
Online Meeting
Expert Group on Antarctic Biodiversity Informatics (EG-ABI)
SCAR
www.scar.org
31st March 2021
9am UTC
Please register in advance.

Agenda

9:00 - Introduction and overview of EG-ABI (Ben Raymond)

9:06 - Summary of selected projects

> 9:06 - Energy and allometric equation data (Fokje Schaafsma)
>
> 9:12 - EG-ABI course 2019 (Grant Humphries)
>
> 9:18 - Retrospective Analyisis of Antactic Tracking Data (Yan Ropert-Coudert/Ian Jonsen)
>
> 9:24 - Register of Antarctic Species (Anton Van de Putte)
>
> 9:30 - rOpenSci (Ben Raymond)

9:35 - Summary of next steps (Ben Raymond)

> group structure and process for revamping group membership project planning

9:40 - Discussion

> questions, project ideas, anything else

9:50 - Close

Introduction

See https://scar.org/science/egabi/about-2/

Project summaries

9:06 - Energy and allometric equation data (Fokje Schaafsma)

9:12 - EG-ABI course 2019 (Grant Humphries)

9:18 - Retrospective Analyisis of Antactic Tracking Data (Mark Hindell)

9:24 - Register of Antarctic Species (Anton Van de Putte)

9:30 - rOpenSci (Ben Raymond)

Project summary: Energy and allometric equation data

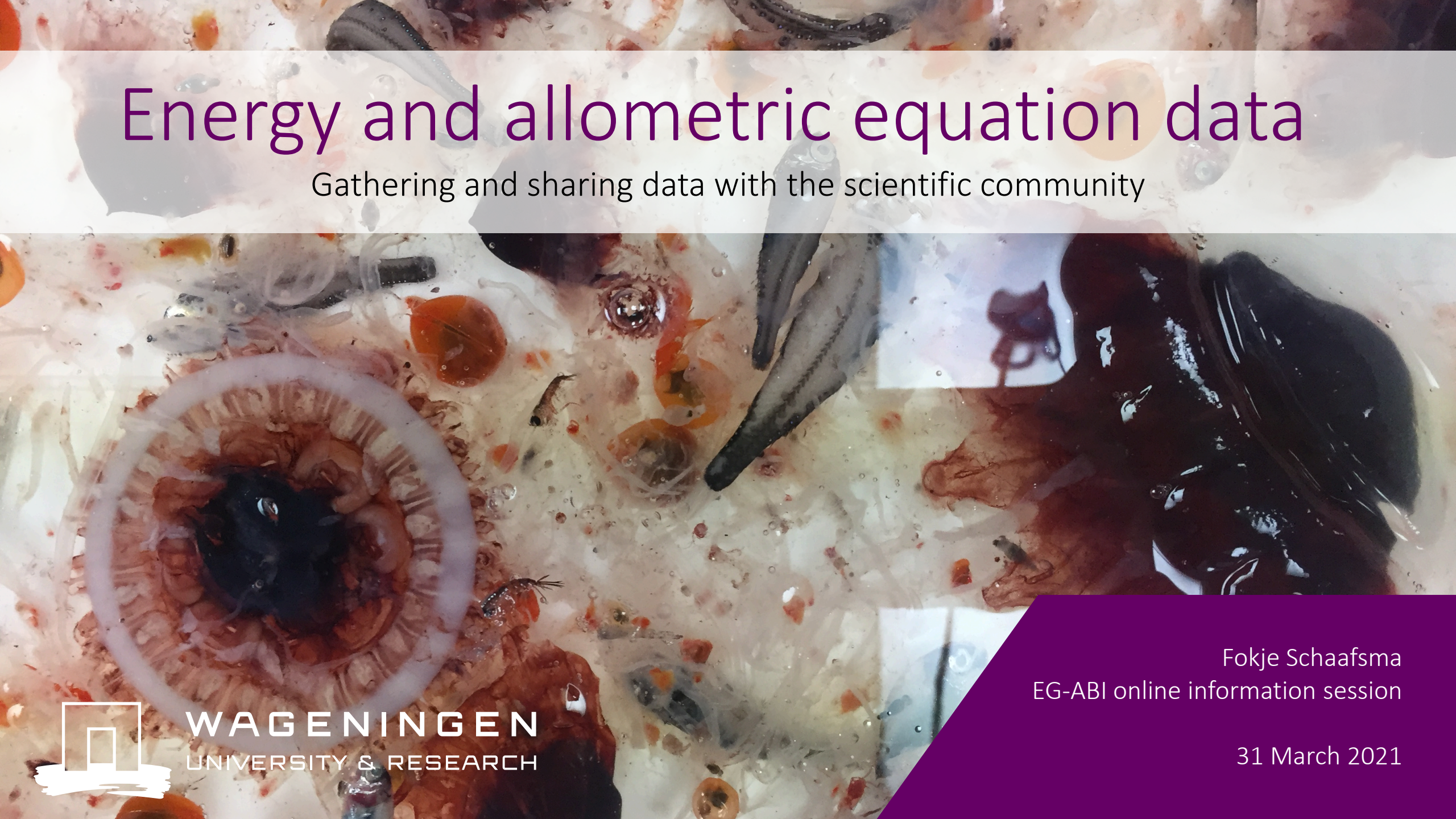
Fokje Schaafsma

See also:

- Review: the energetic value of zooplankton and nekton species of the Southern Ocean https://doi.org/10.1007/s00227-018-3386-z
- the Southern Ocean Diet and Energetics Database
- R packages https://github.com/SCAR/sohungry and https://github.com/SCAR/solong

