

UKNCAR Reporting Template

Provide up to two pages of information following the structure below, only filling out those sections where there is new information to report. We are particularly interested in hearing of key activities (e.g. expeditions/cruises/projects) publications, policy outcomes, future initiatives that you would like publicised, or where UKNCAR could help a group/programme liaise with other parts of SCAR.

1. Name of SCAR Group or Programme	<i>Southern Ocean-Antarctic Chronology and Environmental Proxies (SOACEP)</i> – Subcommittee 3 in Theme 1 of <i>Instabilities and Thresholds in Antarctica (INSTANT)</i>
2. Principal UK Researchers	Erin McClymont (Uni Durham), Emma Pearson (Uni Newcastle), Mike Bentley (Uni Durham), Steve Roberts (BAS), Claus-Dieter Hillenbrand (BAS), Robert Larter (BAS)
3. Major activities and progress since previous year involving UK personnel/infrastructure	<ul style="list-style-type: none"> - <i>SOACEP</i> online meetings were held in (i) April 2022 focussing on identifying/refining the objectives and outputs of <i>SOACEP</i>, (ii) May 2022 focussing on defining the scope, range and contents of the two planned white papers on (a) chronology and correlation and (b) palaeoenvironmental proxies, and (iii) May 2023 providing an update on <i>SOACEP</i> progress (see below), insights into new developments in related research programmes (e.g., IODP) and an overview of upcoming scientific meetings of interest and relevant journal special issues - A <i>SOACEP</i> subgroup (no UK participant) met with a subgroup of <i>INSTANT</i> Theme 2 Subcommittee 4 <i>Antarctic Geological Boundary Condition (ABC)</i>, including Stewart Jamieson and Pippa Whitehouse (both Uni Durham), to discuss modelling perspectives on future directions of palaeo-research - Planning of <i>INSTANT Conference</i> (Trieste, September 2023), including submission of abstract for <i>SOACEP</i> workshop - Core writing teams assigned to the two planned <i>SOACEP</i> white papers (no UK researchers included in most recent author list but writing groups will be extended in the future) - A marine geological research project on the West Antarctic continental shelf in the Bellingshausen Sea, which forms a direct component of an overall international research strategy as part of <i>INSTANT</i>, was successfully conducted by <i>SOACEP</i> members

	from the UK and Germany on RV “Polarstern” expedition PS134 from Dec 2022-Mach 2023
4. Major future initiatives and actions involving UK personnel/infrastructure	<ul style="list-style-type: none"> - <i>INSTANT Conference</i>, including <i>SOACEP</i> workshop, to be held in Trieste (September 2023) - Two <i>SOACEP</i> white papers for <i>INSTANT</i> special issue planned (<i>The Cryosphere/Climate of the Past</i>) - Guidelines for standardisation of palaeo-datasets planned - Starter kit with resources, including literature, maps, database and website links, etc., for (new) Antarctic researchers planned - Class at IODP-<i>INSTANT</i> school planned - Provision of continuously updated Quantarctica maps and data sets planned
5. Policy outcomes	-
6. Selected publications	-
7. Funding awards	-
8. Points for discussion at UKNCAR meeting	Is the achieved <i>SOACEP</i> progress sufficient? If not, how can this be improved? Is there too much reliance on progress to be made during the upcoming <i>INSTANT</i> conference and <i>SOACEP</i> workshop? Is <i>INSTANT/SOACEP</i> too big and unfocussed?

UKNCAR Report: SCAR Ant-ICON - Integrated science to inform Antarctic and Southern Ocean Conservation

Antarctic and Southern Ocean environments are facing increasing pressure from multiple threats. The Antarctic Treaty System regularly looks to the Scientific Committee on Antarctic Research (SCAR) for the provision of independent and objective advice based on the best available science, to support decision-making, policy development and effective environmental management. The SCAR Scientific Research Programme Ant-ICON – ‘*Integrated Science to Inform Antarctic and Southern Ocean Conservation*’ – aims to facilitate and coordinate high-quality transdisciplinary research to inform conservation and management of Antarctica, the Southern Ocean and the sub-Antarctic in the context of current and future impacts. The work of Ant-ICON focuses on three Research Themes examining (i) the current state and future projections of Antarctic systems, species and functions, (ii) human impacts and sustainability, (iii) socio-ecological approaches to Antarctic and Southern Ocean conservation, and one Synthesis Theme offering a synthesis of the research results specifically for decision-making and policy development purposes. Research outputs will address environmental challenges facing Antarctica and will offer the best available science to policy and advisory bodies including the Antarctic Treaty Consultative Meeting (ATCM), the Committee for Environmental Protection (CEP) and the Scientific Committee for the Conservation of Antarctic Marine Living Resources (SC-CAMLR).

9. Principal UK Researchers	Kevin Hughes (BAS), Jasmine Lee (BAS), Adrian Howkins (Bristol University),
10. Major activities and progress since previous year involving UK personnel/infrastructure	<ul style="list-style-type: none"> • An in-person workshop to advance socio-ecological research objectives was held at the Scott Polar Research Institute (Cambridge) in September 2022. • A mini-symposium on science to policy communication was delivered at the SCAR Open Science Conference in August 2022. • A session was delivered at the SCAR Open Science Conference on Human Impacts and Sustainability. • On-line workshops were delivered in October 2022 to facilitate environmental reporting and communication to policy makers. The workshop report is available here. • Several academic publications on the science/policy interface are in progress.
11. Major future initiatives and actions involving UK personnel/infrastructure	<ul style="list-style-type: none"> • Development of an on-line tool to allow communication of information on Antarctic human impacts. • Development of a paper on science-policy communication within the context of the Antarctic Treaty System. • Development of a community-wide paper on the human dimensions of Antarctic conservation
12. Policy outcomes	<ul style="list-style-type: none"> • A Working Paper was presented by SCAR to the Committee for Environmental Protection at the Antarctic Treaty Consultative Meeting entitled: Contribution of information to inform State of the Antarctic Environment Reporting (SAER): a potential new SCAR initiative. In response, the CEP encouraged SCAR to develop tools to share environmental information and encouraged SCAR to present an example report to the Committee.

