

SCAR LSSSC Report 2007

SCAR Action Group on Marine Biodiversity Information (SCAR-MarBIN)

Background

SCAR-MarBIN aims at offering free and open access to Antarctic Marine Biodiversity data, through a single webportal (www.scarmarbin.be), which also includes a variety of scientific and technical services. SCAR-MarBIN is a core IPY initiative, and acts as the information component of the Census of Antarctic Marine Life (CAML).

During 2007, SCAR-MarBIN has focused its efforts on data acquisition, international developments and technical advances. SCAR-MarBIN is mainly funded by the Belgian Science Policy, and employs two persons full time:

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SCAR-MarBIN is managed by a Belgian Coordination Committee (10 members, Chaired by the Head of the Belgian Biodiversity Platform), which meets bimonthly, and an International Steering Committee (17 members from 9 countries, Chair: Dr Claude De Broyer, Royal Belgian Institute of Natural Sciences), which meets yearly, back-to-back with the CAML steering committee.

Since its beginning, SCAR-MarBIN has strived to build close relationships with relevant international instances, under the auspices of SCAR. For example, SCAR-MarBIN acts as the regional Antarctic node for OBIS, and is building up a thematic node for GBIF. SCAR-MarBIN works hand-in-hand with the CAML, and acts as its information component. SCAR-MarBIN also interacts with the Joint Committee on Antarctic Data Management (JCADM), in order to keep up with universal standards for data and metadata exchange.

SCAR-MarBIN directly or indirectly interacts with almost 50 institutions worldwide.

SCAR-MarBIN Webportal

One of the first action items for SCAR-MarBIN was to setup a webportal (www.SCARMarBIN.be). The main usage figures for 2007 include:

43,132 visits

572,596 hits

8,50 GB bandwidth

13,580,567 records downloaded

7,955 species/13,335 taxa in RAMS

78 data providers

497,928 distribution records

52 distribution databases linked

The webportal contains information and services relevant to Antarctic marine biodiversity research. Visitors can access general information and services, the Register of Antarctic Marine Species (RAMS), distribution data, mapping tools (WebGIS), Webservices, composite Antarctic Maritime Gazetteer, composite literature database, photo database, RSS news feeds, DiGIR provider, GenBank link, online edition modules for SCAR-MarBIN Editors (RAMS and Gazetteer), dual standard metadata system (IMIS and GCMD), data toolkit.

The Register of Antarctic Marine Species (RAMS)

RAMS is a fully operable, browsable/searchable online species list, dynamically maintained by a board of 61 Taxonomic Editors. RAMS offers access to information on 12,315 taxa (mainly macro/meiobenthic), including direct links to taxonomy, multimedia, literature, molecular and distribution data, and webservices. RAMS is a context of the World Register of Marine Species (WoRMS ; www.marinespecies.org) which contributes to Catalogue of Life and Species 2000.

Distribution data (ANTOBIS)

Through a WebGIS, SCAR-MarBIN offers the possibility to visualize and download raw data on the occurrence abundance of marine organisms. The data is standardized, in order to comply with the data dissemination schemas for efficient publication (OBIS/GBIF), trans-discipline data exchange (WFS/WMS) and avoidance of effort duplication (ISO-compliant metadata systems). Users can download the data in various user-friendly (Text files, tabular web pages, KML (Google Earth) or more advanced (GML, XML, ESRI shapefiles) formats.

Developments

Because of its distributed and collaborative architecture, SCAR-MarBIN can make significant progress on very different aspects, even with modest resources. These developments include: setup of expedition and experts databases, advanced modelization and visualization tools, interactive identification keys, Web Map Server/Web Feature Server, Antarctic field guides, deeplinking with the Barcode of Life databases.

SCAR-MarBIN for Conservation

The CCAMLR Workshop on Bioregionalisation of the Southern Ocean was held in Brussels, Belgium, from 13 to 17 August 2007. After using physical variables to produce primary regionalisations of the Southern Ocean, a number of biological datasets were integrated to the models to evaluate congruence with the obtained regionalisation. Datasets included 33,000 distribution records, 7,600 distinct localities and 3,000 species. The majority of biological data used for validation were extracted from the SCAR-MarBIN webportal. The model results did show diversity hotspots that were not always associated with a high sampling effort and, conversely, highly sampled areas that showed low biodiversity. The analyses clearly indicated some link between the physical classification of the benthic habitat and variation in biodiversity. It was agreed at the Workshop that the initial regionalisation for the benthic environment should be reviewed and optimised for use by CCAMLR and CEP, towards the designation of Marine Protected Areas.

Looking into the Future

The Belgian Science Policy Department continues funding SCAR-MarBIN until the end of year 2009. SCAR-MarBIN is taking action now to continue its activities

beyond this date, by involving various partners in a consortium, for long term maintenance. In its capacity of legacy of the IPY and CAML, SCAR-MarBIN must be maintained as a platform designed to serve the Antarctic community, not only for research, but also as a key operational aspect of decision-making in conservation and management issues.