the available advice, particularly that a week is not anticipated to make a difference to the data collected and that any variation in timing and length

weight relationship can be accommodated in the stock assessment model, SARAG 67 recommended a temporary change in that the 2023 Random Stratified Trawl Survey should commence on 13 March 2023, and AFMA to amend HIMI FAP to facilitate this.

ACTION: AFMA to undertake consultation process with SouthMAC to amend the HIMI FAP to allow RSTS start date of 13 March 2023.

Proposal 2 - Daytime Setting Requirement in RSTS

SARAG noted that there is an ongoing process to holistically review the RSTS, including a paper that was considered at SARAG 66 where the RAG recommended no changes to the RSTS at that time. SARAG noted there was also broader work examining data needs and data sources within the HIMI fishery to be considered at SARAG 68, which would include consideration of a proposed Random Longline Survey, and the current work on Close-Kin genetics. AFMA reflected that SARAG has a process in place with associated timelines, and that the request to consider a subset of icefish specific attributes is earlier than anticipated under the holistic process. AFMA noted that while open to working with industry to consider amendments, the importance of SARAG having sufficient time and information to consider any proposal and clarified that the RAG should not feel pressured to make a recommendation if these aspects were lacking. Given this context, SARAG moved to discuss the potential to increase flexibility on the matter of daytime sampling while considering implications of any changes on data quality and reliability.

SARAG noted that the RSTS is conducted annually with its two main aims being to assess the abundance of juvenile and adult toothfish on the shallow and deep parts of the Heard Island Plateau, and to assess the abundance of icefish on the Heard Island plateau. It also provides important information on, and supports a wide range of projects, such as biomass estimates for bycatch species assessments such as grenadiers, skates, other icefish and rockcod. The RSTS is also used to evaluate the broader ecosystem invertebrate assemblages and SARAG noted substantial work by Nicole Hill on fish communities in HIMI and the Kerguelen Plateau.

The icefish biomass is estimated from three RSTS strata, and catch limits set based on the CCAMLR decision rule for a 2-year projection. The requirement for daytime only fishing was generated by a CCAMLR icefish workshop in 2001, based on a comparison of acoustic and trawl survey data from HIMI which illustrated diurnal migration in the water column, with reduced availability to trawl gear at night. This was congruent with Russian data on mackerel icefish behaviour, and the workshop recommended that daytime hauls are necessary to achieve optimal icefish biomass estimates.

Dr Ziegler introduced a paper which explored a specific sub-question on the potential effects of a change from daylight only to daylight and night-time hauls on biomass estimates and catch limits in the icefish fishery. The paper presents results from a retrospective analysis of the last 5 years of stock assessments under scenarios of varying proportions of night hauls and varying assumed night-haul catch rates compared to known daytime catch rates. SARAG heard that of 10 strata available to the RSTS, 9 are regularly fished with around 163 hauls annually. Hauls are randomly distributed amongst strata with varying numbers depending on strata. The three strata used of icefish assessment are Gunnari Ridge (GR), Plateau Southeast (PSE) and Plateau West (PW) also contribute to biomass estimates for other species.

The paper explored simulations of night hauls on PSE and PW (not GR) and tested assumed 50% or 0% of daytime catch rates, and then explored the impacts of these changes on catch estimated under varying proportions of daytime vs night-time hauls. Following this, a standard lower one-sided biomass estimate was generated and to estimate catch limits following the CCAMLR

decision rule. Dr Ziegler highlighted the large variability between years of contributions by PSE and PW (from 50% to 100%) to the total biomass estimates compared to GR.

SARAG heard about further impacts of reduced icefish catch rates under night-time sampling conditions included potential reduction in estimated biomass and resultant catch limits. Dr Ziegler reflected that a 50% reduction in catch rates due to night sampling can result in up to a 57% reduction in TAC. The group observed that the higher-level discussion shows that a reduced TAC is a cost industry would carry.

Dr Ziegler noted the RAG should account for additional impacts of a change to sampling regime. SARAG heard that there is currently 20+ years of annual RSTS data, and changing requirements from daytime-only effectively breaks the time series for some species. Daytime sampling changes in those strata would have substantial impacts on estimates of all icefish species and potentially skate species, with less impact anticipated on toothfish and macrourids. Dr Ziegler made the point that continuity and consistency improve ease and robustness of interpretation and reaffirmed his support for the SARAG 66 recommendation on continuing the annual RSTS in its current form. Noting the current work of the SARAG in reviewing the RSTS, the proposed longline survey and close-kin work, Dr Ziegler advocated for waiting for the results of that review before changing RSTS design.