	<ul style="list-style-type: none"> The SCAR Ant-ICON/SC-ATS science policy fellowship was launched with the first recipient (Lucia Ziegler, Uruguay) participating in the CEP (Helsinki, May 2023) and preparing and presenting a paper at the meeting. K. Hughes (UK) acted as the Fellowship mentor.
13. Selected publications	<p>Hawes, I., Howard-Williams, C., Gilbert, N., Hughes, K. A., Convey, P., Quesada, A. (2023) The need for increased protection of Antarctica's inland waters. <i>Antarctic Science</i>, 35. 25 pp. 10.1017/S0954102022000463</p> <p>Convey, P., Hughes, K. A. (2023) Untangling unexpected terrestrial conservation challenges arising from the historical human exploitation of marine mammals in the Atlantic sector of the Southern Ocean. <i>Ambio</i>, 52. 357-375. 10.1007/s13280-022-01782-4</p> <p>Hughes, K. A., Cavanagh, R. D., Convey, P. (2023) Advancing Antarctic climate change policy: Upcoming opportunities for scientists and policymakers to work together [Editorial]. <i>Antarctic Science</i>, 34. 403-407. 10.1017/S095410202200044X</p> <p>Lee, J. R., Terauds, A., Carwardine, J., Shaw, J. D., Fuller, R. A., Possingham, et al. (2022) Threat management priorities for conserving Antarctic biodiversity. <i>PloS Biology</i>, 20. 31 pp. 10.1371/journal.pbio.3001921</p> <p>Hughes, K. A., Santos, M., Caccavo, J. A., Chignell, S. M., Gardiner, N. B., Gilbert, N., Howkins, A., et al. (2022) Ant-ICON – 'Integrated Science to Inform Antarctic and Southern Ocean Conservation': a new SCAR Scientific Research Programme. <i>Antarctic Science</i>, 34. 10 pp. 10.1017/S0954102022000402</p> <p>Burrows, J. L., Lee, J. R., Wilson, K. A. (2023) Evaluating the conservation impact of Antarctica's protected areas. <i>Conservation Biology</i>, 37. e14059. https://doi.org/10.1111/cobi.14059</p>
14. Funding awards	
15. Points for discussion at UKNCAR meeting	

UKNCAR report on the SCAR Scientific Research Programme Near-term Variability and Prediction of the Antarctic Climate System (AntClimNow)



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<p>1. Principal UK Researchers</p>	<p>Tom Bracegirdle, co-chair Rachel Cavanagh (BAS), Steering Committee member Liz Thomas (BAS), Steering Committee member Caroline Holmes (BAS), Committee member (monthly talk organiser) Siobhan Johnson (BAS), Committee member (communications)</p>
<p>2. Major activities and progress since previous year involving UK personnel/infrastructure</p>	<p>AntClimNow (https://www.scar.org/science/antclimnow/home/) looks at current trends and prediction of near-term conditions in the Antarctic climate system on timescales of years to decades. These time scales are highly relevant across multiple disciplines and to a range of key stakeholders, whilst aligning strongly with scientific priorities identified as part of the SCAR Horizon Scan. Key aspects of progress since 2022 are:</p> <ol style="list-style-type: none"> 1. Continuation of monthly science talks, which are a successful activity for engaging membership and the wider community. 2. Over the last year AntClimNow is sponsored two international workshops and co-sponsored a third workshop. Over the coming year funding one wr <ol style="list-style-type: none"> a. A international workshop on improving the use of observational data in modelling of the Antarctic climate system took take place at BAS in September 2022. ECRs benefitted from trael b. Co-sponsored a polar session (\$5k USD) at the atmospheric rivers conference in Chile in October 2022, see https://cw3e.ucsd.edu/iarc2022_ars_and_polar_meteorology_and_climate/ c. Co-sponsorship of the NERC NC-International SURFEIT project kick-off meeting July 2023. d. Sponsorship of a workshop on working towards an Antarctic radiation observation network [July 2023]. e. Contribute to discussions on climate impacts at a CCAMLR workshop in September 2023.

	<p>3. The membership is continuing to grow. There are now approximately 100 members with a strong international contingent and UK representation.</p> <p>4. A data stewardship and development scheme is successfully helping researchers to develop and maintain observational records of the Antarctic climate system.</p> <p>5. Current initiatives in development include:</p> <ul style="list-style-type: none"> a. An effort to compile a list of Antarctic Climate Indicators, to provide an easily-accessible snapshot of the current state of the Antarctic Climate System. An initial version is planned to go online in summer 2023. b.
<p>6. Major future initiatives and actions involving UK personnel/infrastructure</p>	<p>The co-sponsored SURFEIT workshop in July 2023 (noted above) will take place at BAS headquarters in Cambridge.</p>
<p>7. Policy outcomes</p>	<p>Involvement in the September 2023 CCALMR workshop will be relevant to policy.</p>
<p>8. Selected publications</p>	<p>Libera, S., W. Hobbs, A. Klocker, A. Meyer, and R. Matear, 2022: Ocean-Sea Ice Processes and Their Role in Multi-Month Predictability of Antarctic Sea Ice. <i>Geophysical Research Letters</i>, 49,</p> <p>Hughes, K., Cavanagh, R., & Convey, P. (2022). Advancing Antarctic climate change policy: Upcoming opportunities for scientists and policymakers to work together. <i>Antarctic Science</i>, 34(6), 403-407. doi:10.1017/S095410202200044X</p>
<p>9. Funding awards</p>	<p>BAS EDI Internship to develop Antarctic Climate Indicators (summer 2023)</p>
<p>10. Points for discussion at UKNCAR meeting</p>	

UKNCAR Reporting - Geosciences (including biogeochemistry)

Provide up to two pages of information following the structure below, only filling out those sections where there is new information to report.

1. Principal UK Researchers	Claire Allen, Amber Annett, Stephen Barker, Mike Bentley, Robert Bingham, Ian Hall, Katharine Hendry, Sian Henley, Claus-Dieter Hillenbrand, Kelly Hogan, Joanne Johnson, Tom Jordan, David Pearce, Victoria Peck, Teal Riley, Stephen Roberts, James Smith, Geraint Tarling
2. Major activities and progress since previous year involving UK personnel/infrastructure	<p><u>Thwaites project update pending.</u></p> <p><u>BIOPOLE</u> The National Capability project BIOPOLE, led by Geraint Tarling at the British Antarctic Survey (BAS) and formed from a consortium of 5 NERC institutes (BAS, National Oceanography Centre (NOC), UK Centre for Ecology and Hydrology (UKCEH), British Geological Survey (BGS) and Centre for Polar Observation and Modelling (CPOM)) is in full swing. The aim of BIOPOLE is to understand how sea-ice loss and glacial melting in polar regions affect the chemical balance of the oceans and, in particular, their capacity to sequester carbon and to support ocean productivity. Background research and fieldwork planning for busy 2023/24 field seasons are underway.</p> <p><u>Polar Science Trials</u> The Polar Science Trials took place from January to March 2023 on board the UK's new polar vessel, the RRS <i>Sir David Attenborough</i>. The expedition Principal Science Officers were (PSOs) Sophie Fielding and Kate Hendry (BAS), and included participants from around the UK and international partners. The aim of the trials was to test equipment in polar/deep waters, test multidisciplinary science on board, and carry out some NERC-funded scientific research. Applications included water column sampling for nutrients and trace metals, and multicorer sediment sampling for biological and geochemical analyses.</p> <p>See separate relevant reports for <u>ADMAP/RINGS/AntArchitecture, AntVolc, and Bedmap3.</u></p>
3. Major future initiatives and actions involving UK personnel/infrastructure	The RRS <i>Sir David Attenborough</i> trials will continue in boreal summer 2023, including further geophysics and coring testing, in preparation for geological science expeditions in 2024.
4. Policy outcomes	Geraint Tarling (BAS, lead of BIOPOLE) and Andrew Shepherd (Northumbria, CPOM, BIOPOLE) took part in a UK parliamentary enquiry into the Arctic in June 2023.