Energy and allometric equation data

Gathering and sharing data with the scientific community



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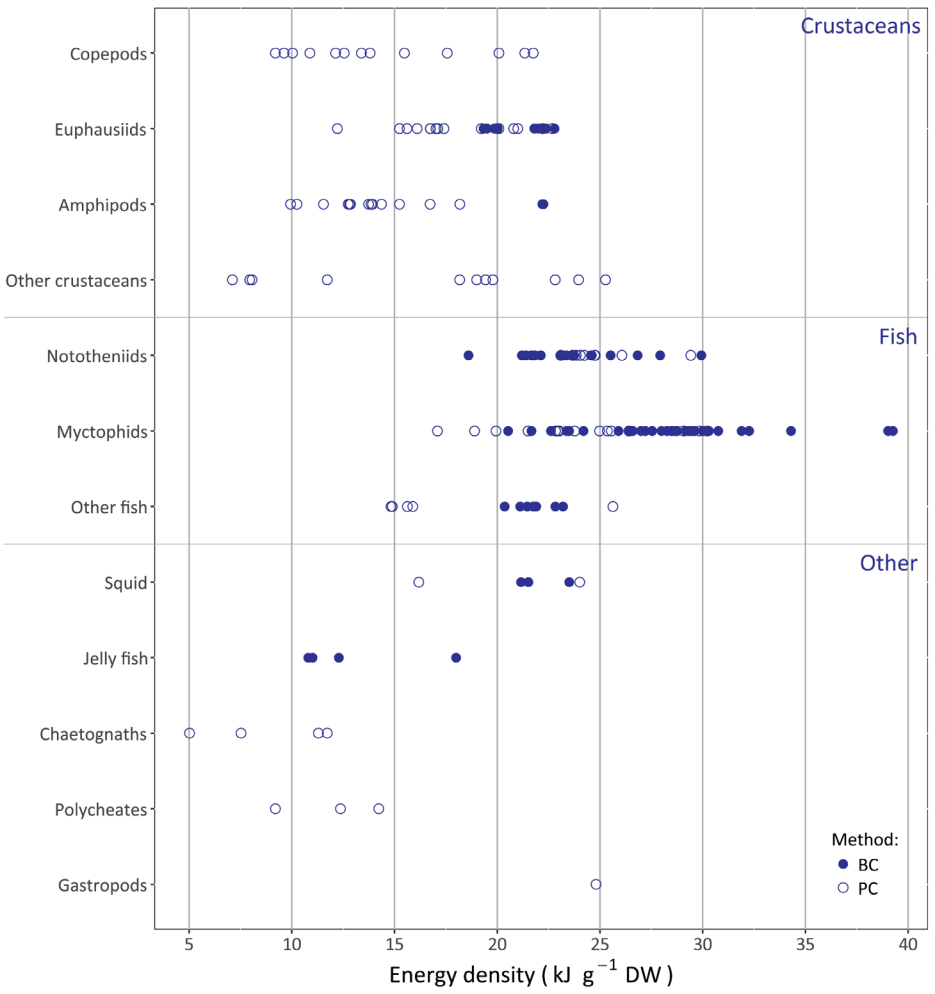
Fokje Schaafsma

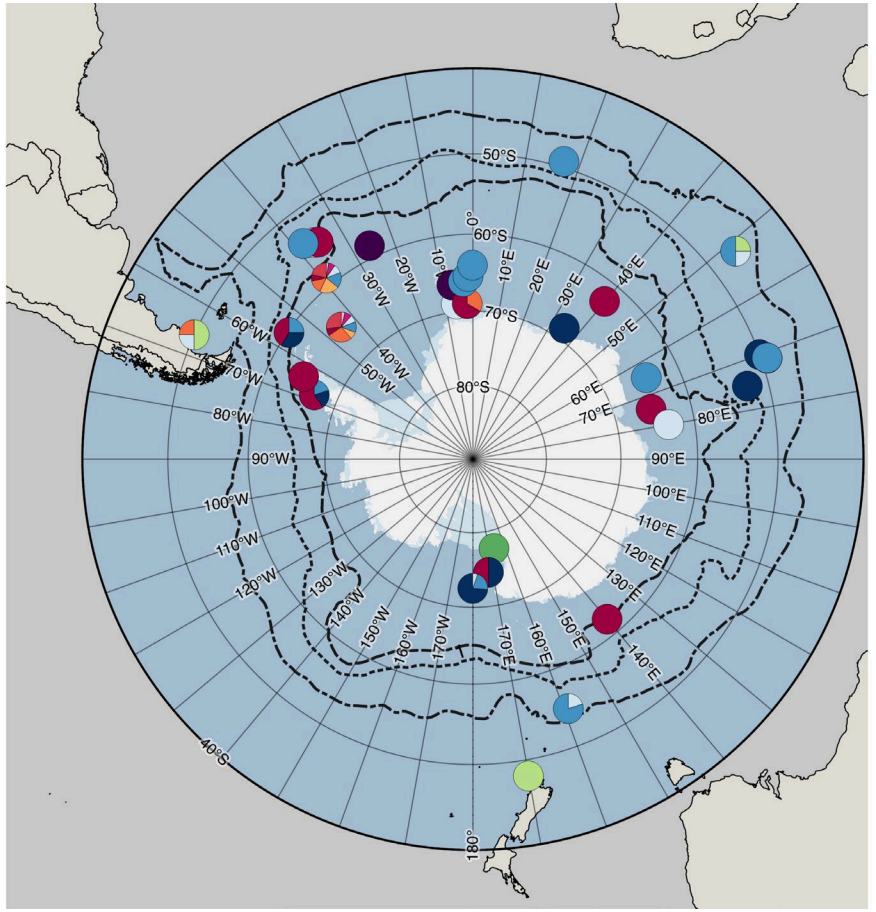
EG-ABI online information session

31 March 2021

Southern Ocean Diet and energetics Database (SO-diet)

The Expert Group on Antarctic Biodiversity Informatics (EG-ABI) and the Expert Group on Birds and Marine Mammal (EG-BAMM) are collating a centralised database of such information to assist the scientific community in this work. It includes data related to diet and energy flow from conventional (e.g. gut content) and modern (e.g. molecular) studies, stable isotopes, fatty acids, and energetic content. It is a product of the SCAR community and open for all to participate in and use.

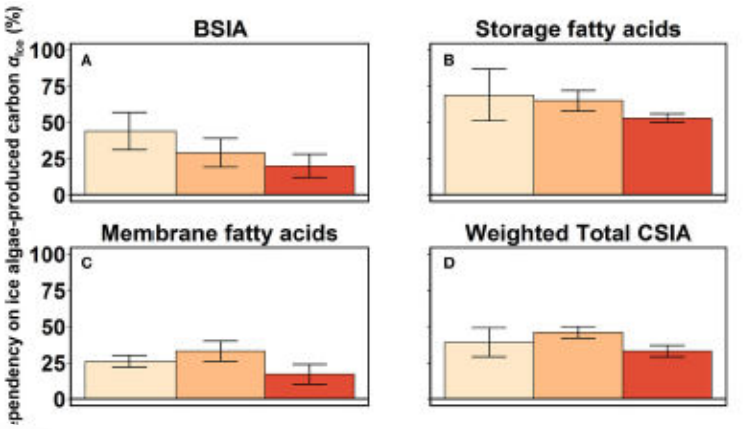


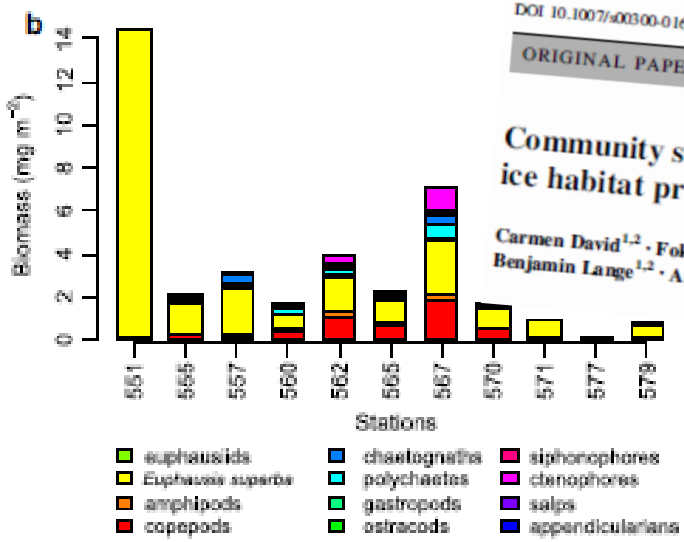


Schaafsma FL, Cherel Y, Flores H, Van Franeker JA, Lea MA, Raymond B, Van de Putte AP (2018) Review: the energetic value of zooplankton and nekton of the Southern Ocean. *Marine Biology 165:129*. doi: 10.1007/s00227-018-3386-z

