



SOUTHERN OCEAN OBSERVING SYSTEM

Report Series

SOOS Data Policy

2015



The SOOS data policy is derived from the SCAR data policy, which is binding on all nations and researchers collecting data south of 60°S. Although there is no international agreement on data management for the waters and land north of 60°S, we hope that researchers working in these areas will voluntarily follow the SOOS data policy, which reflects international best practice in data sharing.

The core principles of the SOOS data policy are:

- Data sharing makes everyone's science better
 - The faster data is shared (while respecting the data collector's right to publish first) the more valuable it is to the community
 - Data contributors must have their intellectual property respected and appropriately acknowledged by users of that data
 - Data management should be a core part of all research projects, rather than something added at the end
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Introduction

SOOS is an international initiative to develop and coordinate a systematic and sustainable observing system for the Southern Ocean. It is sponsored by two organisations of the International Scientific Union (ICSU), the Scientific Committee On Antarctic Research (SCAR) and the Scientific Committee on Oceanographic Research (SCOR).

The SOOS Data Policy is derived from the SCAR Data Policy. Any differences between the two documents reflect the reduction in formal data management obligations north of 60°S. However, SOOS considers that Southern Ocean researchers should be using best practice in data management, as described in both policies.

SOOS believes that, to maximise the benefit of data gathered in the Southern Ocean, all data should be made available to the broader research community fully, freely, openly, and on the shortest feasible timescale. This data policy reflects this broad aim.

Related Data Policies

The SOOS and SCAR data policies have been developed in accordance with:

- the Twelfth WMO Congress, [Resolution 40](#) (Cg-XII, 1995)
- the Thirteenth WMO Congress, [Resolution 25](#) (Cg XIII, 1999)
- the ICSU 1996 [General Assembly Resolution](#)
- the ICSU [Assessment on Scientific Data and Information](#) (ICSU 2004)

- Article III-1c from the [Antarctic Treaty](#)
- the Intergovernmental Oceanographic Commission [Data Exchange Policy](#)
- the Polar Information Commons [statement on ethics and norms of data sharing](#)

Definition

SOOS-endorsed projects are ones that have been officially endorsed by SOOS because they contribute to SOOS objectives and address one of the SOOS science themes. See more about SOOS-endorsed projects [here](#).

SOOS-affiliated data comes from projects that are not officially endorsed by SOOS, but which nonetheless address the SOOS objectives and/or science themes. This category is deliberately broadly-drawn so as to lay out a data management ideal for all researchers working in the Southern Ocean. Such data may be brought into the SOOS fold by being stored in a data repository with which SOOS has formal links, or by being re-used by researchers working with SOOS. See more about SOOS-relevant data repositories [here](#).

Southern Ocean is here defined as all ocean waters south of 40°S, including those covered by the Antarctic Treaty.

Full and open access is defined by ICSU (2004b) as equitable, non-discriminatory access to all data preferably free of cost, but some reasonable cost-recovery is acceptable. WMO Resolution 40 uses the terms “Free and unrestricted” and defines these terms as meaning “non discriminatory

and without charge”. “Without charge”, in the context of this resolution means at no more than the cost of reproduction and delivery without charge for the data and products themselves.

Metadata

Metadata are essential for the discovery, access, and effective use of scientific data. All SOOS-affiliated data should be accompanied by a full metadata record that clearly documents and describes the dataset. In accordance with the ISO standard reference model for an Open Archival Information System (OAIS) (CCSDS 2002), complete metadata may be defined as all the information necessary for data to be independently understood by users and to ensure proper stewardship of the data. Metadata records typically include information about the temporal and spatial range covered by the dataset, contact details for the authors, a description of all fields, and the methods used to acquire the data. In short, a good metadata record provides all the information needed by an unaffiliated person to assess the suitability of the dataset for reuse in other research projects.

Regardless of any data access restrictions or delays in delivery of the data itself, all SOOS-affiliated projects should promptly provide basic descriptive metadata for collected data to the [SOOS metadata portal](#). Ideally, when submitting metadata, all referenced data should be hyperlinked to the metadata record so that it is in an immediately accessible form (not hidden behind passwords or in online systems that restrict access to the data).

The preferred metadata standards of SOOS are the DIF standard used by NASA’s Global Change Master Directory (which hosts the SOOS metadata portal) and ISO 19115. Metadata records can be directly entered into the SOOS portal , and guidance on how to create metadata records is provided at [here](#).

Data Preservation and Access

To ensure the lasting legacy of SOOS-affiliated projects, it is essential to facilitate long-term preservation and sustained access to their data. Data preservation is best achieved through a data repository that has stable infrastructure to preserve data and make it accessible and discoverable through a web interface.

