

## XXVII SCAR Recommendations

### Recommendation SCAR XXVII-1

#### *Concerning Antarctic place-names*

*Noting* that the SCAR Composite Gazetteer of Antarctica (CGA):

- was published in March 1998 by the SCAR Working Group on Geodesy and Geographic Information;
- contains names data from twenty-two SCAR member countries and the International Hydrographic Organization (IHO) / Intergovernmental Oceanographic Commission (IOC);
- comprises around 34,165 entries for 17,097 features, with about 10% of features having two or more entirely different names;

*Noting also* that, with the increasing importance being placed on names for operational and research purposes, there is a requirement for greater accuracy of the coordinates;

*Considering* that, in the interests of both scientific clarity and operational safety, the general principle of 'one name per feature' should apply for all new feature names;

SCAR *recommends* that National Committees, directly or through their national Antarctic naming authority:

1. refer to the SCAR Composite Gazetteer of Antarctica when considering all proposals for new place names;
2. avoid applying new place-names to features already named;
3. submit all new approved place-names to the SCAR Expert Group on Geospatial Information for inclusion in the SCAR Composite Gazetteer of Antarctica;
4. provide existing place-name data to the SCAR Expert Group on Geospatial Information for inclusion in the SCAR Composite Gazetteer of Antarctica.

### Recommendation SCAR XXVII-2

#### *Concerning bathymetric data*

*Noting* that the lack of bathymetric information in large areas of the Southern Ocean is a limiting factor in bathymetric mapping and nautical charting;

*Noting* the initiative from the International Hydrographic Organization for an improved International Bathymetric Chart for the Southern Ocean;

*Noting further* the key role of the International Hydrographic Organization Data Center on Digital Bathymetry located at the US National Geophysical Data Center in Boulder, Colorado, and the efforts of the Intergovernmental Oceanographic Commission / International Hydrographic Organization for updating and maintaining the General Bathymetric Chart of the Ocean;

*Considering* the need for bathymetric maps for the morphological interpretation of the sea-floor structure and general oceanographic studies, the geo-location of scientific data, and the general requirements for precise nautical charts to ensure the safety of navigation in Antarctic waters;

SCAR *recommends* to National Programmes that:

1. they support the acquisition of echo-sounding data on all vessels operating in Antarctic waters and the delivery of those data to the International Hydrographic Organization Data Center on Digital Bathymetry for further use in bathymetric mapping;
2. wherever possible, vessel transits should be planned through oceanic regions where few bathymetric data exist in order to gather additional bathymetric information.

### **Recommendation SCAR XXVII-3**

#### *Concerning geodetic and geographic information*

*Noting* the Antarctic Treaty Article III (1c) requirements regarding data exchange,

*Recognizing* that the information products produced by the SCAR Geoscience Standing Scientific Group are all derived from the work of National Committees and Programmes:

SCAR *recommends* that National Committees request National Programmes to provide continuing access for all SCAR members to fundamental geodetic and geographic information, including:

- geodetic observations and databases;
- geodetic control point and tide gauge records;
- remotely sensed data (including satellite imagery and aerial photography);
- topographic and bathymetric data; and
- place names data.

### **Recommendation SCAR XXVII-4**

#### *Concerning airborne gravity data for geoid computation*

*Noting* that determination of a high resolution geoid in Antarctica benefits research of the ice density of the Antarctic ice sheet, determination of surface elevation relative to mean sea level, and the calibration and validation of satellite missions;

*Recognizing* that there is a major gap in gravity data required for the computation of a high resolution geoid in Antarctica;

*Considering* the current lack of gravity data; the need to acquire gravity data at close intervals (optimally spaced between 10 and 50 km); that new satellite gravity missions will leave a gap at 82–90°S; and that airborne gravity observation is considered the most cost effective and reliable method for collecting data;

SCAR *recommends* that National Committees request National Programmes:

- to support a scientific programme of airborne gravity to cover gaps in Antarctica gravity data; and
- to encourage all researchers to coordinate their efforts in Antarctic gravity data acquisition, in particular airborne gravity data, and to provide such data to the SCAR Geoscience Standing Scientific Group for incorporation into a physical geodetic database of Antarctica.

### **Recommendation SCAR XXVII-5**

#### *Concerning geodetic observations at remote locations*

*Recognizing* the technological advances being made in low power operation, data storage capacity and data communication at remote Antarctic sites

SCAR *recommends* that National Committees, where possible, place long-term Global Positioning System observatories on remote bedrock features (as identified by the SCAR Neotectonics Scientific Programme Group – see [http://www.scar-ggi.org.au/geodesy/antec/proposed\\_gps.htm](http://www.scar-ggi.org.au/geodesy/antec/proposed_gps.htm)) to provide information on the current tectonic motion of the Antarctic plate.