<p>5. Selected publications</p>	<p><i>Jordan, T. A., Thompson, S., Kulesa, B., & Ferraccioli, F. (2023). Geological sketch map and implications for ice flow of Thwaites Glacier, West Antarctica, from integrated aerogeophysical observations. Science Advances, 9(22), eadf2639.</i></p> <p><i>Riley, T. R., Millar, I. L., Carter, A., Flowerdew, M. J., Burton-Johnson, A., Bastias, J., ... & Whitehouse, M. J. (2023). Evolution of an accretionary complex (LeMay Group) and terrane translation in the Antarctic Peninsula. Tectonics.</i></p> <p><i>Smellie, J. L., Rocchi, S., & Di Vincenzo, G. (2023). Controlling influence of water and ice on eruptive style and edifice construction in the Mount Melbourne Volcanic Field (northern Victoria Land, Antarctica). Frontiers in Earth Science, 10, 1061515.</i></p> <p><i>Belcher, A., Henley, S., Hendry, K., Wootton, M., Friberg, L., Dallman, U., ... & Manno, C. (2023). Seasonal cycles of biogeochemical fluxes in the Scotia Sea, Southern Ocean: A stable isotope approach. Biogeosciences Discussions, 1-27.</i></p> <p><i>Whitehouse, M. J., Hendry, K. R., Tarling, G. A., Thorpe, S. E., & ten Hoopen, P. (2023). A database of marine macronutrient, temperature and salinity measurements made around the highly productive island of South Georgia, the Scotia Sea and the Antarctic Peninsula between 1980 and 2009. Earth System Science Data, 15(1), 211-224.</i></p>
<p>6. Funding awards</p>	<p>Silicon Cycling in Glaciated Environments (SiCLING) – NERC Pushing the Frontiers grant (£1M) led by Katharine Hendry (BAS)</p>
<p>7. Points for discussion at UKNCAR meeting</p>	

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8. Name of SCAR Group or Programme	Standing Committee on the Antarctic Treaty System (SC-ATS)
9. Principal UK Researchers	Susie Grant (BAS), Kevin Hughes (BAS), Jasmine Lee (BAS) and many other UK researchers from across SCAR groups.
10. Major activities and progress since previous year involving UK personnel/infrastructure	<p>SC-ATS coordinates the provision of SCAR’s scientific advice to the Antarctic Treaty System (Antarctic Treaty Consultative Meeting, Committee on Environmental Protection, Commission for the Conservation of Antarctic Marine Living Resources) – drawing upon expertise from across all SCAR programmes and affiliated groups.</p> <p>SCAR participated in the CCAMLR Scientific Committee and Commission meetings (Hobart, Oct 2022) as an invited Observer, and presented the following papers to the CCAMLR Scientific Committee:</p> <ul style="list-style-type: none"> • SC-CAMLR-41/BG/19 SCAR Annual Report to CCAMLR • SC-CAMLR-41/BG/20 Heightened risk of avian influenza in the Southern Ocean • SC-CAMLR-41/BG/21 Antarctic Climate Change and the Environment Decadal Synopsis • SC-CAMLR-41/BG/22 Workshop on identifying Key Biodiversity Areas for the Southern Ocean using tracking data • SC-CAMLR-41/BG/23 The Southern Ocean contribution to the UN Decade on Ocean Science for Sustainable Development • SC-CAMLR-41/BG/24 Recent highlights and future plans of the Integrating Climate and Ecosystem Dynamics in the Southern Ocean (ICED) programme • SC-CAMLR-41/BG/25 Marine Ecosystem Assessment of the Southern Ocean (MEASO): progress, key outcomes to date, and next steps <p>SCAR also participated in a Special Meeting of the CCAMLR Commission on Marine Protected Areas (CCAMLR-SM-III) as an invited Observer, and presented the following paper:</p>

- CCAMLR-SM-III/BG/08 The importance of marine protected areas in enhancing ecosystem resilience to climate change

SCAR participated in the Antarctic Treaty Consultative Meeting (ATCM) and the Committee on Environmental Protection (CEP) (Helsinki, May/June 2023) as an invited Observer, and presented the following papers:

- WP018 Contribution of information to inform State of the Antarctic Environment Reporting (SAER): a potential new SCAR initiative
- WP039 DML-RINGS and Enderby Land RINGS – opening extensive international collaboration to close critical data gaps for sea-level projections
- WP042 SCAR updates on Antarctic Climate Change and the Environment
- WP049 Antarctic Near-Shore and Terrestrial Observing System (ANTOS)
- IP010 The Scientific Committee on Antarctic Research Annual Report to the XLV ATCM
- IP045 Managing threats to Antarctic terrestrial biodiversity
- IP047 Summary of SCAR’s Strategic Plan 2023-2028
- IP048 Systematic Conservation Plan for the Antarctic Peninsula project – updates and next steps
- IP049 SCAR Lecture: “Satellite-based science and the changing nature of what it means to ‘explore’ Antarctica”
- IP050 Plans for a fifth International Polar Year 2032/33
- IP073 Addressing critical knowledge gaps identified by the IPCC in Antarctica’s future contribution to sea level rise by international collaboration
- IP075 Antarctic Environments Portal
- IP077 The SCAR Equality, Diversity and Inclusion Action Group
- IP078 Plastic pollution in the Southern Ocean
- IP095 Understanding future sea-level change around Antarctica
- IP096 Seismic activity and associated risk in Antarctica
- IP098 Marine Ecosystem Assessment of the Southern Ocean (MEASO) – key findings and recommendations

	<ul style="list-style-type: none"> • IP100 Anthropogenic noise in Antarctic terrestrial environments • IP101 Heightened risk of avian influenza in the Antarctic Treaty Area • IP102 Assessing the risk of climate change impacts on Antarctic heritage values: an update on progress • IP104 Update on the Southern Ocean contribution to the United Nations Decade of Ocean Sciences for Sustainable Development <p>In 2023, the first SC-ATS/Ant-ICON science-policy fellowships were awarded to Lucia Ziegler (Uruguay) – mentored by Kevin Hughes (BAS), and Kirsten Steinke (US) – mentored by Susie Grant (BAS). These fellowships aim to facilitate participation of early/mid-career researchers in policy forums including the CEP and SC-CAMLR.</p>
11. Major future initiatives and actions involving UK personnel/infrastructure	Participation in CCAMLR Scientific Committee and Commission meetings (Oct 2023) and CEP/ATCM (May 2024) – ongoing development of advice and provision of information as requested by these bodies on topics including: climate change, systematic conservation planning, state of the Antarctic environment reporting, and development of an environmental impact monitoring framework.
12. Policy outcomes	The Antarctic Climate Change and the Environment Decadal Synopsis report (Chown et al., 2022) was widely welcomed by the Antarctic Treaty Parties at ATCM XLIV, and resulted in agreement to hold a full-day joint session of the CEP and the ATCM in 2023 to further consider their implementation. This joint session resulted in the Helsinki Declaration on Climate Change and the Antarctic .
13. Selected publications	
14. Funding awards	
15. Points for discussion at UKNCAR meeting	

Report from UK Polar Data Centre (PDC) for UKNCAR 30/06/2023

The UK Polar Data Centre (PDC) is the UK's National Antarctic Data Centre. It provides a secure long-term repository for polar and cryospheric data. Data are made available, normally using the UK Open Government Licence (<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>), and can be provided with a DOI to allow proper citation of the data. This enables scientists to comply with the UKRI Open Access Policy. It forms part of NERC's Environmental Data Service (<https://eds.ukri.org>) which is commissioned on a five-year basis. This service has just been recommissioned with current funding running from 2023-2028. The PDC is certified by the [CoreTrustSeal](#). This is an internationally recognised certification scheme for data repositories that signifies a repository is sustainable and trustworthy, following best practices to manage the data it holds.

