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Standing Committee SCAGI
Person Responsible: LI Fei

XXXVII SCAR Delegates Meeting

India, September 2022

SCAR Standing Committee on Antarctic Geographic Information

2020-22 Report

Summary

Report Author(s)

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Summary of activities from 2020-22

The highlights of SCAGI for the period of 2020-2022 are as follows:

1. SCAGI published the International Principles and Procedures for Antarctic Place Names as SCAR Report 41 in October 2021. SCAGI and its Place Names Working Group are now publicising the report and promoting putting recommendations into practise.
2. Updates to the SCAR Composite Gazetteer of Antarctica (CGA). As of 18 July 2022, the number of place names in the CGA is 39,136 (2020: 37,974), referring to 20,440 recognized different features (2020: 19,897).
3. Updates to the SCAR Map Catalogue. The Australian Antarctic Data Centre continues to manage the application and content for the SCAR Map Catalogue. The application has a new web address – mapcatalogue.aq.
4. Air Operaration Planning Maps (AOPM). Australia is about to publish 1 updated map, map 10, and 5 new maps, maps 17-21, completing coverage of the Antarctic coastline in this SCAGI series.
5. Seven new national representatives joined the SCAGI family. And Louise Ireland from the British Antarctic Survey (BAS) was elected as the new co-chair due to the former co-chair Paul Morin's retirement.

Summary Budget 2021 to 2024

	2021	2022	2023	2024
	Spent	Allocated	Request	Request
(US$)	0	0	10000	10000

Future Plans

1. SCAGI will keep publicising the SCAR Report 41 and promoting putting recommendations into practise.
2. SCAGI will try to provide guidance on standards and publishing of spatial data.
3. SCAGI is planning to set up a workshop to review and update specifications for Air Operations Planning Maps Series.
4. The Australian Antarctic Data Centre is currently working on new applications for the CGA and Map Catalogue that will future proof the applications and add some additional functionality. The new sites will have more of a SCAR look.
5. The Australian Antarctic Data Centre is currently working on a new Antarctic coastline of East Antarctica. The new coastline will be published on GeoServer and handed to BAS for inclusion in the Antarctic Digital Database.

Budget

Planned use of funds for 2022 to 2024

Year (YYYY)	Purpose/Activity	Amount (in USD)	Contact Name	Contact Email
2024	support of early-career researchers	3000	Feng Xiao	shaw89@whu.edu.cn
2024	support of researchers from countries with developing Antarctic programmes	3000	Feng Xiao	shaw89@whu.edu.cn
2024	conference expense	4000	Feng Xiao	shaw89@whu.edu.cn
2023	support of early-career researchers	3000	Feng Xiao	shaw89@whu.edu.cn
2023	support of researchers from countries with developing Antarctic programmes	3000	Feng Xiao	shaw89@whu.edu.cn
2023	conference expense	4000	Feng Xiao	shaw89@whu.edu.cn

Additional detail on funds usage and desired results/outcomes

The usage of funds will be divided into three parts, including 1) support of early-career researchers, 2) support of researchers from countries with developing Antarctic programmes, 3) conference expense.

We will invite 1-2 places for early-career researchers and researchers from countries with developing Antarctic programmes to attend the SCAGI annual meeting every year, respectively. The support will cover their travel and accommodation costs. The apply for the support can be via from the SCAGI national representatives. We hope to promote communications of early-career researchers and researchers from countries with developing Antarctic programmes on Antarctic geographic information.

SCAGI will have meetings within the members every year. Thus, parts of the funds will be used as the conference expense. Progresses and prospects on the SCAGI product will be discussed via the meeting.