All SOOS-affiliated data should be archived in their most granular, useable form and be accompanied by a complete metadata record. The SOOS DMSC and SOOS International Project Office can assist SOOS-affiliated projects to identify appropriate long-term archives and scientific data centres, but it is generally the responsibility of individual SOOS-affiliated projects to make arrangements with long-term archives to ensure the preservation of their data. SOOS has identified a wide range of [data communities and networks](#) that host and serve specific types of data. The SCAR National Antarctic Data Centres (NADCs) are also a potential source of data hosting facilities for SOOS-affiliated data.

While repository and data service provider accreditation is still in infancy, some of the more mature data centres and data networks are now acquiring accreditation.

Many such entities belong to the [ICSU World Data System](#). It is anticipated that as the concept of accreditation takes greater hold, SOOS will move in the medium-term to require that SOOS-endorsed projects place data in accredited repositories.

The repository and data service providers chosen by SOOS-affiliated projects to manage their data should be capable of providing the following:

- assistance to data providers (scientists) in preparing, supplying and submitting metadata to the SOOS portal,
- the capability to provide data as a service (as per the SOOS Data Policy),
- data archiving services that permits stable online data publication and long-term re-use of data,
- allocation of persistent identifiers (e.g. Digital Object Identifiers) to datasets, and assistance with the development of data management plans.

Data Management Planning

All SOOS-endorsed projects are required (and other Southern Ocean projects encouraged) to prepare a data management plan which outlines the type of data to be captured, modelled or acquired and how it will be managed both during the life of the project and beyond, as well as how it will be shared with the broader research community. All plans should articulate the resources required to implement the plan and outline where data will be hosted for long-term curation. Technical contacts regarding project data management and

data publication should also be included in this document.

Typical data management planning examples and templates can be found [here](#).

Data Users

To recognize the valuable contributions of data contributors (generally scientists who collect, synthesise, model or prepare analysed data) and to facilitate repeatability of research results, data users should formally acknowledge contributors and data sources. Generally, this acknowledgment should take the form of a citation, as when citing a book or journal article. Some journals already require the formal citation of data used in articles that they publish. As a professional courtesy, all SOOS users should formally acknowledge and cite the SOOS datasets that they use in their research publications.

A typical dataset citation might be given in the form: Author list, Date, Dataset Title, Repository, DOI. For example: Allison, Ian and Craven, Mike (2004, updated 2013) Amery Ice Shelf - hot water drill borehole, AM02 CTD mooring data, Australian Antarctic Data Centre - doi: <http://dx.doi.org/10.4225/15/525E0DAF38C7B>

SOOS Infrastructure for Data and Metadata Sharing

SOOS has developed a [metadata portal](#) through NASA's GCMD to aid in data discovery for Southern Ocean scientists. The portal will display any metadata record entered into the GCMD that has a spatial bounding box that overlaps the area south

of 40°S or is tagged as being collected in the Southern Ocean, and that relates to oceans, and any of the SOOS Essential Ocean Variables.

The SOOS International Project Office works with data repositories around the world to find appropriate storage and sharing facilities for datasets.

References

[The Antarctic Treaty](#), 1959.

[CCSDS \(Consultative Committee for Space Data Systems\)](#), 2002. Reference Model for an Open Archival Information System (OAIS). CCSDS 650.0-B-1. Blue Book. Issue 1. Washington, DC: CCSDS Secretariat. [Equivalent to ISO 14721:2002].

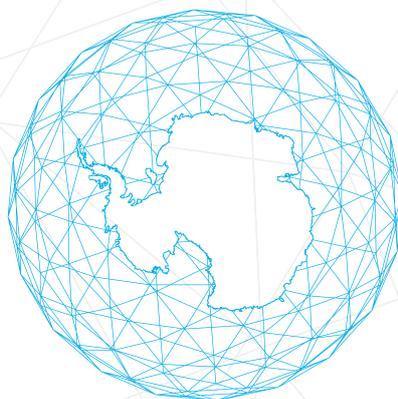
[Intergovernmental Oceanographic Commission Oceanographic Data Exchange Policy](#), 2003.

[ICSU \(International Council for Science\)](#), 2004. ICSU Report of the CSPR Assessment Panel on Scientific Data and Information.

[Resolution of the International Council of Science \(ICSU\) General Assembly \(24-27 September 1996\)](#).

[World Meteorological Organization Congress](#), Resolution 40 (Cg-XII, 1995): WMO Policy and Practice for the Exchange of Meteorological and Related Data and Products Including Guidelines on Relationships in Commercial Meteorological Activities.

[World Meteorological Organization Congress](#), Resolution 25 (Cg XIII, 1999). Exchange of Hydrological Data and Products.



SOOS

SOUTHERN OCEAN
OBSERVING SYSTEM

SOOS is an initiative of the Scientific Committee on Oceanic Research and the Scientific Committee on Antarctic Research



SOOS International Project Office hosted by



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