SCADM

The UK member on the Standing Committee for Antarctic Data Management is Helen Peat who attends monthly video calls and presents an annual report on UK polar data management activities. The 2022 UK report was presented to SCADM in December 2022. The terms of reference for SCADM can be found in Appendix A. SCADM have produced a new data policy for SCAR (<https://www.scar.org/library/products/scadm/5767-scar-data-policy-2022/file/>) which has been endorsed by the SCAR executive and published in 2022. One of its primary aims is to support National Antarctic Data Centres in making Antarctic data FAIR (Findable, Accessible, Interoperable and Reusable). Finding data is facilitated by the Antarctic Metadata Directory (<https://search.earthdata.nasa.gov/search?portal=amd>) which is a metadata catalogue provided by NASA's EarthData Directory. SCADM is keen to work more with SCAR's research programmes and can provide data management advice, particularly when the research programme includes development of a data product. You can get in touch with Helen Peat (hipe@bas.ac.uk) or the SCADM Chief Officer, currently Johnathan Kool at the Australian Antarctic Data Centre, if you would like to find out more.

For example, Alice Frémand in the PDC has worked with the SCAR BEDMAP3 project to standardise and publish all of the underlying data online. The data consists of measurements of ice thickness over the Antarctic continent derived from seismic, ground-based or airborne radar surveys. In total, it is 80+ million points from 270+ surveys collected since 1960s from 50+ international partners that have been published. The data have been standardised to comply with the FAIR data principles and are now discoverable via the [Bedmap data portal](#). Opening up these data, makes Antarctic science more inclusive, allowing all scientists, including those that do not have the opportunity to participate in surveys to advance research in ice sheet modelling or climate change. More information is available in a [data paper](#) and [Jupyter Book](#).

The PDC works closely with the BAS mapping group (MAGIC) and provides DOIs for all layers within the SCAR Antarctic Digital Database of topographic information.

SOOS

A member of the PDC, Petra ten Hoopen, is chair of the Data Management Sub-Committee of the Southern Ocean Observing System (SOOS DMSC). She leads on the team's activities and represents the Committee at the SOOS Scientific Steering Committee. DMSC connects data repositories with interest in multidisciplinary observations in the Southern Ocean and supports delivery of FAIR data to the Southern Ocean research community.

For example, DMSC has collaborated with [EMODnet Physics](#) and Southern Ocean Carbon and Heat Impact on Climate ([SO-CHIC](#)) to further develop SOOSmap – a portal that provides access to a broad spectrum of data products across multitude of data providers and science disciplines and offers a visible way to identify gaps in observing and data sharing efforts. The SOOSmap portal has existed for several years but has undergone a significant redesign in the last 18 months and the **new version of [SOOSmap](#)**, together with a tutorial for new users, was released in March 2023 during the IODC-II Conference in Paris.

DMSC would like to engage with data professionals from all continents and have released in December 2022 a call for new DMSC member [nominations](#). You can contact Petra ten Hoopen (peopen@bas.ac.uk) for more information on the nomination process.

Polar Data Forum V

BAS will be hosting [Polar Data Forum V](#) from October 30th to November 3rd. This is an opportunity for polar data holders to meet and discuss how to make polar data more accessible and interoperable. A call for abstracts and registration is currently open.

Helen Peat 12/06/2023

Appendix A: The Terms of Reference¹ for SCADM are to:

1. Promote long-term preservation and accessibility of data relating to Antarctica and the Southern Ocean in sustainable repositories.
2. Assist in establishing and implementing Antarctic data management policies, priorities and best practices, taking into account and contributing to global best practices.
3. Promote a distributed, interoperable network of accredited National Antarctic Data Centres (NADCs), in accordance with ATCM XXII Resolution 4.1 (1998)².
4. Encourage and enable the community to make data Findable, Accessible, Interoperable, and Re-usable according to the FAIR Principles³ by submission of metadata and data to the Antarctic Data Management System (ADMS).
5. Further develop, design, implement, and improve the ADMS - a system that encompasses the Antarctic Master Directory (AMD), NADCs, other interoperable, networked data repositories, and key data discovery tools.
6. Provide linkages and improve interoperability with other relevant data management systems, initiatives, and repositories; and thereby enhance the accessibility of data relating to Antarctica and the Southern Ocean.
7. Provide guidance to the AMD host.
8. Work with other SCAR groups, Council of Managers of National Antarctic Programs, Committee for Environmental Protection, Commission for the Conservation of Antarctic Marine Living Resources, the Antarctic Treaty Secretariat, and other relevant groups to identify, develop, and publish fundamental datasets of value to the Antarctic Community.

¹ The procedural parts of SCADM's mandate are covered in SCAR's "Rules of Procedure for Subsidiary Bodies", see <https://scar.org/scar-library/search/governance/780-rules-of-proc-subsidbodies-aug10/>

² http://www.ats.aq/devAS/info_measures_listitem.aspx?lang=e&id=258

³ <https://www.force11.org/group/fairgroup/fairprinciples>

UKNCAR Report – SCAGI 2023

1. Name of SCAR Group or Programme	SCAGI – Standing Committee on Antarctic Geographic Information
2. Principal UK Researchers	Louise Ireland – Co-Chair SCAGI and ADD Manager Elena Field – Place names Secretary and Air Operations Mapping
3. Major activities and progress since previous year involving UK personnel/infrastructure	<p><u>Summary</u></p> <ul style="list-style-type: none"> - Election of Louise Ireland as Co-Chair of SCAGI - Committee meeting, October 2022. First meeting since July 2020. Meeting minutes can be viewed here: https://www.scar.org/scar-library/search/products/scagi/5860-scagi-meeting-report-2022 <p><u>Progress on SCAGI products</u></p> <p>Antarctic Digital Database (ADD)</p> <ul style="list-style-type: none"> - Two data updates released in the past year (Nov 2022 and May 2023). Updates to the coastline dataset to reflect recent changes. - Work on developing automatic coastline change detection algorithm - Discussions with Australian Antarctic Division on integrating large coastline update and potential data restructure towards the end of 2023 - Scoping of work to migrate the service to new infrastructure <p>Air Operations Planning Maps Series</p> <ul style="list-style-type: none"> - This is a series of maps designed for planning and situational awareness for Antarctic Air Operations. - The UK released new maps for the 2022/23 season, providing updates and improvements to the previous editions released in 2021. <p>SCAR place names</p> <ul style="list-style-type: none"> - All new names designate by the UK Antarctic Placenames Committee (APC) have been submitted for inclusion in the SCAR Composite Gazetteer - APC has developed a new agreement with ACAN and are planning working groups to foster greater collaboration between the two committees

