



<b>IP</b>	<b>5</b>
Agenda Item:	3.3
Person Responsible:	Mike Sparrow

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# **SCAR Products**



## Executive Summary

**Title:** SCAR Products

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**Introduction/ Background:** For the benefit of SCAR scientists and the wider community (including the Committee for Environmental Protection), SCAR provides several products that support the work of SCAR scientists but are also made widely available to others. These products provide scientific information in a form that is useful to scientists and others, for example providing meteorological data (Met-READER) or biodiversity data (e.g. biodiversity.aq) in a more easily usable format or providing access to information on bathymetry in the Southern Ocean (IBCSO).

A full list of SCAR Products is available from: <http://www.scar.org/researchgroups/productsandservices/>

**Important Issues or Factors:** Highlights over the last year include the production of IBCSO Version 1.0, publication of BEDMAP 2 and amalgamation of SCAR MarBIN and ANTABIF into Biodiversity.aq

**Partners:** SCAR products rely on national efforts to lead with the SCAR Products. Some Products are joint with other organisations e.g. IBCSO is SCAR, IODC and the IHO.

**Budget Implications:** Some products receive support from the SSGs

## The SCAR Products

### Introduction

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### The Products

The full list of SCAR Products currently consist of:

- ADD - Antarctic Digital Database
- ADMAP - Antarctic Digital Magnetic Anomaly Project
- Antarctic Biodiversity Information Facility (ANTABIF) and SCAR Marine Biodiversity Information Network (SCAR-MarBIN) – now merged under biodiversity.aq
- Antarctic Biodiversity Database
- Antarctic Map Catalogue
- Antarctic Master Directory (AMD)
- BEDMAP2 - Antarctic Bedrock Mapping
- CGA - Composite Gazetteer of Antarctica
- CPR - Continuous Plankton Recorder Database
- IBCSO - International Bathymetric Chart of the Southern Ocean
- READER - REference Antarctic Data for Environmental Research
- SDLS - Seismic Data Library System

For further details see: <http://www.scar.org/researchgroups/productsandservices/>

### Selected Highlights

#### *Release of IBCSO Version 1.0*

The International Bathymetric Chart of the Southern Ocean (IBCSO) project was initiated in 2006 with the objective to design and implement an enhanced digital database that contains bathymetric data available south of 60°S latitude. IBCSO is endorsed by international organizations such as the Intergovernmental Oceanographic Commission (IOC) of UNESCO, the International Hydrographic Organization (IHO), and the Scientific Committee on Antarctic Research (SCAR).

Access to high quality Southern Ocean bathymetry information is key to understanding a range of ocean and cryospheric processes. Sea floor topography controls ocean circulation and ocean mixing - and has strong influence on global climate. For example, it is critical for understanding and modelling oceanic gateways and barriers, the nature of the thermohaline circulation and the flow of Antarctic bottom water and the stability of the Antarctic ice sheets.

In April 2013 IBCSO Version 1.0 was released by the Alfred-Wegener-Institute (AWI), in Germany. AWI hosts the data repository and the IBCSO web site and over the years has been responsible for populating the

database and quality control to rigorous standards. The map and data are now available for download and a printed version will also be available. More details can be found at: <http://www.ibcso.org>

### *BEDMAP 2 Published*

Bedmap2 is a new suite of gridded products describing surface elevation, ice-thickness and the sea floor and subglacial bed elevation of the Antarctic south of 60°S. These products were derived using data from a variety of sources, including many substantial surveys completed since the original Bedmap compilation (Bedmap1) in 2001. In particular, the Bedmap2 ice thickness grid is made from 25 million measurements, over two orders of magnitude more than were used in Bedmap1. In most parts of Antarctica, the subglacial landscape is visible in much greater detail than was previously available and the improved data coverage has in many areas revealed the full scale of mountain ranges, valleys, basins and troughs, only fragments of which were previously indicated in local surveys. The derived statistics for Bedmap2 show that the volume of ice contained in the Antarctic ice sheet (27 million km<sup>3</sup>) and its potential contribution to sea-level rise (58m) are similar to those of Bedmap1, but the Bedmap2 compilation highlights several areas beneath the ice sheet where the bed elevation is substantially lower than the deepest bed indicated by Bedmap1. These products, along with grids of data coverage and uncertainty, provide new opportunities for detailed modelling of the past and future evolution of the Antarctic ice sheets.

A total of 60 authors from 35 institutions in 14 countries were involved in the production of the Bedmap2 publication, which is available from the website of the journal *The Cryosphere*.

For further details see: [http://www.antarctica.ac.uk/bas\\_research/our\\_research/az/bedmap2/index.php](http://www.antarctica.ac.uk/bas_research/our_research/az/bedmap2/index.php)

### *Biodiversity.aq*

The renewed international Antarctic Biodiversity portal ([www.biodiversity.aq](http://www.biodiversity.aq)) builds on the legacy of the SCAR Marine Biodiversity Information Network (SCAR-MarBIN) and the Antarctic Biodiversity Information Facility (AntaBIF), providing access to both marine and terrestrial Antarctic biodiversity data. The data portal is a key element of the new SCAR (Scientific Committee on Antarctic Research) scientific research programmes 'State of the Antarctic Ecosystem' (AntEco) and 'Antarctic Threshold- Ecosystem resilience and Adaptation' (AnT-ERA). The scientific coordination and technical implementation of biodiversity.aq is supported by the Belgian Science Policy Office (BELSPO), through the Belgian Biodiversity Platform ([www.biodiversity.be](http://www.biodiversity.be)).