### **Recommendation SCAR XXVII–6**

*Concerning rationalization of scientific activities on King George Island*

*Aware* of the on-going debate on scientific activities that is currently underway on King George Island;

*Appreciating* that national programmes should maintain their own priorities; and

*Noting* the belief of the Working Group on Physics and Chemistry of the Atmosphere that some rationalization of existing research programmes on King George Island would free resources for new scientific projects;

SCAR *recommends* that the relevant National Committees should make efforts to integrate their scientific objectives and to collaborate with other nations.

### **Recommendation SCAR XXVII–7**

*Concerning the King George Island Geographic Information System (GIS)*

*Noting* SCAR Recommendation XXVI-6 concerning rationalization of scientific activities on King George Island;

*Recognising* that a Geographic Information System for the whole island has been produced and is now available on the internet;

SCAR *recommends* that

1. countries with programme activities on King George Island should make use of this integrated system for science activity, environmental planning and logistic operations; and
2. National Committees, through their National Programmes, should continue providing spatially referenced data to the Geographic Information System for the mutual benefit of all National Programmes with activities on the island.

### **Recommendation SCAR XXVII–8**

*Concerning biological prospecting*

*Recognizing* that the Antarctic marine ecosystem has a high biodiversity and is rich in groups of interacting organisms which elsewhere in the world have proved of pharmaceutical value;

*Noting* the increasing international interest in the world-wide exploitation of biodiversity for chemical compounds of use to mankind, and

*Recognizing* that the international legislation for controlling access to genetic resources is based on sovereign rights which do not appear to be applicable in the Antarctic Treaty area south of latitude 60°S,

SCAR *recommends* that National Committees be aware of:

- the possible detrimental direct and indirect effects of any direct collection of Antarctic species for the identification and commercial exploitation of secondary metabolites, enzymes or other useful molecules
- the possibility of patenting of gene sequences from Antarctic organisms for commercial use
- the lack of any legislation under the Antarctic Treaty System specifically focused on these matters.

#### **Recommendation SCAR XXVII-9**

*Concerning the Agreement for the Conservation of Albatrosses and Petrels (ACAP)*

*Recollecting* Recommendation XXVI-Biol 8, covering threats to Southern Ocean seabirds due to mortality in longline fisheries, and

*Noting* existing and new international initiatives to address these problems,

SCAR *recommends* that National Committees, in those countries which are range states for Southern Hemisphere albatrosses and petrels, encourage their governments to sign and ratify the Agreement for the Conservation of Albatrosses and Petrels (ACAP) as soon as possible, so that the Agreement may come into force without undue delay.

#### **Recommendation SCAR XXVII-10**

*Concerning the use of flipper bands on penguins*

*Noting* the increased scientific evidence for negative impacts of flipper bands to penguins;

*Recognizing* that banding studies are still underway within some national programmes;

SCAR *recommends* that National Committees to exercise caution when designing research programmes that require the external marking of penguins, in particular the use of flipper bands, and to implement alternative methods of marking penguins wherever possible.

#### **Recommendation SCAR XXVII-11**

*Concerning drifting buoys*

*Recognizing* the importance of air pressure and temperature data from the sea ice zone to global weather prediction models and climate research;

SCAR *urges* National Committees to support the International Programme for Antarctic Buoys (IPAB).

#### **Recommendation SCAR XXVII-12**

*Concerning meteorological reports from Dome C*

*Recognizing* the importance of surface and upper air meteorological observations over the plateau of East Antarctica for numerical weather prediction;

*Noting* the loss of upper air data from Vostok Station and the fact that South Pole Station is the only source of such data from the interior of the continent;

SCAR *recommends* that the Italian and French National Committees urge their National Programmes to institute 6 hourly surface and 12 hourly upper air observing programmes. This is particularly important in the light of.

### **Recommendation SCAR XXVII–13**

#### *Concerning Antarctic weather data monitoring*

*Noting* that there is a need to maintain the quality of Antarctic weather data, to archive the data in a consolidated climate database and make them readily accessible to researchers of all nations;

SCAR *endorses* the monitoring of Antarctic data received in real time at several hubs of the Global Telecommunications System organized by the World Meteorological Organization and

*requests* the World Meteorological Organization's Working Group on Antarctic Meteorology to ensure that the availability of the observations via data centres is continued.

