



# SCAR Southern Ocean Continuous Plankton Recorder (SO-CPR) survey: the first three decades.



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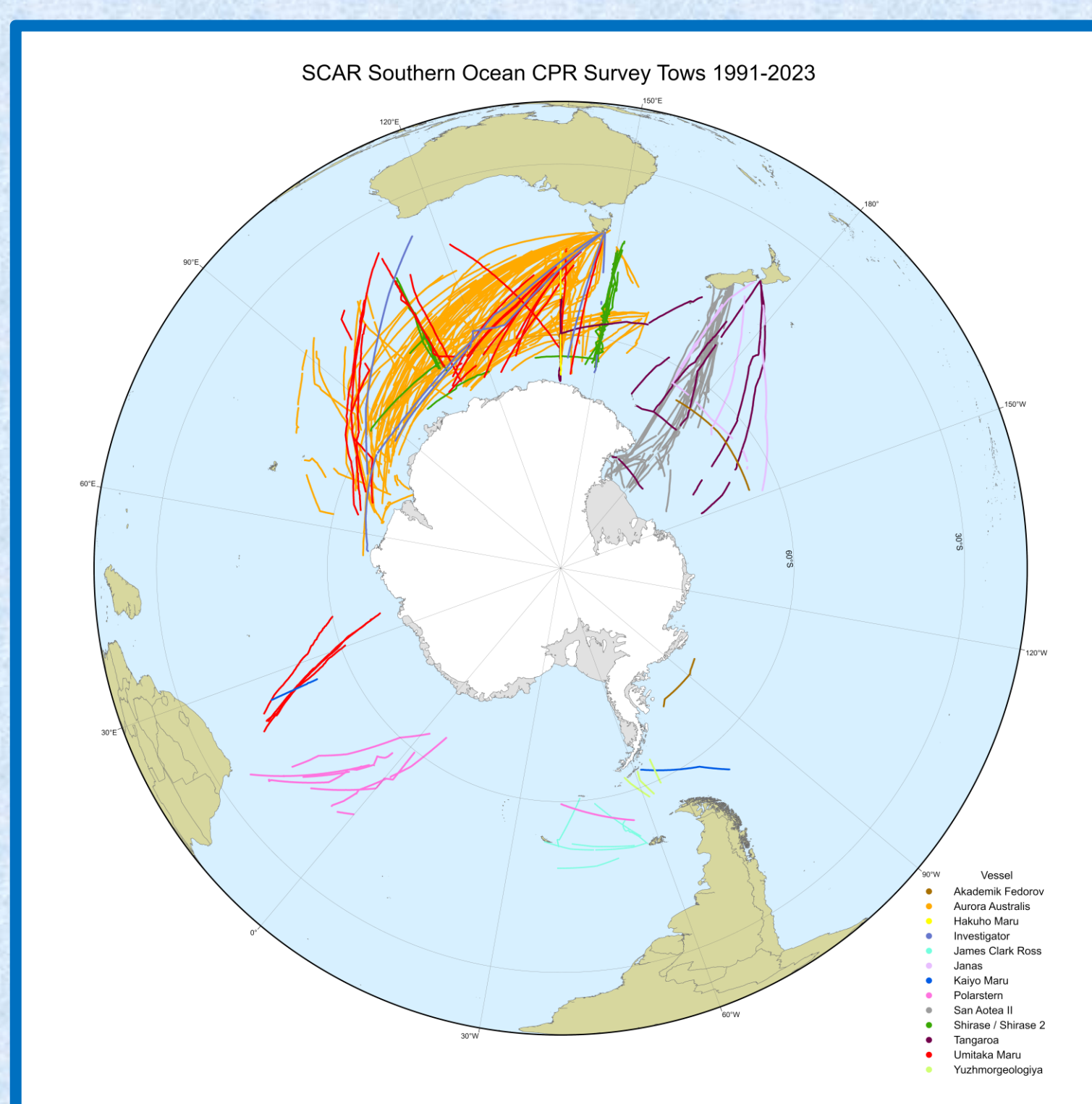


CPR retrieval onboard Aurora Australis. Photo: Mark Horstman (AAD)

Plankton are sensitive indicators of environmental changes in oceans. The Continuous Plankton Recorder (CPR) can collect surface zooplankton continuously for 450 nautical miles during a single tow at normal ship speed. It is an effective and efficient monitoring tool for detecting surface zooplankton abundances, species composition, and distribution patterns over large oceanic scales.

The SCAR (Scientific Committee on Antarctic Research) Southern Ocean CPR (SO-CPR) Survey commenced in 1991 and provides the largest comprehensive and systematic Antarctic zooplankton data set. This is ideal for mapping the seasonal, inter-annual, long-term and spatial variation in plankton diversity.