Allometric measurements and regressions

Measurements of, for example, body length, wet weight and dry weight were done for investigating several aspects of Antarctic zooplankton and nekton in light of the Dutch and German ICEFLUX projects. These measurements are being collected with the purpose of making them public in central databases. In addition, regression models are made and analysed for an accompanying paper.





Polar Biol
DOI 10.1007/s00300-016-1948-4

ORIGINAL PAPER

CrossMark

Community structure of under-ice fauna in relation to winter sea-ice habitat properties from the Weddell Sea

Carmen David[1,2] · Fokje L. Schaafsma[3] · Jan Andries van Franeker[3] · Benjamin Lange[1,2] · Angelika Brandt[2] · Hauke Flores[1,2]

Table 3. Average carbon content, nitrogen content, C:N ratio and total fatty acid (FA) content (SD within brackets) of age class 0 krill *Euphausia superba* per cohort; na: not analysed

Cohort	Carbon content (% of dry mass)	Nitrogen content (% of dry mass)	C:N ratio
1	40.60 (0.64)	10.12 (0.27)	4.01 (0.07)
2a	39.06 (1.13)	10.59 (0.40)	3.69 (0.07)
2b	39.32 (1.06)	10.20 (0.21)	3.86 (0.09)
3	34.61 (1.00)	9.81 (0.19)	3.53 (0.10)

Vol. 580: 101–115, 2017
https://doi.org/10.3354/meps12309
MARINE ECOLOGY PROGRESS SERIES
Mar Ecol Prog Ser
Published September 29

OPEN ACCESS

Spatio-temporal variability in the winter diet of larv and juvenile Antarctic krill, *Euphausia superba*, in ice-covered waters

Fokje L. Schaafsma[1,*], Doreen Kohlbach[2,3], Carmen David[2,3], Benjamin A. Lang Martin Graeve[2], Hauke Flores[2,3], Jan A. van Franeker[1]

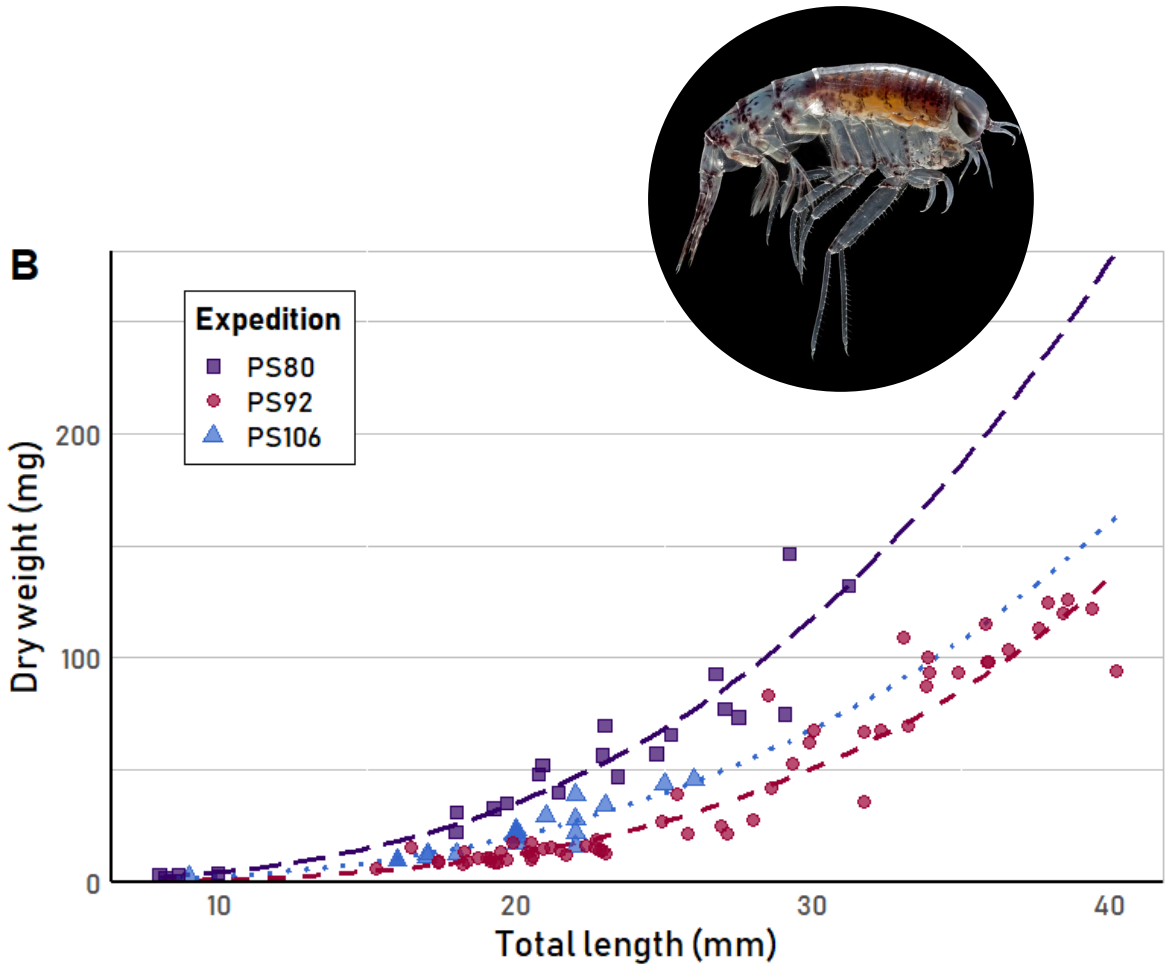
...l (mean ± 1 standard deviation %). Estimates of α_{Ice} based on the ... of the storage fatty acids 16:1n-7 and ... weighted by the