### **Recommendation SCAR XXVII–14**

#### *Concerning ice core storage and curation*

*Recognizing* the considerable effort by many nations to obtain ice cores for the purpose of reconstructing the climatic history of the Earth and assessing the current climate of the Antarctic; and

*Noting* the critical importance of safekeeping and appropriate curation of these core collections;

*Aware* of the InterICE initiative to bring together ice-core curation facility managers, operators, scientists, and logistics experts for the purpose of exchanging information on successful strategies for accession, safeguarded storage, processing and allocation of ice-core samples;

SCAR *recommends* that National Committees, in those countries that support existing ice-core storage facilities or are planning to construct such facilities in the future, should encourage their National Programmes to participate in InterICE.

### **Recommendation SCAR XXVII–15**

#### *Concerning meteorological data from Automatic Geophysical Observatories (AGOs)*

*Recognizing* that:

- the British and American Antarctic Programmes operate Automatic Geophysical Observatories (AGOs);
- AGOs collect data for studies on solar-terrestrial physics and meteorological variables;
- the British data are collected annually and are available at BAS;
- meteorological data and other information from the US AGOs are placed on the World Wide Web and are refreshed every 24 hours.

- meteorological data are required on the Global Telecommunications System (GTS) operated by the World Meteorological Organization (WMO) at least at 00 GMT and 12 GMT, so that they can be assimilated into operational global models run by a number of centres around the world;

SCAR *recommends* to National Committees that meteorological data from AGOs should be inserted into the WMO GTS at least twice every 24 hours (at 00 GMT and 12 GMT).

### **Recommendation SCAR XXVII–16**

*Concerning the importance of magnetometer data*

*Recognizing* the importance of high precision absolute measurements of the geomagnetic field for:

1. Improving understanding of the structure and evolution of the Earth's interior;
2. Assisting the determination of the International Geomagnetic Reference Field that is a crucial background data set for global solar-terrestrial and other studies;
3. Providing ground truth for present and up-coming satellite missions;

*Noting* increasing satellite and ground-based international efforts related to the current solar maximum;

SCAR *encourages* National Committees and other responsible bodies to establish and maintain these important basic measurements at all feasible Antarctic stations that provide independent coverage.

### **Recommendation SCAR XXVII–17**

*Concerning continued support of existing observatories*

*Recognizing* that the study of Geospace and the Space Weather Environment is now more important than ever, both scientifically and in terms of the practical impact of Space Weather on technological systems in space and on the ground; and

*Recognizing* that the polar regions, and especially Antarctica, provide unique platforms for coordinated multipoint observations of the geospace environment

*Noting* that the ionosphere over the Antarctic continent is now comprehensively monitored by overlapping fields of view of multiple HF radars and

*Noting* the crucial importance of ground-based observatories at distributed high latitude Antarctic sites as facilitated, for example, by the Automatic Geophysical Observatories (AGOs) operated by the United Kingdom and United States;

SCAR *recommends* to National Programmes that these and other similar observations be continued without interruption during the next few years as geophysical activity peaks during and after the current intense solar maximum.

### **Recommendation SCAR XXVII–18**

*Concerning site testing for astronomical observation.*

*Recognizing* the advantage to astronomy of the unique observing conditions on the Antarctic plateau, confirmed by the exceptional conditions existing at South Pole station; and

*Noting* that comprehensive data on the site conditions are an essential pre-requisite to the establishment of new observatories;

SCAR *encourages* responsible organizations and National Programmes to deploy instrumentation to potential new sites to acquire comprehensive data on observing conditions.

### **Recommendation SCAR XXVII–19**

*Concerning metadata records*

*Recognizing* that the generation of metadata records are key components of national science programmes;

*Recognizing* also that the creation of metadata records requires an appropriate level of resourcing for science projects as well as National Antarctic Data Centres (NADCs);

SCAR *recommends* that National Committees urge National Programmes to ensure:

1. that metadata records are created as soon as is feasible after the collection of data; and
2. that appropriate funding is made available to science projects for such records to be created as an integral part of the project.

### **Recommendation SCAR XXVII–20**

*Concerning drilling above Lake Vostok*

*Being aware* that the proposal to drill a further 50 m in the existing borehole at Vostok Station, to extract additional accretion ice as a proxy for sampling the lake water, has significant scientific value;

*Noting* that there is uncertainty about possible lake contamination during further drilling;

*Noting also* that the intention of all interested parties is to ensure proper stewardship of subglacial lake environments;

SCAR *recommends* that additional studies should be carried out before further drilling towards Lake Vostok is undertaken in the existing hole.