## SCAR SO-CPR: key statistics



- survey currently in 33<sup>rd</sup> season
- significant circum-Antarctic coverage
- ~ 290,000 nautical miles of data collected
- ~ 30-40 tows each year
  - ~ 3,500 samples at 5 N-mile (9.2 km) resolution
- ~ 57,000 samples for species-level ID
  - 290+ zooplankton taxa coupled with environmental data
  - ~ 32,000 samples for PCI (since 2007)
  - micro-plastic counts (since 2009)
- > 70 CPR-based publications
  - research papers, chapters, atlases, reviews and theses

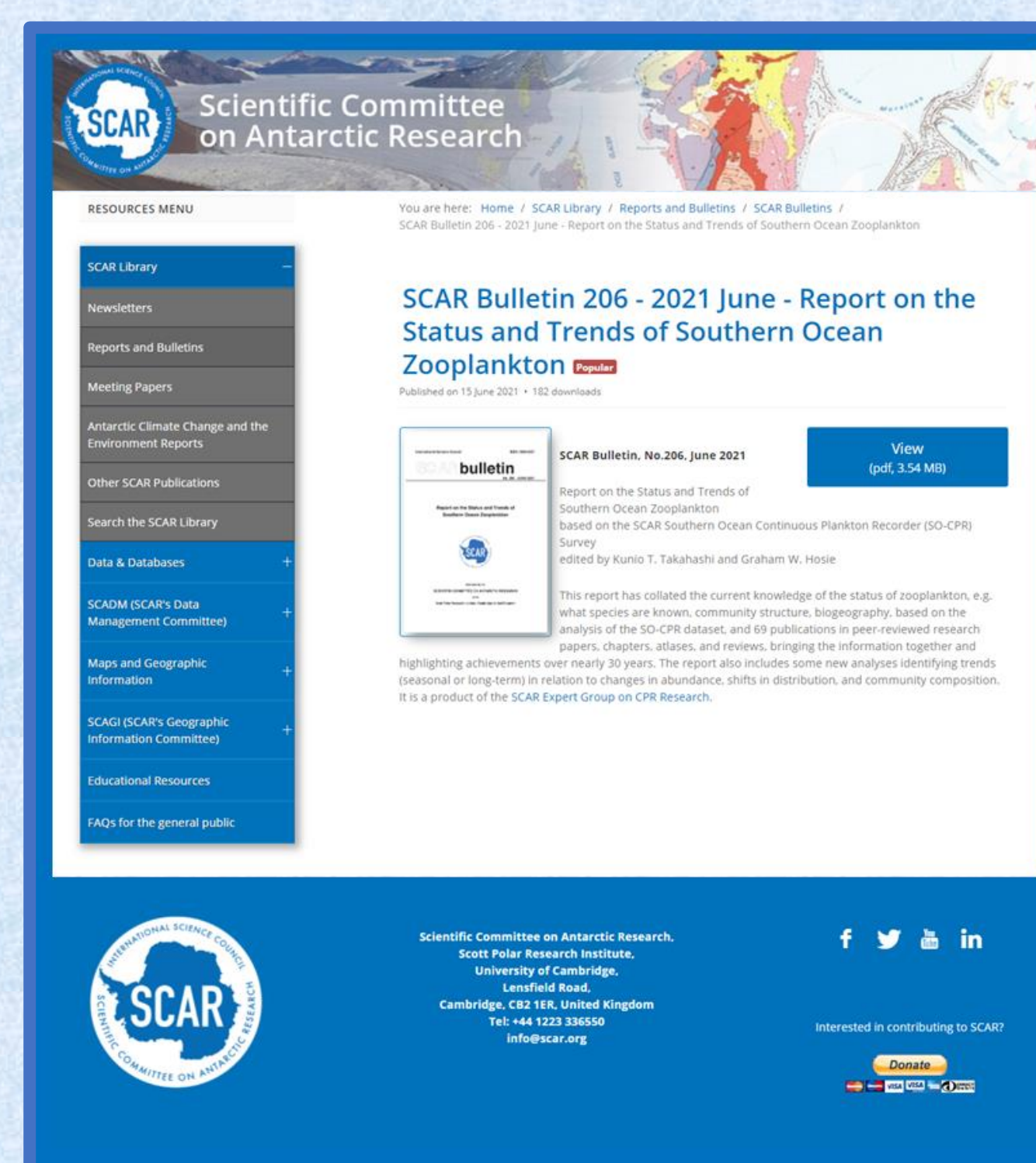


Selection of CPR silks, showing trapped zooplankton. Photos: John Kitchener (AAD)