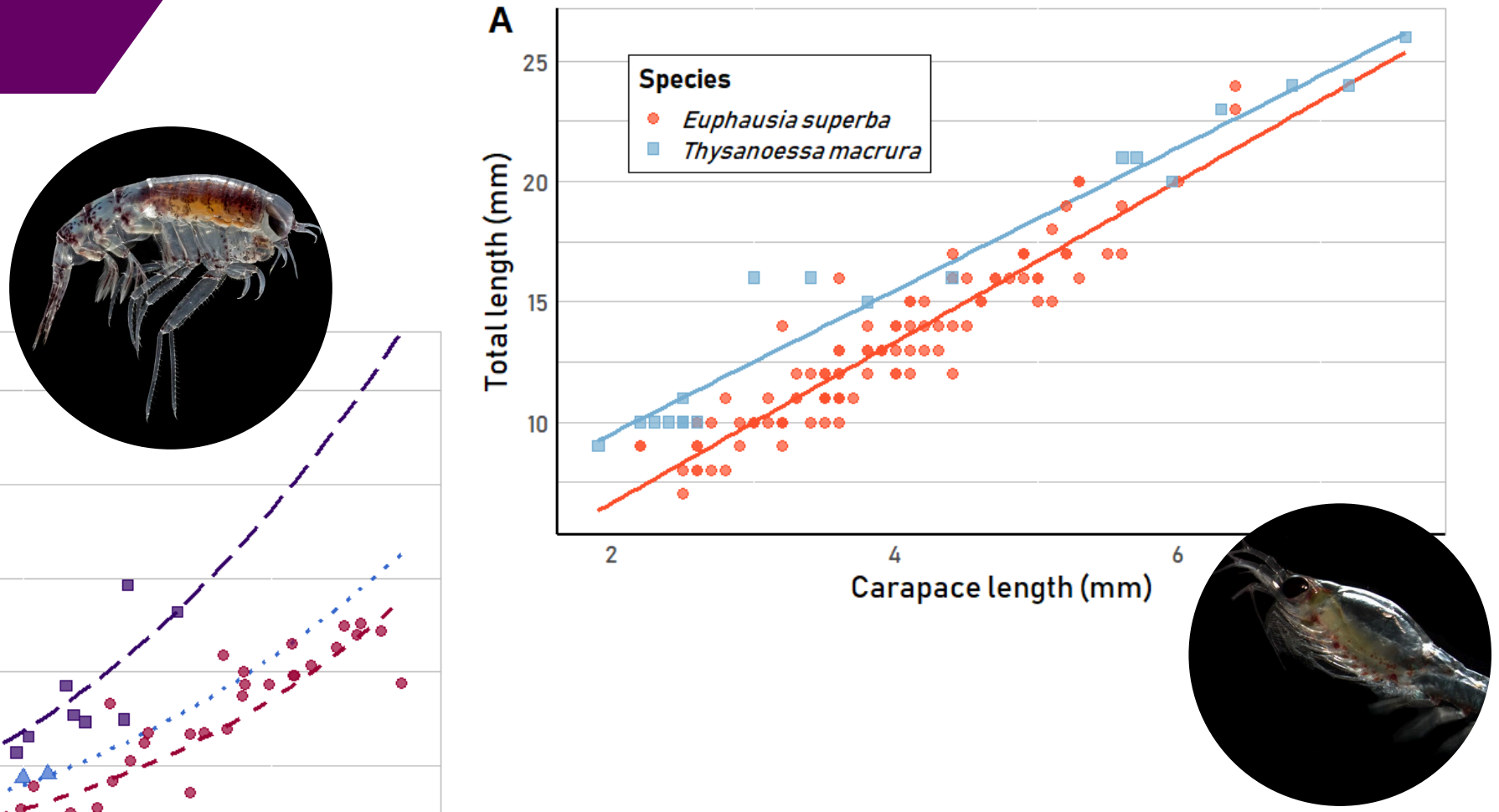
Ice Algae-Produced Carbon Is Critical for Overwintering of Antarctic Krill *Euphausia superba*

...reen Kohlbach[1,2*], Benjamin A. Lange[1,2], Fokje L. Schaafsma[3], Carmen David[1,2], ...rtina Vortkamp[1], Martin Graeve[4], Jan A. van Franeker[3], Thomas Krumpen[5] and ...uke Flores[1,2]

Allometric measurements and regressions

Measurements done on approximately 2700 individuals (Antarctic and Arctic zooplankton and nekton). Apart from length and weight, also body parts.





Fokje L. Schaafsma, Carmen L. David, Doreen Kohlbach, Martina Vortkamp, André Meijboom, Julia Ehrlich, Giulia Castellani, Benjamin A. Lange, Antonia Immerz, Hannelore Cantzler, Anton van de Putte, Jan Andries van Franeker, Hauke Flores (work in progress)

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Thank you!

