



Contact: Bruno Danis

+32(2)6274139

bruno.danis@scarmarbin.be

EMBARGOED UNTIL 9 a.m ECT, March 31 2009

Antarctic Marine Biodiversity Data Now Online

An efficient network of specialists, data and tools to explore and safeguard Antarctica formed as legacy of IPY

The International Polar Year (IPY) concluded in March 2009 with a tangible legacy in the form of a network of databases on marine biodiversity that will serve as clearinghouse for all biodiversity-related data gathered since the very first Antarctic research expeditions. The network gathers data describing the species themselves as well as information about their collection history, allowing scientists and conservationists to access the first rigorous census of Antarctic marine life. Created by the Scientific Committee on Antarctic Research's (SCAR), an inter-disciplinary committee of the International Council for Science, the Marine Biodiversity Information Network (SCAR-MarBIN) is a collaborative web portal that provides free and open access to information on Antarctic marine biodiversity (www.scarmarbin.be). The portal started as a major Belgian contribution to the IPY, but grew into an international collaborative effort, with hundreds of scientists from around the world joining forces to build this unique web-based tool, enabling the community to share and publish information that is critical for research but also for conservation purposes.

SCAR-MarBIN News Release: March 31, 2009

Initiated by Drs. Claude De Broyer and Bruno Danis, SCAR-MarBIN is based at the Royal Belgian Institute of Natural Sciences in Brussels, Belgium. SCAR-MarBIN is home to the first complete Register of Antarctic Marine Species (RAMS), an authoritative list of species occurring in the Antarctic seas. RAMS is an online, interactive species list that contains information on more than 15,000 taxa and is constantly updated by more than 70 experts worldwide. RAMS data is shared with the World Register of Marine Species (WoRMS) that contains about 122,500 validated marine species names. Using the latest available visualization and database technologies, SCAR-MarBIN makes it possible to instantly download data and map the occurrence and abundance of polar marine organisms.



Photo: Bruno Danis, RBINS

An amphipod (*Eusirus giganteus*) collected during a Census of Marine Life deep-sea expedition in the Southern Ocean in 2005. Credit: Bruno Danis: Royal Belgian Institute of Natural Sciences

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Huw Griffiths of the British Antarctic Survey said,

“SCAR-MarBIN is a unique tool that allows over a hundred international datasets to be searched and shown on one map. This is the first time such a huge amount of Antarctic biodiversity information has been brought together and is leading to a much better understanding of how and where life in this frozen ocean exists. »

Since the data are standardized, a seamless exchange of information can take place with other online marine database networks, including the Ocean Biogeographic Information System (OBIS) or the Global Biodiversity Information Facility (GBIF).

SCAR-MarBIN is the information partner of the Census of Antarctic Marine Life (CAML), one of 17 projects of the Census of Marine Life. This partnership provided the mechanism to incorporate data generated by 18 CAML-flagged expeditions during IPY, but also laid the foundation for new synergies, which are serving to increase knowledge and understanding of marine life in the Southern Ocean.

If global climate change induces responses in Antarctic ecosystems, SCAR-MarBIN constitutes the best available data resource for assessment and documentation of any ecosystem response, and the identification of areas that may require further investigation or protection. On March 31, SCAR-MarBIN is releasing a new (beta) version of its data portal that will improve its usefulness for science, conservation and sustainable management.

Professor Andrew Clarke of the British Antarctic Survey said :

« The best international science relies on effective communication. Given the remoteness of Antarctica and the many nations contributing to its study, a mechanism for ensuring fast and effective information

flow is essential. SCAR-MarBIN provides that mechanism in an exemplary way. Since its inception SCAR-MarBIN has rapidly established itself as an invaluable tool for allowing a global community not only to gain access to data, but also to analyse and visualize it in innovative and powerful ways. Without doubt, SCAR-MarBIN is now the most important tool for marine ecologists and oceanographers working in the southern polar regions, and its newest version will, without question, increase its value to the scientific community. ».



Census of Marine Life scientists were entertained by Adelie penguins (*Pygoscelis adeliae*) as they rushed out of the cold Southern Ocean water. Census scientists discovered 700 new species in three separate expeditions to the area. Credit: Armin Rose: German Center for Marine Biodiversity (DZMB)

With few resources, but a tremendous amount of support from the scientific community, SCAR-MarBIN has surpassed its objectives for the end of IPY. It now serves as repository for scientific information on Antarctic marine biodiversity, and proudly represents SCAR's contribution to the global effort to explore and preserve Antarctica as “a natural reserve, devoted to peace and science”.

SCAR-MarBIN (Antarctic marine biodiversity information network)

(<http://www.scarmarbin.be>)

The Southern Ocean is of unique ecological, biogeographic and political interest, as noted in a recent Nature Editorial 'The way ahead for polar science' (Nature 457, 1057; 2009). Given the rate and potential catastrophic impact of global change on the Antarctic marine ecosystem, it is vital to have a mechanism for the exchange of relevant scientific information. Antarctic marine biodiversity data has to be widely published, instantly accessible and thoroughly checked, in order to enable timely, science-based management.