Our database is hosted by the Australian Antarctic Data Centre: <https://data.aad.gov.au/aadc/cpr/>

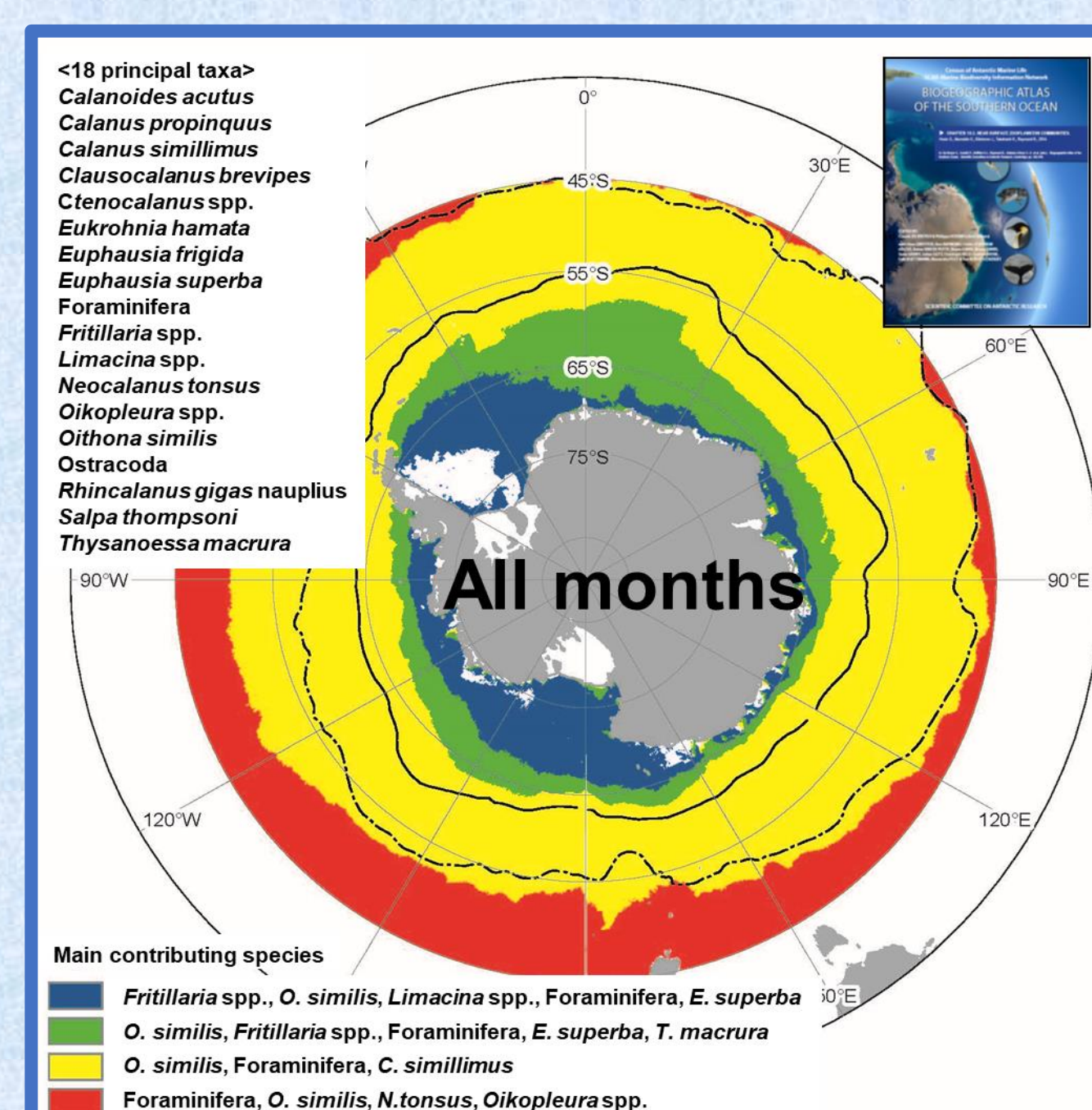
Our dataset has become an important source of data and information for other SCAR products. The dataset is widely used by various agencies, researchers and graduate studies.