Dr Ward supported Dr Ziegler's position regarding keeping the survey design as standardised as possible and noted that a thorough analysis on potential impacts of any changes would be needed prior to an amendment. Dr Ward requested more information on the long-term time RSTS data and noted that he suspected it would be difficult to make a case for moving away from daytime shots. Dr Ziegler clarified that biomass estimates and catch limits are mostly based on survey data from that year. SARAG heard that the process is to undertake the RSTS, generate a new length-weight relationship, and use a growth function based on previous years' data, and then use the GRYM model to apply the 2-year CCAMLR decision rule. This involves generating a projection to provide a catch limit that leaves 75% of the biomass uncaught after 2 years if fishing had not occurred.

Australian Longline (ALPL) requested clarification on the impact of changing sampling design on toothfish assessments, as toothfish is their main interest in HIMI. Dr Ziegler confirmed that only GR, PSE and PW strata have the daytime sampling requirement, and a measurable impact on toothfish by varying time of sampling at these strata would not be anticipated. Mr Maschette clarified that if an affect was introduced it may be ecological, as the understanding is that toothfish are present in these strata to feed on icefish, and if icefish migrate at night toothfish presence may also be reduced, but this would need to be tested.

Austral thanked the AAD for producing the paper and noted that it helped understand the potential TAC impacts of moving away from daylight only shots. SARAG heard that industry was initially interested in whether reducing daytime sampling to 60% would be feasible but noted that this may be higher risk than anticipated. SARAG heard industry concerns about current market conditions, and the driver to seek efficiency gains in the RSTS under conditions where two years of high TACs were agreed by CCAMLR but was likely to be significantly undercaught. Austral indicated that the biomass results modelled at between 75-90% daytime shots would be an acceptable risk to them in the current period and noted this would potentially mean that 8 stations may not need to be sampled in daylight.

SARAG heard that review of the sampling logistics of these strata should be reviewed, as in 2022 eight out of ten shots were done in a single day for PW while in previous years all ten shots had apparently been completed in one day. Based on this, it was unclear to some participants whether changing to night sampling in that strata would provide a real efficiency gain.

Austral reflected that the RSTS time-series is not perfect with reduced shot completion seen in recent years due to operational limitations. Whether some daylight shots could be replaced by

some night-time shots for comparison in the existing 165 shot design was discussed, with consideration given to analyses that exclude night-collected data. Members heard that using fewer shots can result in a multi-modal distribution of bootstrap results due to the scale of differences between shots.

SARAG noted that rather than changing the design of the standard 163 shots, the impact of night-time sampling could be explored through the addition of extra daytime and night-time sampling with the explicit goal of collecting data to compare differences. While this would increase the sampling load for industry, the results may be used to inform future discussions. Mr Maschette clarified that any work undertaken to assess the impact of day vs night sampling would also require acoustic data collection at the same time to clarify whether icefish is present and uncaught rather than not present. SARAG noted that the recommendation for daylight sampling from the 2001 work is because night shots bias the assessment, and that introducing additional bias needs serious thought.

SARAG noted that while abundance estimates of fishery target species are the main objective of the RSTS, and in the absence of a fishery no RSTS would be conducted, the HIMI FAP objectives include both target species as well as data needs for bycatch species in the fishery. SARAG heard that management objectives include bycatch and ecosystem impact mitigation, and that the HIMI FAP identifies the RSTS as supporting improved understanding of non-target species dynamics, among other research needs. Members noted the suite of research and management arrangements have supported the MSC accreditation received by the HIMI fishery, as well as providing measures used by AFMA and CCAMLR.

SARAG again noted that the discussion in May (SARAG 68) will consider other methods to meeting the objectives that may supplement the RSTS, and that it will be a step towards identifying the best data collection methods for the different aspects of the fishery, including target bycatch and ecosystems. The importance of identifying and clarifying essential questions, and having sufficient time to do so, was also noted.