Project summary: EG-ABI course 2019

Grant Humphries

See the course notes: https://scar.github.io/EGABIcourse19/

EG-ABI SPATIAL ANALYSIS COURSE

Tools for Southern Ocean spatial analysis and modelling

Sept 2 – 6, 2019

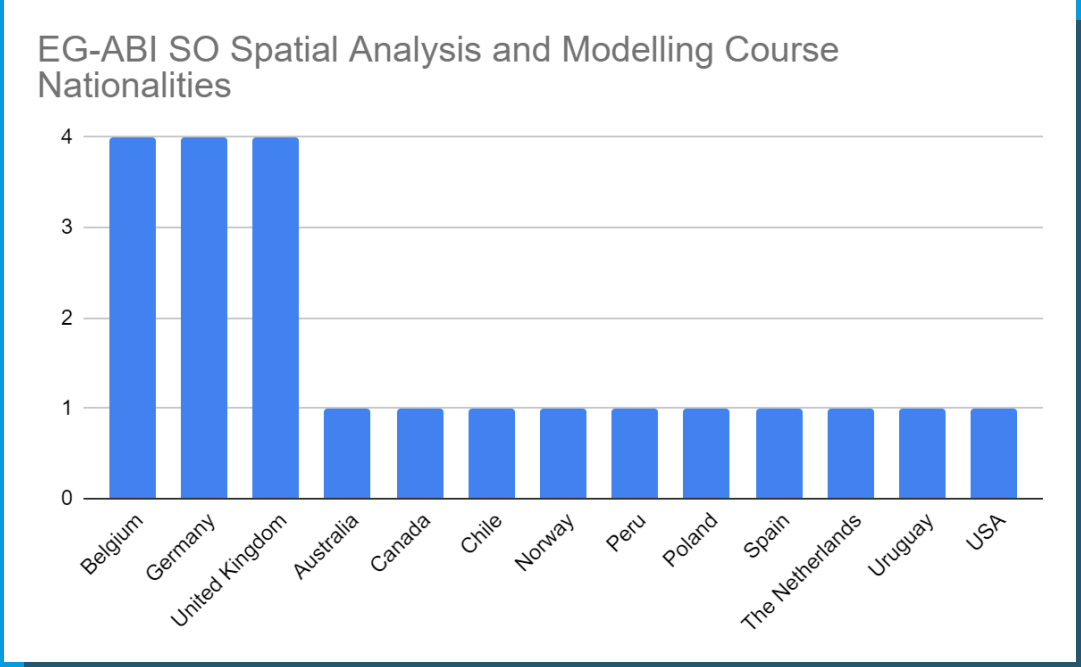
Leuven, Belgium

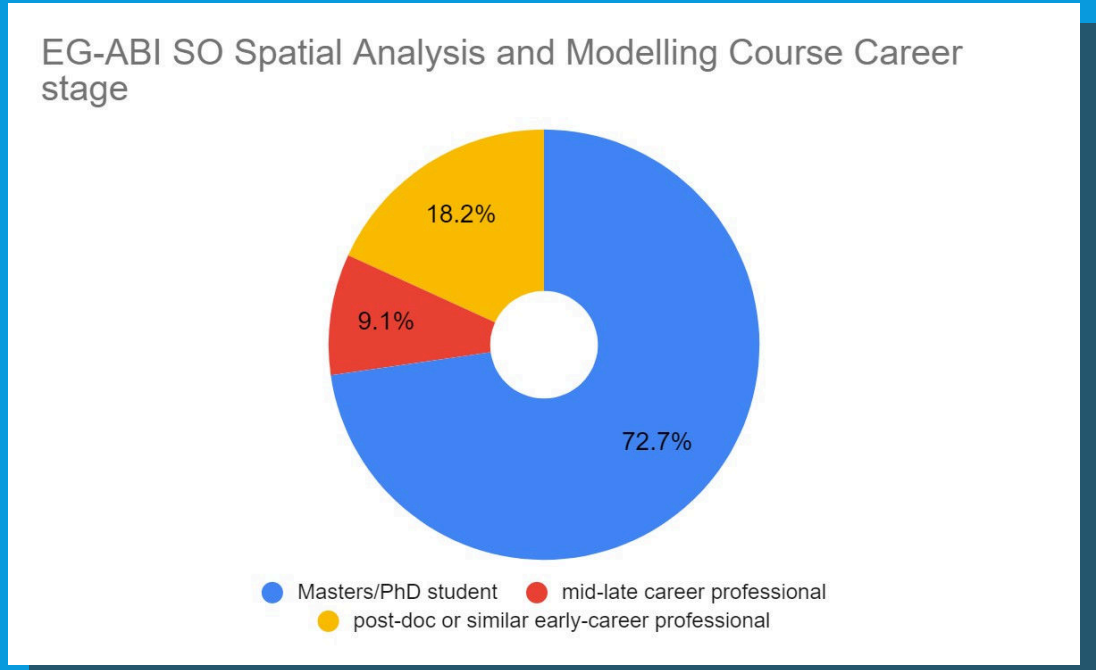
COURSE

- Held at KU Leuven Campus
- Aimed to introduce people to spatial modelling in R, focused on Antarctica
- 5 instructors: Anton Van de Putte, Huw Griffiths, Ryan Reisinger, Charlène Guillamot, Grant Humphries
- 2 mentors: Yi Ming Gan, Maxime Sweetlove
- With external support from Ben Raymond
- 5-day course started with data wrangling in R and tidyverse, then data access and curation, followed by introductions to statistical methods with worked examples
- Participants were asked to either use a provided dataset or bring their own data.
- Instructors/mentors were available throughout for guidance

PARTICIPATION

- 22 participants from 20 institutions, 13 countries
- Varying degrees of experience with R and statistics





Course material found at:

Github.com/SCAR/EGABIcourse19

Also, check out the rOpenSci initiative

Project summary: Retrospective Analyisis of Antactic Tracking Data

Mark Hindell

See also:

- research paper: https://doi.org/10.1038/s41586-020-2126-y
- data paper: https://www.nature.com/articles/s41597-020-0406-x
- project R code: https://github.com/SCAR/RAATD

The Retrospective Analysis of Antarctic Tracking Data indicates Areas of Ecological Significance in the Southern Ocean

Yan Ropert-Coudert , Mark Hindell and Ryan Reisinger, & on behalf of the RAATD consortium