4. Major future initiatives and actions involving UK personnel/infrastructure	Next committee meeting is arranged for August 2023
5. Policy outcomes	n/a
6. Selected publications	<ul style="list-style-type: none">- SCAR Air Operations Planning Maps Series.- v7.6 and v7.7 of SCAR Antarctic Digital Database. https://www.add.scar.org/
7. Funding awards	n/a
8. Points for discussion at UKNCAR meeting	n/a

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One of its primary aims is to support National Antarctic Data Centres in making Antarctic data FAIR (Findable, Accessible, Interoperable and Reusable). Finding data is facilitated by the Antarctic Metadata Directory (<https://search.earthdata.nasa.gov/search?portal=amd>) which is a metadata catalogue provided by NASA's EarthData Directory.

SCADM is keen to work more with SCAR's research programmes and can provide data management advice, particularly when the research programme includes development of a data product. You can get in touch with Helen Peat (hjpe@bas.ac.uk) or the SCADM Chief Officer, currently Johnathan Kool at the Australian Antarctic Data Centre, if you would like to find out more.

For example, Alice Frémand in the PDC has worked with the SCAR BEDMAP3 project to standardise and publish all of the underlying data online. The data consists of measurements of ice thickness over the Antarctic continent derived from seismic, ground-based or airborne radar surveys. In total, it is 80+ million points from 270+ surveys collected since 1960s from 50+ international partners that have been published. The data have been standardised to comply with the FAIR data principles and are now discoverable via the [Bedmap data portal](#). Opening up these data, makes Antarctic science more inclusive, allowing all scientists, including those that do not have the opportunity to participate in surveys to advance research in ice sheet modelling or climate change. More information is available in a [data paper](#) and [Jupyter Book](#).

The PDC works closely with the BAS mapping group (MAGIC) and provides DOIs for all layers within the SCAR Antarctic Digital Database of topographic information.

SOOS

A member of the PDC, Petra ten Hoopen, is chair of the Data Management Sub-Committee of the Southern Ocean Observing System (SOOS DMSC). She leads on the team's activities and represents the Committee at the SOOS Scientific Steering Committee. DMSC connects data repositories with interest in multidisciplinary observations in the Southern Ocean and supports delivery of FAIR data to the Southern Ocean research community.

For example, DMSC has collaborated with [EMODnet Physics](#) and Southern Ocean Carbon and Heat Impact on Climate ([SO-CHIC](#)) to further develop SOOSmap – a portal that provides access to a broad spectrum of data products across multitude of data providers and science disciplines and offers a visible way to identify gaps in observing and data sharing efforts. The SOOSmap portal has existed for several years but has undergone a significant redesign in the last 18 months and the **new version of [SOOSmap](#)**, together with a tutorial for new users, was released in March 2023 during the IODC-II Conference in Paris.

DMSC would like to engage with data professionals from all continents and have released in December 2022 a call for new DMSC member [nominations](#). You can contact Petra ten Hoopen (peopen@bas.ac.uk) for more information on the nomination process.

Polar Data Forum V

BAS will be hosting [Polar Data Forum V](#) from October 30th to November 3rd. This is an opportunity for polar data holders to meet and discuss how to make polar data more accessible and interoperable. A call for abstracts and registration is currently open.

Helen Peat 12/06/2023

Appendix A: The Terms of Reference¹ for SCADM are to:

1. Promote long-term preservation and accessibility of data relating to Antarctica and the Southern Ocean in sustainable repositories.
2. Assist in establishing and implementing Antarctic data management policies, priorities and best practices, taking into account and contributing to global best practices.
3. Promote a distributed, interoperable network of accredited National Antarctic Data Centres (NADCs), in accordance with ATCM XXII Resolution 4.1 (1998)².
4. Encourage and enable the community to make data Findable, Accessible, Interoperable, and Re-usable according to the FAIR Principles³ by submission of metadata and data to the Antarctic Data Management System (ADMS).
5. Further develop, design, implement, and improve the ADMS - a system that encompasses the Antarctic Master Directory (AMD), NADCs, other interoperable, networked data repositories, and key data discovery tools.
6. Provide linkages and improve interoperability with other relevant data management systems, initiatives, and repositories; and thereby enhance the accessibility of data relating to Antarctica and the Southern Ocean.
7. Provide guidance to the AMD host.
8. Work with other SCAR groups, Council of Managers of National Antarctic Programs, Committee for Environmental Protection, Commission for the Conservation of Antarctic Marine Living Resources, the Antarctic Treaty Secretariat, and other relevant groups to identify, develop, and publish fundamental datasets of value to the Antarctic Community.

¹ The procedural parts of SCADM's mandate are covered in SCAR's "Rules of Procedure for Subsidiary Bodies", see <https://scar.org/scar-library/search/governance/780-rules-of-proc-subsidbodies-aug10/>

² http://www.ats.aq/devAS/info_measures_listitem.aspx?lang=e&id=258

³ <https://www.force11.org/group/fairgroup/fairprinciples>

Number of proposals classified as over 50% polar south under each scheme and high level classification

	2013		2013 Total		2014		2014 Total		2015		2015 Total		2016		2016 Total		2017		2017 Total		2018		2018 Total		2019		2019 Total		2020		2020 Total		2021		2021 Total		2022		2022 Total		2023		2023 Total		Grand Total			
	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y				
Fellowship	1	2	3	5	1	1	2	2	7	2	2	4	3	2	4	1	1	5	7	1	8	6	1	7	7	4	1	5	6	1	7	7	4	1	5	6	1	7	7	4	1	5	6	1	7	7		
Atmospheric				1	1	2	2	2	2			2						2			1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Earth																				1			1	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
Marine	1	2	3	4	4	4	4	4	4	1	2	3	1	1	3	1	4	5	1	1	4	5	1	1	2	3	3	1	1	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1			
Terrestrial					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Large		3	3	9	3	9	5	5	5			5						7	7	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Atmospheric				3	3	3	3	3	3			3																																				
Marine		3	3	1	1	5	5	5	5			5							7	7	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Terrestrial				5	5	5	5	5	5			5																																				
Research Programmes	2	4	6	1	3	4	1	1	2	8	17	25	2	5	7	5	13	18	8	17	25	18	5	23	3	9	12	25	4	29	10	1	11	162														
Atmospheric	2		2	1	1					3	3				1	1	5	5			1	5	5			1	4	1	4	4	4	17																
Earth		2	2		2						2	2	1	1	1	9	10	1	3	4	3			3	1	1	2	2	2	4	2	2	32															
Freshwater										1	1											12	12				1	1	1	1	1	14																
Marine		2	2		1	1	1	1	2	8	10	18	1	4	5	2	2	7	8	15	2	5	7	1	8	9	18	2	20	8	1	9	89															
Terrestrial					1	1			1	1	1	1	1	1	3	2	5	1	1	1	1	1	1	1	1	1	1	1	1	1	10																	
Standard RM	27	9	36	68	5	73	35	5	40	22	1	23	11	4	15	15	2	17	19	4	23	25	4	29	9	2	11	2	4	6	273																	
Atmospheric	8		8	10	10	6	2	8	3			3	4	1	5	5	2	6	5	2	2	1	2	3	1	1	1	1	1	1	45																	
Earth	9	3	12	17	5	22	3	1	4	3		3	1	1	2	4	1	5	3	1	4	5		5	1	1	1	1	1	58																		
Freshwater				3		3	2		2	1		1		2	2							1		1		1		1		9																		
Marine	10	6	16	30	21	2	23	7	1	8	6			6	6	1	7	13	1	14	16		16	8	1	9	2	4	6	135																		
Terrestrial				8		8	3		3	8		8					1	2	3	2	2	4		4		4		4		26																		
Grand Total	30	18	48	74	8	82	52	6	58	37	20	57	16	9	25	24	16	40	34	29	63	49	11	60	19	11	30	31	8	39	10	1	11	513														