AFMA sought views from all Scientific members and participants on the 2023 RSTS, noting the preceding discussion. Scientific members agreed that regular surveys that provide an amplitude of information that can be used to manage the fishery, and maximum confidence is important in providing recommendations. Little appetite was expressed for provision of ad hoc recommendations or amendments. Comments were made on the importance of understanding impacts of changes on time-series and how those would be dealt with moving forward, and the importance of time series and impacts of a change for assessment and monitoring of species other than icefish was highlighted. Scientific members additionally noted the importance of having a data series Australia is confident in which is consistent in other metrics beyond target species. In the absence of data addressing these unknowns, an amendment at this time was not supported.

SARAG members noted the opportunity to discuss amendments more broadly at the full meeting in May 2023, including potential to discuss surveys of varying intensity or a biennial approach to the RSTS. The group noted again that the icefish strata contribute to non-icefish timeseries, while time-series approaches are not used for the icefish assessment specifically. SARAG heard that understanding dynamics leading to variability within icefish time-series may be useful in exploring climate change impacts in the long term, independent of data approaches used under CCAMLR catch setting rules.

AFMA noted the RAG's position on making a recommendation and the current SARAG discussions on changing periodicity of the survey and queried what further information could be provided to allow SARAG to feel confident all the information needed to make a decision has been provided, with the view to consider the change in the frequency of the RSTS and make a recommendation at SARAG 68.

Scientific members reflected that being able to look at the whole data collection in the fishery and the cost benefit analysis in a holistic way is needed. Changing the RSTS in varying places without a holistic review of data collection methods may carry unidentified risks and consequences. Developing an overview of all data collection methods and then linking them to the objectives and exploring how the data is used in different ways would allow the SARAG to make an informed decision across all areas. The SARAG acknowledged that while financial investment in the RSTS is high, close kin and other data programs also require significant investment, and the preference expressed was for the RAG to progress with the broad review as agreed at SARAG 66.

AFMA reflected that a reduction in future sampling effort may result in potential foregone catch, which is not considered to be an ideal outcome in the years the market is favourable. AFMA asked for industry's view on how quickly they would expect the assessment to catch up with a favourable market and sought the views of scientific members on the assessment's capacity to ramp up to respond to market changes.

Austral advised that icefish is historically a boom-and-bust fishery with variable catches and TACs, which has made development of a stable market a challenge. The last year has been difficult and while their usual buyer took all catch in 2021, in 2022 it was difficult to sell, and due to this Austral will not conduct further icefish fishing this year beyond the RSTS. Austral advised that if a normal market returns then 700-1000t would be optimal and they remain comfortable that while a proportion of daylight shots would not cause concern from their perspective, they appreciate views from scientific members on data quality and continue with a more fulsome review set for May.

In closing, Austral expressed interest in progressing conversations about undertaking additional paired night-time and daytime shots separately to the core 2023 RSTS trawls, and sought to engage with the AAD to progress the conversation out of session.

Mr Milic expressed concern about the ongoing ability of Austral to complete the RSTS and asked how much capacity there is to plan for this in the future. Mr Milic acknowledged that questions exist as to whether Austral can undertake another year prior to a conversation about splitting the load across years. He noted that CCAMLR rules may limit potential approaches.

AFMA noted the importance of the May meeting in fully considering this issue and providing both short term recommendations on possible immediate changes in the RSTS, in addition to making longer term recommendations on techniques and data collection that may not be currently available in the fishery. SARAG heard that its 68th meeting will need to consider both of those aspects.

RECOMMENDATION: After reviewing the information available, including papers on RSTS periodicity from SARAG66 and the paper modelling night-time hauls for the current meeting, and noting the broader context and RAG processes in reviewing data collection needs and approaches already in progress in the HIMI fishery, SARAG 67 recommended that the 2023 RSTS be conducted in the format previously agreed and as described in the HIMI FAP.

ACTION: AAD and Austral to meet to discuss potential to undertake complementary night-time sampling during the 2023 RSTS period.

Agenda item 3 – Other Business

Members noted the next date and location were agreed at SARAG 66 to be Tuesday 2 May 2023, in Hobart. AFMA agreed to communicate with members closer to SARAG 68 to confirm details.

The chair closed the meeting at 2:40pm.

Attachment A

Member, invited participant and observer's declarations of interest as advised to date.