## Outputs:



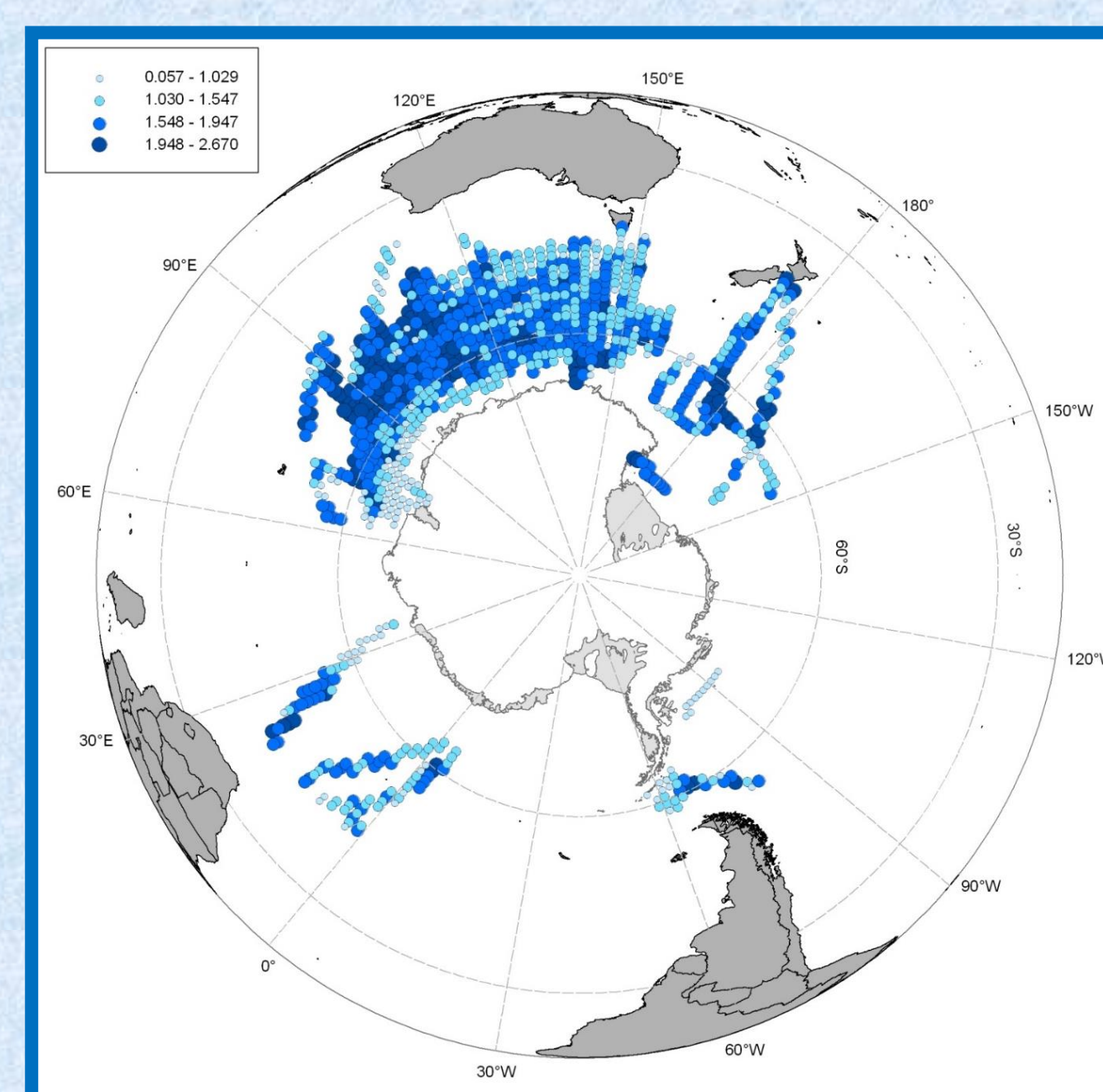
Report on the Status and Trends of Southern Ocean Zooplankton (Takahashi and Hosie eds. 2021 *SCAR Bulletin* 206).

- highlights the achievements from nearly 30 years of the SO-CPR
- identifies new trends in zooplankton abundance and community composition



SCAR Biogeographic Synthesis Atlas (Map 2, Hosie *et al.* 2014, *Biogeographic Atlas of the Southern Ocean*).

- defines zooplankton biogeographic zones for the upper surface layers for each month
- predicted distributions based on Generalized Dissimilarity Modelling



Zooplankton Atlas of the Southern Ocean (Fig. 2, McLeod *et al.* 2010, *Polar Science*).

- distribution and abundance of the 50 most abundant zooplankton taxa (1991-2008)

Website: <https://www.scar.org/science/cpr/>

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**The continuation of the current SO-CPR program, the monitoring and mapping of zooplankton, with the continued accumulation of data, will further improve our baseline information on zooplankton abundances and distributions allowing us to detect and help understand the effects of climate change impacts on the ecosystem.**