Number of proposals classified as less than 50% polar south under each scheme and high level classification

	2013		2013 Total		2014		2014 Total		2015		2015 Total		2016		2016 Total		2017		2017 Total		2018		2018 Total		2019		2019 Total		2020		2020 Total		2021		2021 Total		2022		2022 Total		2023		2023 Total		Grand Total	
	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y				
Fellowship	6		6	6	2	8	2	1	3	5	1	6	3	2	5	4	1	5	3	3	1	1	5	3	8	4	3	8	4	4	49															
Atmospheric			3	2	1	3				1	1	2	1		1	2	1	3	2	2						3	2	5	1	1	20															
Freshwater															1			1				1		1	1	1	1	1	1	3																
Marine	3		3	2	1	3	2	1	3	3		3	1	2	3	2	2	3	2	2	1	1	1	1	1	1	1	2	3	3	23															
Terrestrial				2		2			1		1			1																	3															
Large			10	5	15	10	10	4	4			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	31																
Atmospheric			9	9	9	9	9	9	9																						9															
Marine			1	5	6	10	10	4	4			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	22																
Research Programmes	4	5	9	1	2	3	5	31	36	10	11	21	1	4	5	5	4	9	7	7	14	6	9	15	1	1	2	19	5	24	9	1	148													
Atmospheric	1	4	5	1	1	2	2	29	31	1	7	8	1	1	1	1	1	2	3	3	2	9	11	1	1	1	5	1	6	3	1	74														
Earth	2		2			1		1	1	2	3	1	1	1	2	1	1	2	2	2	1		1				4		4		16															
Freshwater						1			1		1							1				1					3		3	1	6															
Marine	1	1	2		1	1	2	2	4	5	2	7	1	2	3	2	2	4	4	2	6	2	2	2	1	1	7	4	11	5	46															
Terrestrial						2			2		2			1			1	2	2	1	1		1							6																
Standard RM	7	4	11	18	1	19	13	1	14	10	3	13	7	11	18	6	3	9	9	2	11	6	1	7	4	1	5	2	4	6	113															
Atmospheric	2		2	6		6	5		5	7	1	8	2	3	5	4	1	5	6	1	7	2	1	2	3	1	4	1	1	2	46															
Earth	3		3	6		6	2	1	3	1		1	3	1	4	1	1	2			1		1								20															
Freshwater				2		2			2								1											1		1	4															
Marine	2	4	6	4	1	5	5		5	2	2	4	2	7	9	1		1	3	1	4	3	1	4	1	1	1	2	3	42																
Terrestrial				1		1			1		1																				1															
Grand Total	17	9	26	35	10	45	20	33	53	25	25	50	15	17	32	15	8	23	19	11	30	13	10	23	10	5	15	25	9	34	341															

Total funding awarded to proposals classified as over 50% polar south

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Grand Total
Fellowship	833,133			1,143,808		476,986	653,781	529,044				3,636,752
Marine	833,133			1,143,808		476,986		529,044				2,982,972
Terrestrial							653,781					653,781
Large	2,845,071						2,340,362	615,444				5,800,877
Marine	2,845,071						2,340,362	615,444				5,800,877
Research Programmes	620,987	77,536	99,111	5,460,687	1,295,861	6,355,439	5,241,823	1,563,221	4,334,384	2,024,780	363,815	27,437,643
Atmospheric				662,087			2,840,472					3,502,558
Earth	527,869	64,114		278,338	52,251	3,947,515	171,762		47,073	1,138,138		6,227,061
Freshwater				514,391								514,391
Marine	93,118		99,111	3,616,409	1,243,610	1,279,780	2,204,088	1,563,221	4,287,311	886,641	363,815	15,637,104
Terrestrial		13,421		389,463		1,128,143	25,501					1,556,528
Standard RM	3,077,584	1,005,351	1,824,799	298,337	1,866,732	1,368,997	2,113,167	1,371,045	1,067,918	1,573,511		15,567,440
Atmospheric			953,227		628,391			701,633	417,727			2,700,978
Earth	1,191,225	1,005,351	291,024		610,108	585,987	625,099					4,308,794
Freshwater					628,233							628,233
Marine	1,886,359		580,548	298,337		783,009	458,884		650,191	1,573,511		6,230,839
Terrestrial							1,029,184	669,412				1,698,596
Grand Total	7,376,775	1,082,887	1,923,910	6,902,833	3,162,593	8,201,421	10,349,132	4,078,755	5,402,302	3,598,290	363,815	52,442,712

Total funding awarded to proposals classified as less than 50% polar south

Row Labels	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Grand Total
Fellowship		509,161	153,697	206,807	655,288	567,509			1,920,352			4,012,813
Atmospheric		14,864		206,807		567,509			1,129,044			1,918,223
Marine		494,297	153,697		655,288				791,308			2,094,591
Large		2,651,887		5,094,736			1,093,291					8,839,914
Marine		2,651,887		5,094,736			1,093,291					8,839,914
Research Programmes	715,714	216,454	20,778,620	3,800,024	329,058	923,954	1,213,663	2,058,398	103,762	1,195,578		31,335,225
Atmospheric	599,136	125,347	13,560,867	2,381,555	101,894	403,415	419,809	2,058,398		79,400		19,729,821
Earth				561,363	50,382	196,146	616,835					1,424,726
Marine	116,578	91,106	7,217,753	857,107	176,782	324,392	177,018		103,762	1,116,179		10,180,678
Standard RM	1,294,021	318,754	411,139	1,319,818	3,379,077	1,896,218	211,249	501,119	850,216	1,888,345		12,069,956
Atmospheric				403,379	1,157,310	632,736	146,307		850,216	638,526		3,828,475
Earth			411,139		404,137	650,360						1,465,636
Freshwater						613,122				605,888		1,219,010
Marine	1,294,021	318,754		916,439	1,817,630		64,942	501,119		643,930		5,556,836
Grand Total	2,009,735	3,696,255	21,343,457	10,421,385	4,363,424	3,387,680	2,518,202	2,559,518	2,874,330	3,083,923		56,257,908

UKNCAR Reporting Template

Provide up to two pages of information following the structure below, only filling out those sections where there is new information to report. We are particularly interested in hearing of key activities (e.g. expeditions/cruises/projects) publications, policy outcomes, future initiatives that you would like publicised, or where UKNCAR could help a group/programme liaise with other parts of SCAR.