CESAB

THE INTERNATIONAL COUNCIL FOR SCIENCE
SCAR
SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH

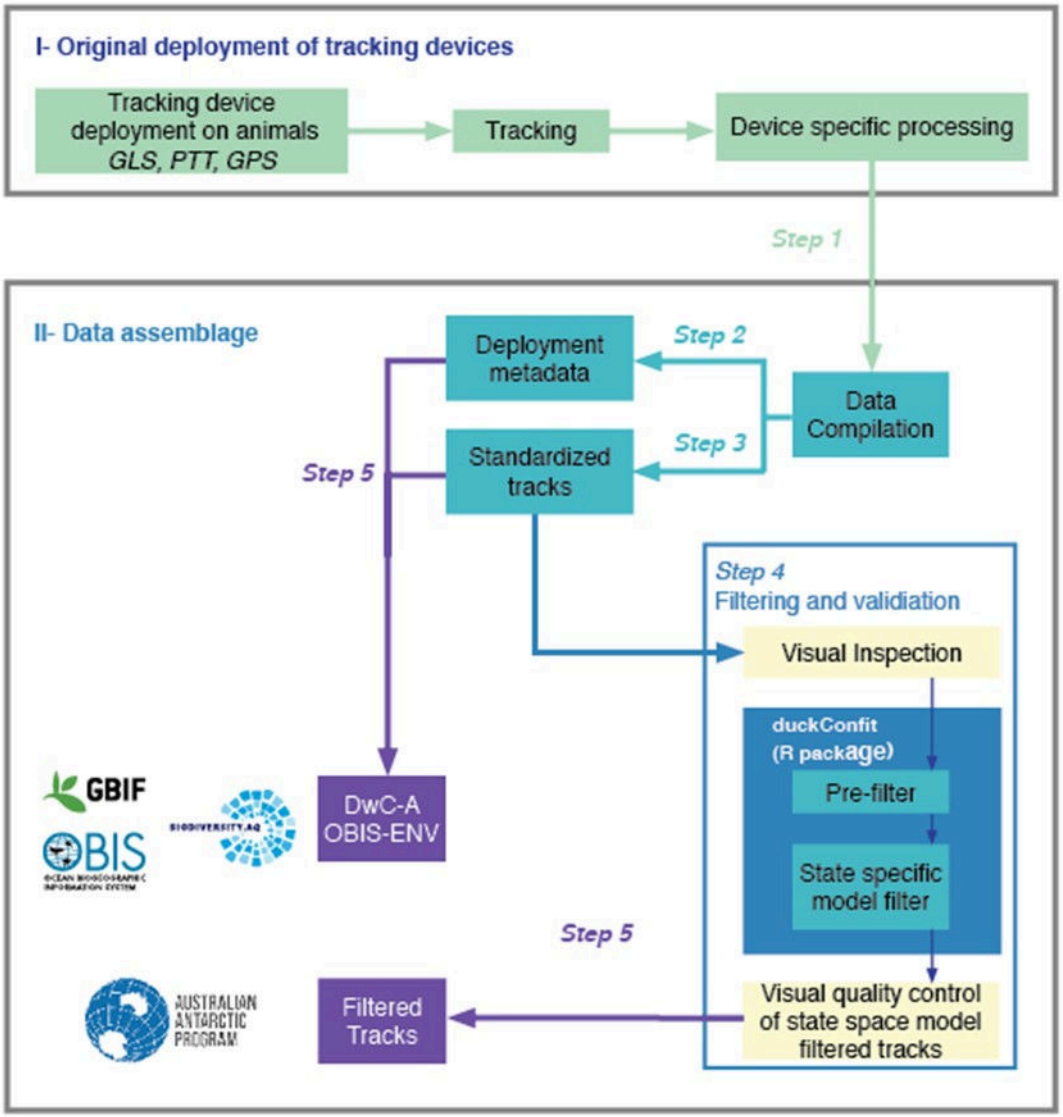


RAATD is a multi-species assessment of Antarctic top predators to identify Areas of Ecological Significance.
The project provides:

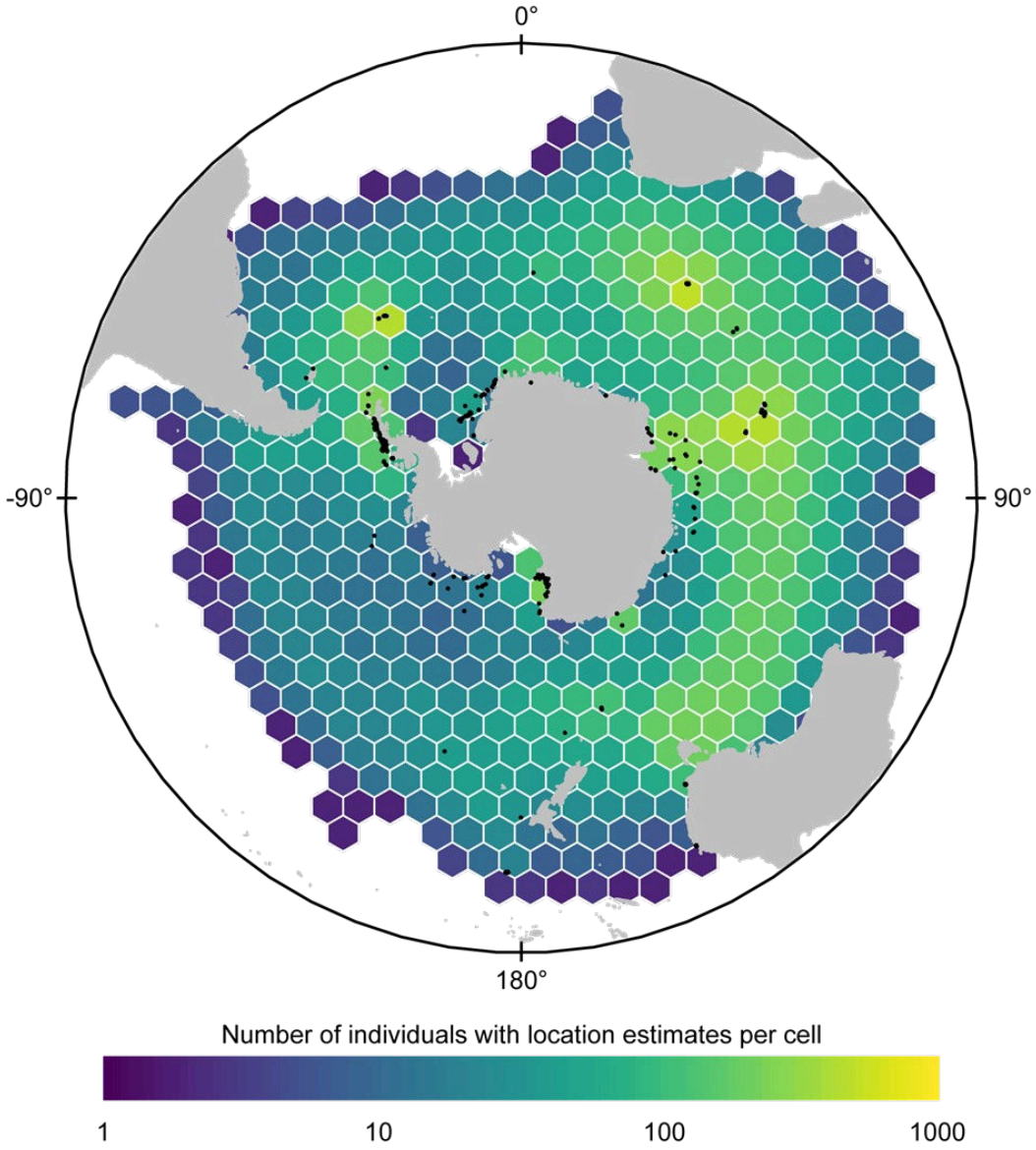
(i) a greater understanding of fundamental ecosystem processes in the Southern Ocean

(ii) facilitate future projections of predator distributions under varying climate regimes and

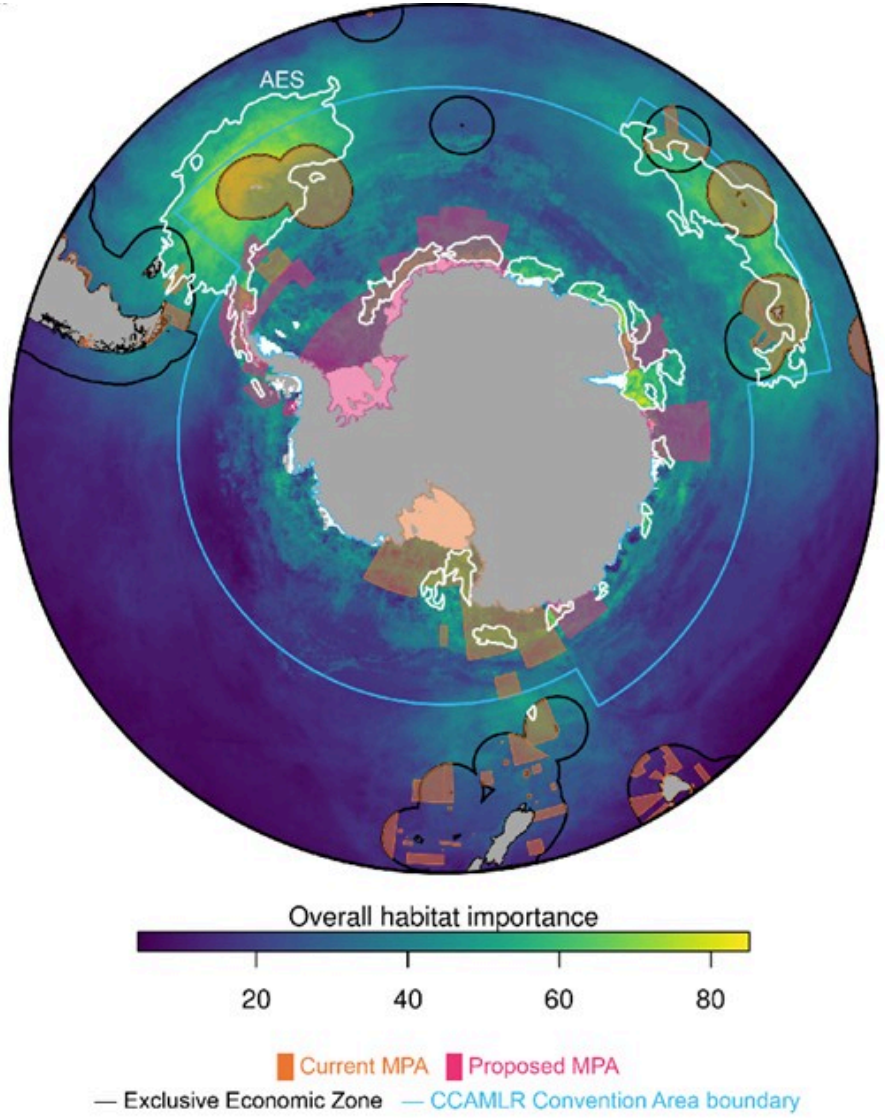
(iii) provide input into spatial management planning decisions for management authorities such as CCAMLR.



