

Report of 2nd Annual Meeting of the SCAR Krill Action Group June 2019

The 2nd. Annual meeting of the SCAR Krill Action Group (SKAG) took place on the 15th and 16th June 2019 in Concarneau, France. The meeting was attended by 24 scientists from 10 nations from a range of different krill research fields (List of names at the end of this report).

The meeting focused on the following three topics:

- i) Formalising the group structure and webpage of the SKAG to ensure transparency of all SKAG activities.
- ii) Identifying important knowledge gaps in krill research and possible solutions to close these gaps to provide critical scientific information for krill fishery management.
- iii) Providing a platform for young krill researchers (promoting and developing their research and cooperation).

Meeting outcomes regarding the topics outlined above

- i) Agreed group structure
 - Chair: Dr Bettina Meyer
 - Vice chair: Dr So Kawaguchi
 - Communication officers: Nicole Bransome and Frances Perry
 - Scientific coordinators: Dr Simeon Hill and John Conroy
 - CCAMLR coordinator: Dr Keith Reid
 - Fishing Industry coordinator: Dr Javier Arata
- ii) “Krill Recruitment” and “Krill’s plasticity to climate change” were identified as the two major knowledge gaps to improve mechanistic understanding of krill abundance, distribution behaviour and movement. Improved knowledge on the range of their optimal performance was also considered important for predicting the stock dynamic under different IPCC scenarios. These information will allow us to develop spatially specific population models of the krill stock.

Key Research Questions to address these knowledge gaps:

“Recruitment”

- **What are the drivers of recruitment variability?** (including factors leading to successful spawning, importance of sea ice for juvenile transport of larvae, food source etc.?)
- **Where are the source areas of the population**_(e.g. where are the locations of egg production that lead to a successful development,)?
- **What is the importance of the spawning stock to the overall population.**

“Krill’s plasticity to climate change”

- **What are the consequences of combined environmental factors, in relation to climate change, on krill population dynamic in the future?** (e.g. decreased in winter sea ice, increase

in ocean acidification and water temperature as well as food quantity and quality)

In accordance with the knowledge gaps that were identified the meeting identified actions that can be taken within the remaining 18 months (until the end of current SKAG phase).

This will be outlined in two scientific papers that will form the output of the SKAG and will be submitted as documents to WG-EMM and the Scientific committee to provide critical scientific information on factors that matter to krill fishery management within CCAMLR.

- iii) To ensure and encourage active participation of young scientists the roles of communication officers and research coordinator roles were assigned to young scientists with senior scientists as mentors for the positions.

We will also establish links to existing platforms for early career scientists which bring together students in polar marine research (APECS: Association of Polar Early Career Scientists, and UK Polar Network), to extend network for early career scientists. In addition, the SKAG webpage will establish up to date information on upcoming expeditions as well as current and envisaged research projects.

The next SKAG meeting will take place alongside the SCAR open Science conference in Hobart in cooperation with ICED

Participants (in alphabetical order)

Javier Arata, Angus Atkinson*, Andrew Brierley**, Nicole Bransome, John Conroy**, Andrea De Felice**, Simeon Hill, So Kawaguchi, Svetlana Kasatkina, Hyoung Sul La, Bettina Meyer, Schuyler Nardelli, Franki Perry*, Keith Reid, Christian Reiss, Emilce Rombola**, Mercedes Santos, Geraint Tarling, Sally Thorpe*, Phil Trathan, Rodolfo Werner, George Watters, Dirk Welsford, Guoping Zhu

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