1. Name of SCAR Group or Programme	Expert Group on Operational Meteorology in the Antarctic (OpMet)
2. Principal UK Researchers	Steve Colwell
3. Major activities and progress since previous year involving UK personnel/infrastructure	Working on an implementation plan for the World Meteorological Organisation (WMO) Antarctic Regional Climate Centre. Contributed extra radio sonde ascents from Rothera as part of the World Meteorological Organisation Year of Polar Prediction for the Southern Hemisphere (YOPP-SH) Antarctic winter campaign.
4. Major future initiatives and actions involving UK personnel/infrastructure	Continue planning for the implementation of the Antarctic Regional Climate Centre.
5. Policy outcomes	
6. Selected publications	
7. Funding awards	
8. Points for discussion at UKNCAR meeting	

UKNCAR Reporting Template

Provide up to two pages of information following the structure below, only filling out those sections where there is new information to report. We are particularly interested in hearing of key activities (e.g. expeditions/cruises/projects) publications, policy outcomes, future initiatives that you would like publicised, or where UKNCAR could help a group/programme liaise with other parts of SCAR.

9. Name of SCAR Group or Programme	SCAR Antarctic Volcanism Expert Group (AntVolc)
10. Principal UK Researchers	<i>JL Smellie (Leicester), Teal Riley (BAS), Philip Leat (BAS)</i>
11. Major activities and progress since previous year involving UK personnel/infrastructure	2022 saw the final objective of AntVolc put in place, with the drafting of a 'White Paper' on the present state and future prospects for volcanic research in Antarctica. It is currently under review for publication in a mainstream journal [see below]
12. Major future initiatives and actions involving UK personnel/infrastructure	AntVolc was scheduled to disband at the end of its deliverables, hence discussions with the AntVolc community shall commence during 2023 to decide whether AntVolc shall terminate or continue in another form
13. Policy outcomes	n/a
14. Selected publications	Geyer, Di Roberto, Smellie & 8 authors (<i>submitted</i>) Volcanism in Antarctica: an assessment of the present state of research and future directions. Journal of Volcanology & Geothermal Research
15. Funding awards	<i>None</i>
16. Points for discussion at UKNCAR meeting	With the likely change in status of AntVolc, JS shall step down as AntVolc representative in UKNCAR after the 2023 meeting

17. Name of SCAR Group or Programme	AntArchitecture
18. Principal UK Researchers	Robert Bingham (University of Edinburgh; steering committee chair); Neil Ross (Newcastle University; steering committee); Tom Jordan (British Antarctic Survey); Carlos Martin (British Antarctic Survey); Kate Winter (Northumbria University); Martin Siegert (University of Exeter); Julien Bodart (PhD student, University of Edinburgh); Rebecca Sanderson (PhD student, Newcastle University)
19. Major activities and progress since previous year involving UK personnel/infrastructure	<ul style="list-style-type: none"> • <i>AntArchitecture</i> applied for and successfully achieved a 4-year extension request in July 2022 (at the SCAR Delegates Meeting) to continue as an Action group to 2026. Mainly this was to achieve goals originally intended for 2022 but set back 2-3 years by the pandemic. • The group is still working towards a white paper, intended for submission to a relevant interdisciplinary, peer-reviewed journal, e.g. <i>Global and Planetary Change</i>, <i>Climate of the Past</i>, <i>Frontiers of Earth Sciences</i>, outlining the need for an Antarctic radar-layers database, the potential applications, and methods for achieving it. However, progress has been limited over the past year by (a) members of the Steering Committee continuing to work on other pandemic-delayed work, e.g. major Antarctic field seasons, and (b) an inability to convene a long-delayed writing workshop due to multiple calendar conflicts. • This year's major UK contributions have come in the form of major advances in tracing and modelling internal layers across both West and East Antarctica from PhD students Julien Bodart (Edinburgh) and Rebecca Sanderson (Newcastle), listed under publications below.
20. Major future initiatives and actions involving UK personnel/infrastructure	<ul style="list-style-type: none"> • We plan to hold a "reboot" meeting of the group in 2023/24 to complete writing the white paper, refresh the membership especially to include new ECRs, and evolve the Steering Committee to incorporate a more diverse group in terms of career range and countries represented. • The group is still working towards the publication of an online dataset and paper reporting the 3D internal architecture of the Antarctic Ice Sheet.
21. Policy outcomes	The group is not advanced enough to influence policy outcomes at this stage.
22. Selected publications	<p>Bodart, J.A.; R.G. Bingham, D.A. Young, J.A. MacGregor, D.W. Ashmore, E. Quartini, A.S. Hein, D.G. Vaughan and D.D. Blankenship (2023) High mid-Holocene accumulation rates over West Antarctica inferred from a pervasive ice-penetrating radar reflector. <i>The Cryosphere</i>, 17 (4), 1497-1512. https://doi.org/10.5194/tc-17-1497-2023</p> <p>Sanderson, R.J.; K. Winter, S. L. Callard, F. Napoleoni, N. Ross, T.A. Jordan and R.G. Bingham (2023) Englacial architecture of Lambert Glacier, East Antarctica. <i>The Cryosphere Discussions</i>, https://doi.org/10.5194/tc-2023-13</p>

23. Funding awards	<p>None in the UK over the reporting period, but R. Bingham has supported two successful overseas grants as Project Partner:</p> <ul style="list-style-type: none"> • Steven Franke (University of Tübingen) – DfG (Germany) “Standard/New Investigator” Grant: DANGER-DML: Deciphering the evolution of an East ANtarctic drainage system over the last Glacial cycle in westERn Dronning Maud Land • Johannes Sutter (University of Bern) – SNF (Switzerland) “Large/Starter” Grant: CHARIBDIS: Charting Antarctic Ice Sheet evolution via the ice sheet’s internal stratigraphy – a model data integration study.
24. Points for discussion at UKNCAR meeting	We have nothing to raise for discussion this year especially, but welcome any input on how UKNCAR can support our activities.