Data workflow from tracking-device deployment on animals to state-space model-filtered tracks (and associated data). Arrows and boxes correspond to the specific sections in the text. The blue box indicates the filtering and validation workflow for which R scripts are provided; purple boxes indicate publicly-available data files through the AADC and Darwin Core packages available through the Global Biodiversity Information Facility (GBIF) and Ocean



Spatial distribution of the number of individuals tracked per 25,000 km2 hexagonal grid cell throughout the domain of the dataset. Deployment locations are shown with black points. The map is a Lambert Azimuthal equal area projection, showing the area 90° S to 20° S.



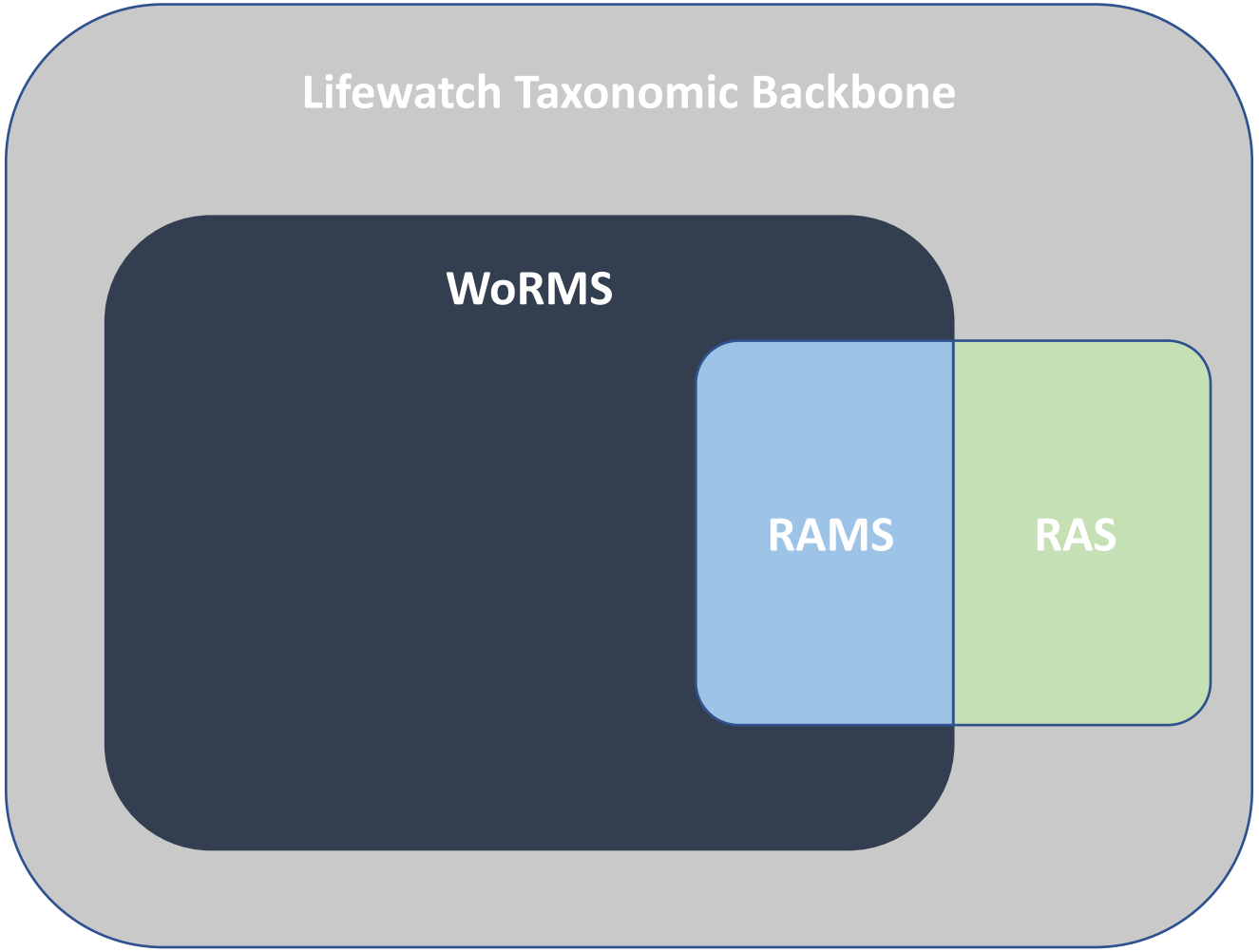
Current (orange polygons) and proposed (magenta polygons) Marine Protected Areas (MPAs) superimposed on overall habitat importance identified from analysis of tracking data from 17 species. White contours denote Areas of Ecological Significance (AES), black lines show national Exclusive Economic Zones, and the blue line denote the CCAMLR Convention Area Boundary

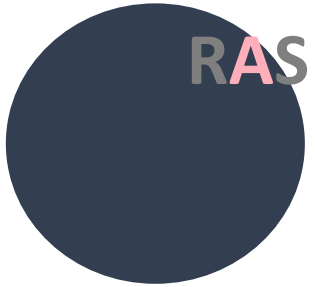
Project summary: Register of Antarctic Species