Percentage of the budget to be used for support of early-career researchers

- 2022: 0%
- 2023: 30%
- 2024: 30%

Percentage of the budget to be used for support of researchers from countries with developing Antarctic programmes

- 2022: 0%
- 2023: 30%
- 2024: 30%

Membership

Leadership

Role	First Name	Last Name	Affiliation	Country	Primary Language	Email	Date Started
Co-chair	Fei	Li	Wuhan University	China	Chinese	fli@whu.edu.cn	21 Oct 2020
Co-chair	Louise	Ireland	British Antarctic Survey	UK	English	louela@bas.ac.uk	After approval

*(Please identify early-career researchers with * in first column)*

Other members

First Name	Last Name	Affiliation	Country	Primary Language	Email
Sergio	Cimbaro	Instituto Geográfico Nacional	Argentina	Spanish	scimbaro@ign.gob.ar
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Pablo	Fontana	Instituto Antártico Argentino	Argentina	Spanish	ftp@mrecic.gov.ar
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*(Please identify early-career researchers with * in first column)*

Additional information (optional)

Major Outcomes

1. **Publication of International Principles and Procedures for Antarctic Place Names**

   In October 2021, SCAGI published SCAR Report 41, International Principles and Procedures for Antarctic Place Names. The Place Names Working Group led initially by Jean-Yves Pirlot (Belgium) and later by Ursula Harris (Australia), worked with editors Wendy Shaw (New Zealand) and Jennifer Runyon (USA). The draft report was circulated widely and contributions were received from: Songtao Ai and Fei Li (China), Carlo Baroni (Italy), Élisabeth Calvarin (France), Antonie Haas (Germany), Ekaterina Evdokimova and Andrej Mukhin (Russian Federation), Adrian Fox (UK) and Lyubomir Ivanov (Bulgaria). The document was peer reviewed by Catherine Cheetham (UNGEGN). SCAGI and its proceeding body, the Working Group on Geodesy and Geographic Information, tried for many years to establish some Principles and Procedures. SCAGI and its Place Names Working Group are now publicising the report and promoting putting recommendations into practise.

   This document provides signatories to the Antarctic Treaty with clear principles and procedures for the use of existing names for features in Antarctica (south of 60°S) and for the application of new names for previously unnamed features on maps, in scientific publications, and in databases.

2. **Antarctic Place Names Reference List and new Antarctic Place Name Proposal Form**

   While working of SCAR Report 41, the Place Names Working Group also collated an Antarctic Place Names Reference List, showing naming authorities, toponymic documents and gazetteers by SCAR member countries. And a new Antarctic Place Name Proposal Form was created to assist in the procedure for naming an Antarctic feature.

3. **Antarctic Place Name Improvement in US**

   US tried to improve their Antarctic place names, 11,120 coordinate improvements currently being updated in the USGS Geographic Names Information System (GNIS) as official US recognized place name locations.

4. **PolarGo, a comprehensive online polar GIS platform**

   In China, a comprehensive online polar GIS platform named PolarGo was developed by Wuhan University. PolarGo gives access to ship and aircraft tracks and other publicly available operational and scientific data. It is open and can be accessed via the web-address.

Major Products

1. **SCAR Map catalogue**

   This catalogue contains entries for over 5000 hard copy maps from 26 countries and about 1000 digital maps from five countries. New instructions are provided for creating and validating an upload file for the MapCat.

2. Antarctic Digital Database (ADD)

ADD is a seamless compilation of topographic data for Antarctica to 60°S. ADD is the place to view, query and download topographic datasets such as the Antarctic coastline, contours and rock outcrop. The last release is in May 2022. The main changes to the latest version of the ADD are to the coastline and large areas of ice shelves.

3. SCAR Composite Gazetteer of Antarctica (CGA)

CGA has been compiled over a period of 30 years and consists of 39,137 names that correspond to 20,120 features. The place names information has been submitted by the national names committees from 22 countries and compiled by Roberto Cervellati and Chiara Ramorino from the Italian Antarctic names committee.

4. Sea ice in the Antarctic WebGIS

This WebGIS application (https://maps.awi.de/awimaps/projects/public/?cu=meereisportal_antarctic_daily#home) makes sea ice related data as for example ice concentration data, ice edge information as well as buoy data available. In addition, current RV Polarstern track lines can be plotted to relate recent expedition activity to sea ice conditions back in time to the year 2012.