UKNCAR Reporting Template

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25. Name of SCAR Group or Programme	ADMAP/RINGS/AntArchitecture
26. Principal UK Researchers	Tom Jordan
27. Major activities and progress since previous year involving UK personnel/infrastructure	Workshop to identify the science challenges and opportunities in the Ronne Ice Shelf region, co-hosted with BAS and AWI.
28. Major future initiatives and actions involving UK personnel/infrastructure	<p>Innovate UK: Protecting Environments with UAV Swarms. Demonstrator project taking geophysically equipped large UAV (100 kg payload) to Rothera in 2023/24. Including magnetics, gravity and radar.</p> <p>Study of Ronne Ice Shelf system: Ocean/ Cryosphere/ Lithosphere linkages. In collaboration with AWI, provisional dates for field campaign 2027/28 if funding can be secured.</p>
29. Policy outcomes	
30. Selected publications	Tom A. Jordan, S. Thompson, B. Kulesa and F. Ferraccioli, Geological sketch map and implications for ice flow of Thwaites Glacier, West Antarctica, from integrated aerogeophysical observations. <i>Sci. Adv.</i> 9 , eadf2639(2023). DOI: 10.1126/sciadv.adf2639
31. Funding awards	
32. Points for discussion at UKNCAR meeting	

UKNCAR Reporting Template

Provide up to two pages of information following the structure below, only filling out those sections where there is new information to report. We are particularly interested in hearing of key activities (e.g. expeditions/cruises/projects) publications, policy outcomes, future initiatives that you would like publicised, or where UKNCAR could help a group/programme liaise with other parts of SCAR.

33. Name of SCAR Group or Programme	Bedmap3
34. Principal UK Researchers	Peter Fretwell, Hamish Pritchard, Alice Fremand
35. Major activities and progress since previous year involving UK personnel/infrastructure	<p>Bedmap3 is an international collaboration led by the UK science team. The data paper now in press in ESSD led by UK/BAS science team. This collates, standardizes and makes freely available 60 years of geophysical data over Antarctica from all the international community. All the data included in this paper are freely available from the UK Polar Data Centre (https://data.bas.ac.uk, last access: 1 March 2023) and the SCAR Bedmap Data Portal (https://bedmap.scar.org, last access: 1 March 2023).</p> <p>Analysis for the gridded products (second paper) is in the final stages and a second paper is being written that should be submitted in the autumn. This will include a new gridded bed topography model critical for ice sheet modelling and new figures on ice volume and potential contribution of Antarctic Ice to sea level rise.</p> <p>Work has begun on subsidiary products such as a new paper map and complementary datasets which BAS has acquired funding to compile these data at BAS.</p>
36. Major future initiatives and actions involving UK personnel/infrastructure	
37. Policy outcomes	All bedmap3 partners including BAS leads hope to work on a white paper on the future direction of Antarctic geophysical survey after the completion of the first two papers
38. Selected publications	Antarctic Bedmap data: Findable, Accessible, Interoperable, and Reusable (FAIR) sharing of 60 years of ice bed, surface, and thickness data (2023 in press) Fremand, Fretwell and Bodart et al.....
39. Funding awards	
40. Points for discussion at UKNCAR meeting	

UKNCAR Reporting Template

Provide up to two pages of information following the structure below, only filling out those sections where there is new information to report. We are particularly interested in hearing of key activities (e.g. expeditions/cruises/projects) publications, policy outcomes, future initiatives that you would like publicised, or where UKNCAR could help a group/programme liaise with other parts of SCAR.

1. Name of SCAR Group or Programme	Southern Ocean Observing System (SOOS) Joint initiative of SCAR and SCOR
2. Principal UK Researchers	Sian Henley, Andrew Meijers, Dani Jones, Pierre Dutrieux, Peter Fretwell, Petra ten Hoopen
3. Major activities and progress since previous year involving UK personnel/infrastructure	<p>Two major documents finalised, approved and published; the SOOS Science and Implementation Plan (2021-2025) and the SOOS 5-Year Report (2016-2020). Publication of the SOOS Data Policy, which was a significant contribution from the SOOS Data Management Sub-Committee (DMSC).</p> <p>Release of three major SOOS products that will be of significant value to the wider Southern Ocean community in supporting science, data discovery, fieldwork logistics, operations and the provision of policy-ready information. PolarDEX and the new interface for DueSouth, which was originally developed by SOOS to help researchers find opportunities for collaborative fieldwork, were launched in April 2022, after development in partnership with the European Polar Board. SOOSmap Version 2 had its soft launch in August 2022, in preparation for its official launch in early 2023. This second version of SOOS' data discovery tool has undergone significant improvement, development and enhancement since its initial version released in 2017. The POLDER Polar Federated Search Tool, for which SOOS is a lead partner alongside SCAR's Standing Committee on Antarctic Data Management (SCADM) and the Arctic Data Committee, was released in March 2022.</p> <p>SOOS contributions to other major Southern Ocean initiatives, e.g. Marine Ecosystem Assessment for the Southern Ocean (MEASO).</p>
4. Major future initiatives and actions involving UK personnel/infrastructure	<p>SOOS Symposium in Hobart, Tasmania, in August 2023. Includes several sessions aiming to brainstorm, coordinate and advance plans for major research programs and international field campaigns over the coming years.</p> <p>4th International Ross Sea Conference, July 2023, Naples, Italy – supported by SOOS and its Ross Sea Regional Working Group.</p>

	<p>Southern Ocean Regional Decade Collaborative Centre for the UN Decade of Ocean Science for Sustainable Development. Approved by IOC-UNESCO, June 2023; plans currently under development and spinning up period underway. SCAR as lead; SOOS as key partner.</p> <p>5th International Polar Year Planning Committee – SOOS represented by Sian Henley.</p>
5. Policy outcomes	<p>SOOS increased its involvement and influence in global and Antarctic-focused policy making throughout 2022 through several activities in several fora, as follow.</p> <p>SOOS-led side event at the 27th Conference of the Parties (COP27) of the UN Framework Convention on Climate Change (UNFCCC) in Egypt in November 2022: “Southern Ocean ecosystems: need for augmented understanding, research efforts and protection”. Collaborative event with ICED, BEPSII and SCAR Ant-ICON programs.</p> <p>Further contributions to events at COP27, the UN Ocean Conference in Portugal in June 2022, and the 41st meeting of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) in Australia in October 2022. Contributions to SCAR’s papers submitted to ATCM 45 in Helsinki, June 2023.</p>
6. Selected publications	<p>LaRue et al., 2022 showed the latest results from the SOOS Capability Working Group on Censusing Animal Populations from Space (CAPS).</p> <p>Beadling et al., 2022 provided the 2021 update for the State of the Climate Report from the Bulletin of the American Meteorological Society (BAMS).</p> <p>Southern Ocean Action Plan for the UN Decade of Ocean Science for Sustainable Development published, in which SOOS is a key partner alongside many other Southern Ocean-focused stakeholder organisations.</p>
7. Funding awards	<p>Continued core sponsorship and hosting of the International Project Office through 2023 by the University of Tasmania’s Institute for Marine and Antarctic Studies, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Tasmanian State Government Department of State Growth.</p> <p>New sponsorship received from the EU-funded OCEAN:ICE project (Meijers et al.).</p>
8. Points for discussion at UKNCAR meeting	<p>UKNCAR vision and plans for IPY 2032-33.</p> <p>UKNCAR leverage for funding and facilitation opportunities for SCAR groups.</p> <p>Co-ordination of EDI initiatives across UKNCAR and exchanges with wider SCAR community.</p>