Name	Membership	Declared interests
Bruce Wallner	Chair	No pecuniary or other potential interests in sub-Antarctic fisheries.
Dr Philippe Ziegler	Scientific member	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 principle and co-investigator on current FRDC projects. Dr Ziegler is also the scientific member of SouthMAC, and the Scientific Representative for Australia to CCAMLR.
Dr Cara Miller	Scientific member	Member of the Fisheries team within the Southern Ocean Ecosystems Program at the AAD and has no pecuniary or other interests in the sub-Antarctic fisheries.
Dr Rich Hillary	Scientific member	Employed by CSIRO and is the Principal Investigator of the Macquarie Island Toothfish Fishery (MITF) stock assessment. 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 Tim Ward	Scientific member	Institute Marine and Antarctic Studies, University of Tasmania, Associate Professor, Fisheries Scientist AFMA Small Pelagic Fishery Resource Assessment Group, Scientific Member AFMA Research Projects (SPF Monitoring, Blue Mackerel Spawning Fraction), Principal Investigator Natural Environment and Resources, Tasmania (Developmental Tasmanian Sardine Fishery), Scientific Advisor, Principal Investigator South Australian Marine Scalefish Fishery Management Advisory Committee, Independent Conservation Scientist, Member Pelamis Pty Ltd (Environmental Consulting Company), Director
Brad Milic	Industry member	General Manager, Operations, at ALFPL which holds various fishing rights in, and operates vessels in, the sub-Antarctic fisheries and New and Exploratory fisheries under the jurisdiction of CCAMLR.

Name	Membership	Declared interests
Rhys Arangio	Industry member	Employed by Austral Fisheries P/L (Austral Fisheries) as the General Manager of Science & Policy. Austral Fisheries owns Statutory Fishing Rights (SFRs) in the Australian sub-Antarctic fisheries, which include waters under the jurisdiction of CCAMLR. Noting no changes since the last meeting, Mr Arangio is the Executive Officer of COLTO, as well as being a member of SouthMAC. He was not aware of any investigation or prosecution action by AFMA against his Company, nor of any legal action taken by his Company against AFMA, and has an interest in all agenda items.
Danait Ghebrezgabhier	AFMA member	AFMA employee, no interests pecuniary or otherwise.
Claire Wallis	Executive officer	AFMA employee, no interests pecuniary or otherwise.
Selina Stoute	Invited Participant	AFMA employee, no interests pecuniary or otherwise.
Dr Pia Bessell-Browne	Invited Participant	Employed by CSIRO as an assessment scientist. Dr Bessell-Brown advised they are the principal investigator on the FRDC project 'Developing a harvest control rule to use in situations where depletion can no longer be calculated relative to unfished levels.' Dr Bessell-Brown noted they have no pecuniary interests in the sub-Antarctic fisheries.
Dale Maschette	Invited Participant	Employed by IMAS and is a Fishery scientist responsible for HIMIF work including the HIMI icefish stock assessments. He holds no pecuniary interest in the subantarctic fisheries. His salary is connected to two FRDC research grants related to Southern Ocean fisheries, one that he is the primary investigator on, another that he is a coinvestigator on. He is also one of the alternative Scientific Committee representatives to CCAMLR.
Dr Heather Patterson	Invited Participant	Employed by the Department of Agriculture, Fisheries and Forestry and is the Editor of the Australian Bureau of Agricultural Resource Economics and Sciences (ABARES) Fishery Status Reports. Dr Patterson has no pecuniary interest in the sub-Antarctic fisheries.
Martijn Johnson	Observer	Mr Johnson advised he was attending as an observer to SARAG and an employee of Australian Longline Fishing Pty Ltd (ALFPL). Mr Johnson is the Sustainability and Operations Coordinator of ALFPL 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 Johnson is not aware of any investigation or prosecution action by AFMA against ALFPL or any litigation entered in to by ALFPL.

Attachment B

Extraordinary meeting of the Sub-Antarctic Resource Assessment Group (SARAG)

Meeting 67 – 24 February 2023

Draft Agenda

Time (AEDT): 1 – 2:30pm

Location: Videoconference

Chair Name: Bruce Wallner

Approximate time	Item	Purpose	Lead presenter
13:00 (15 min)	1. Preliminaries		
	1.1 Welcome and apologies	For action	Chair
	1.2 Declaration of interests	For action	Chair
	1.3 Adoption of agenda	For action	Chair
13:15 (70 min)	2. Variation of timing and design of the 2023 Random Stratified Trawl Survey		
	2.1 AFMA Management	For action	AFMA & AAD
14:25 (5 min)	3. Other*		
	3.1 Other Business	For action	Chair
	3.2 Next Meeting – 2 May 2023	For noting	Chair
14:30	Close		

* Verbal update, no agenda paper provided