Anton Van de Putte

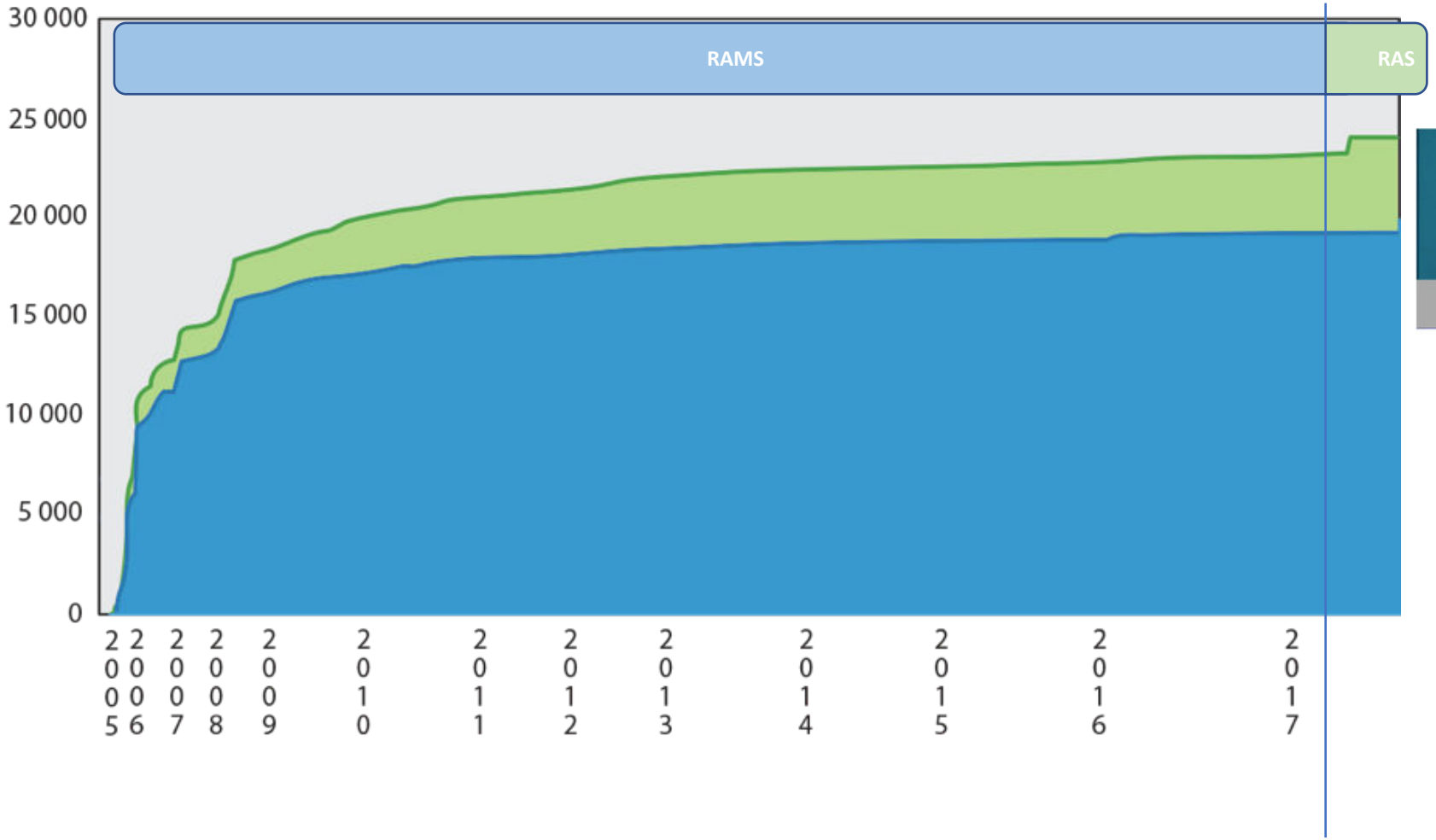
See: http://ras.biodiversity.aq and http://www.biodiversity.aq

RAS.biodiversty.aq



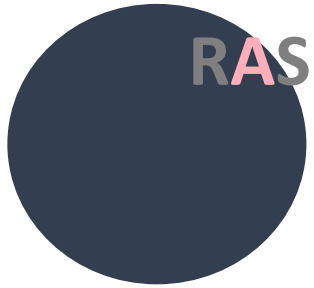


Taxonomic Backbone



Different ways of accessing

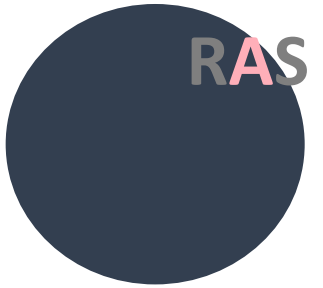
- Ras.biodiversity.aq
- www.marinespecies.org/Ras
- R-package: https://cran.r-project.org/web/packages/worrms/index.html



Future plans

- Adding trait information

- http://www.marinespecies.org/documents/LifeWatch%20reports/editor%20workshop%20reports/20191125_WoRMS_RAS_Traits_workshop_Report.pdf

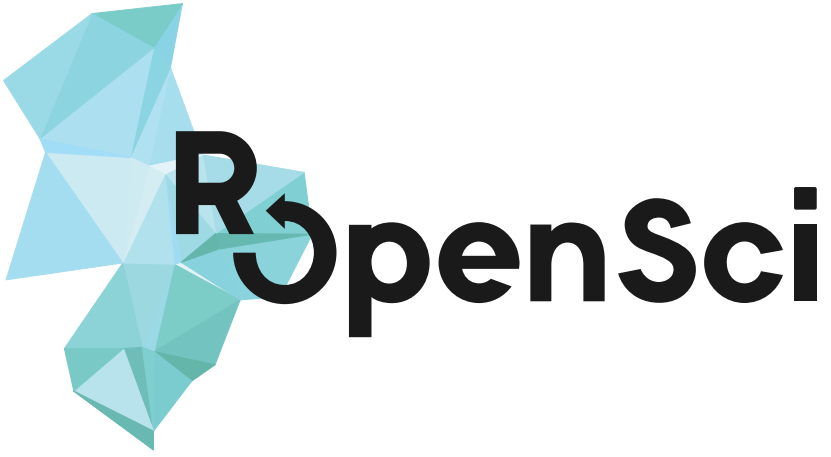


Project summary: rOpenSci

Ben Raymond

See https://scar.github.io/ropensci/ and https://ropensci.org/

Also the SCAR Data Laundry slack Channel (contact Anton or Ben for an invite)



Membership

https://scar.org/science/egabi/contact/

General membership

- open to anyone
- join our mailing list: https://lists.scar.org/mailman/listinfo/abi

Core group

8–10 members: visible, active

- chief officer (Ben), deputy (Anton), secretary (currently vacant)
- other roles: communications officer, liaisons with other SCAR and community groups, project leaders

Next steps

- call for EOIs for core group members (soon)
- revision of EGABI work plan and projects
- increase visibility and engagement across the SCAR community

Questions and discussion