5. Marine Reflection Seismics WebGIS:

This WebGIS (https://maps.awi.de/awimaps/projects/public/?cu=geophysics_antarctic#home) presents the location of seismic reflection lines acquired by the Geophysics Section of the Alfred Wegener Institute. It documents location, date, contact persons, and descriptions of the surveys.

6. Papers

Ai, S., Wang, S., Li, Y., Liu, L. (2020). Multi-parameter adjustment for high-precision azimuthal intersection positioning. MethodsX, 2020, 7, 100968

Alcántara-Hernández, R. J., Falcón, L. I., Tas, N., Valdespino-Castillo, P. M., Batista, S., Merino-Ibarra, M., & Campo, J. E. (2021). Antarctic Bacteria in Microbial Mats From King George Island, Maritime Antarctica. In Extreme Environments (pp. 171-183). CRC Press.

Antelo, V., Giménez, M., Azziz, G., Valdespino-Castillo, P., Falcón, L. I., Ruberto, L. A., ... & Batista, S. (2021). Metagenomic strategies identify diverse integron‐integrase and antibiotic resistance genes in the Antarctic environment. MicrobiologyOpen, 10(5), e1219. DOI: https://doi.org/10.1002/mbo3.1219.

Azziz, G., Giménez, M., Romero, H., Valdespino-Castillo, P. M., Falcón, L. I., Ruberto, L. A., ... & Batista, S. (2019). Detection of presumed genes encoding beta-lactamases by sequence based screening of metagenomes derived from Antarctic microbial mats. Frontiers of Environmental Science & Engineering, 13(3), 1-12. DOI: https://doi.org/10.1007/s11783-019-1128-1.

Chen, Y., Zhou, C., Ai, S., Liang, Q., Zheng, L., Liu, R., Lei, H. (2020). Dynamics of Dalk Glacier in East Antarctica derived from multisource satellite observations since 2000. Remote Sensing, 2020, 12, 1809

Dunkley, D.J., Hokada, T., Shiraishi, K., Hiroi, Y., Nogi, Y., Motoyoshi, Y. (2020). Geological subdivision of the Lutzow-Holm Complex in East Antarctica: from the Neoarchean to the Neoproterozoic. Polar Science, 26, 100606. 2020.

Geng, T., Zhang, S., Xiao, F., Li, J., Xuan, Y., Li, X., Li, F. (2021). DEM Generation with ICESat-2 Altimetry Data for the Three Antarctic Ice Shelves: Ross, Filchner–Ronne and Amery. Remote Sensing, 13(24): 5137. DOI: 10.3390/rs13245137.

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Ke, H., Ai, S., Yan, B., Zhou, C., Wang, Z., Yang, Y., Liu, T., An, J., Chen, Y. (2022). Iceberg-Induced Tsunamis Near Dalk Glacier, Antarctica. Journal of Surveying Engineering, 48(1).

Lima, L. S., Pezzi, L. P., Mata, M. M., Santini, M. F., Carvalho, J. T., Sutil, U. A., ... & Vega, X. A. (2021). Glacial meltwater input to the ocean around the Antarctic Peninsula: forcings and consequences. Anais da Academia Brasileira de Ciências, 94. DOI: https://doi.org/10.1590/0001-3765202220210811.

Muller-Karger, F., Kavanaugh, M., Iken, K., Montes, E., Chavez, F., Ruhl, H., ... & Soares, J. (2021). Marine Life 2030: Forecasting Changes to Ocean Biodiversity to Inform Decision-Making: A Critical Role for the Marine Biodiversity Observation Network (MBON). Marine Technology Society Journal, 55(3), 84-85. DOI: https://doi.org/10.4031/MTSJ.55.3.28.

Smith, J., Nogi, Y., Spinoccia, M., Dorschel, B., & Leventer, A. (2021). A bathymetric compilation of the Cape Darnley region, East Antarctica. Antarctic Science, 33(5), 548-559. doi:10.1017/S0954102021000298.

Major Impacts

Codes of conduct for activity in Antarctica

The Committee for Environmental Protection accepted the following codes of conduct developed by SCAR: etc.