SCAR-MarBIN (SCAR's Marine Biodiversity Information Network) establishes and supports a distributed system of interoperable databases, which will be maintained as a Polar Year legacy. SCAR-MarBIN gives a single and easy access to relevant marine biodiversity information and offers, for the first time, a way to quantify the diversity and distribution of Antarctic marine life and to measure how, when and where it has been studied. The data published in SCAR-MarBIN constitute a benchmark for detecting responses to global change, enabling the scientific community to highlight key areas that require investigation or protection. Currently focusing on biogeographic data, SCAR-MarBIN is developing tools to improve its usefulness for conservation and sustainable management.

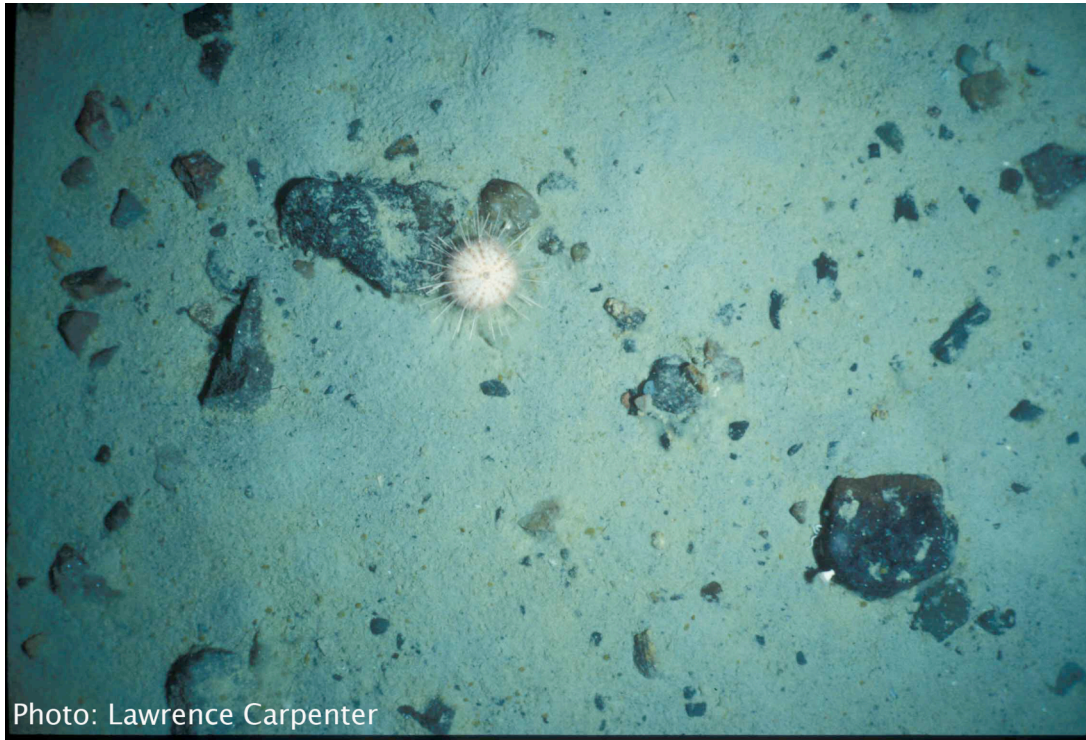
SCAR-MarBIN is presently supported by the Belgian Science Policy Office, the Sloan Foundation, and SCAR.

A brochure is online at :

<http://www.scarmarbin.be/documents/brochure.pdf>

A poster is online at :

<http://www.scarmarbin.be/documents/poster.pdf>



A sea urchin was photographed wandering on the deep-sea bottom during a Census of Marine Life expedition to the Southern Ocean. Credit : Lawrence Carpenter: Virginia Institute of Marine Science

Census of Marine Life (www.coml.org)

The Census of Marine Life is a global network of researchers in more than 80 nations engaged in a 10-year scientific initiative to assess and explain the diversity, distribution, and abundance of life in the oceans. The world's first comprehensive Census of Marine Life - past, present, and future - will be released in 2010. The Census of Marine Life is supported by private sources and government agencies the world over. A list of all supporters is online at

www.comlsecretariat.org/Dev2Go.web?id=302846&rnd=27348.

Census of Antarctic Marine Life (<http://www.caml.aq/>)

The Census of Antarctic Marine Life (CAML) is investigating the distribution and abundance of Antarctica's vast marine biodiversity to develop a benchmark for the benefit of humankind. It is actively surveying the cold Southern Ocean surrounding Antarctica in an attempt to understand the biological diversity of this unique and poorly understood environment. CAML is one of 17 projects of the Census of Marine Life (CoML).

Scientific Committee on Antarctic Research (www.scar.org)

SCAR, the Scientific Committee on Antarctic Research, is the single international, interdisciplinary, non-governmental organization which can draw on the experience and expertise of an international mix of scientists across the complete scientific spectrum. It is, therefore, the obvious source of advice on a wide range of scientific questions and it is ideally placed to provide the answers. For over 30 years SCAR has provided such scientific advice to the Antarctic Treaty System and made numerous recommendations on a variety of matters, most of which have been incorporated into Antarctic Treaty instruments. Foremost amongst these have been the advice provided for the many international agreements which provide protection for the ecology and environment of Antarctica.