

SCAR WG-GGI NATIONAL REPORT

Report of Current Activities of UK for 2000-2002

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The following UK organisations/institutes have developed working programmes to conduct research or operational work in the Antarctic in the field of Geodesy, Photogrammetry, Remote Sensing, Bathymetry, Geographic Information, and Cartography:

British Antarctic Survey
UK Hydrographic Office

1. FIELD ACTIVITIES

1.1 *Geodetic Surveys* (British Antarctic Survey(BAS)/UK Hydrographic Office (UKHO))

a) GPS observations were carried out by BAS in 2000-01 to support local mapping projects in the Marguerite Bay area of the Antarctic Peninsula, and in eastern Palmer Land/eastern Ellsworth Land. Nineteen stations were occupied, all to sub-metre accuracy. During 2001-02, BAS collected GPS data at 22 stations on Signy Island, South Orkney Islands, all to an accuracy of less than 5 cm.

b) VLBI observations. No activity.

1.2 *Remote Sensing*

a) BAS acquired aerial photography in 2000-01 in the Marguerite Bay area for routine monitoring of ice status, and local mapping and charting projects, over eastern Palmer Land/Ellsworth Land for geological mapping projects, and over Brabant Island, Goudier Island and Green Island in support of BAS science programmes and mapping Antarctic Specially Protected Areas. UKHO acquired aerial photography of parts of the South Orkney Islands in 2000-01.

2. MAPPING ACTIVITIES

2.1 *Topographic Mapping* (British Antarctic Survey (BAS))

a) New maps of the Antarctic Peninsula region published are:

Adelaide Island and Arrowsmith Peninsula, 1:250 000 scale satellite image map, published jointly with Bundesamt für Kartographie und Geodäsie, Germany, 2001.

British Antarctic Territory Minimap, 1:11 500 000 scale map published for the UK Foreign and Commonwealth Office, 2001.

b) New maps in press (2002) are:

Antarctica, BAS Minimap 2, 2nd edition, 1:25 000 000

Antarctic Peninsula, BAS Minimap 3, 1:10 000 000.

c) New digital maps of *Fossil Bluff* (BAS SCISTAMAP, Sheet 2, 1:12 500), *McCallum Pass*, *Adelaide Island* (BAS 10P, Sheet 2, 1:10 000), and *Rothera research station* (1:1100 scale orthophoto map) were completed by BAS during 2001. A six-sheet series of 1:50 000 scale satellite image maps of parts of eastern Palmer Land/Ellsworth Land, based in part on the IfAG satellite image mosaic of the Antarctic Peninsula, and eight 1:250 000 satellite image and eight 1:50 000 hybrid maps (combined satellite and aerial photography imagery) of Dronning Maud Land, were prepared in support of BAS geological mapping projects.

d) Small digital maps have been compiled for inclusion in the Management Plans of ASPA Nos 108 (Green Island) and 148 (Mount Flora).

2.2 *Thematic Mapping* (ADMAP Group/British Antarctic Survey (BAS))

a) *ADMAP - magnetic anomaly map of the Antarctic* (BAS (Misc) 10), at 1:10 000 000 scale, synthesises the work of the international ADMAP Group and includes near-surface magnetic recordings collected since the International Geophysical Year in 1957/58.

2.3 Hydrographic Charting (UK Hydrographic Office)

a) Two new charts (No. 446, *Anvers Island to Renaud Island* and No. 4907, *Approaches to the Antarctic Peninsula*) were published in 2000/01.

b) Three new editions of charts were issued in 2001/2002 (Nos. 4074, 4212 and 4213).

3. GEOGRAPHIC INFORMATION ACTIVITIES

3.1 Digital Datasets (British Antarctic Survey)

a) Antarctic Digital Database. ADD Version 3.0 was launched on the ADD website in July 2000. Significant revisions to parts of East Antarctica and the Antarctic Peninsula region will be released in Version 4.0 in July/August 2002. A revised manual, as a paper document, was published in 2001 to accompany ADD Version 3.0.

b) High resolution datasets are available on request for the new topographic maps itemized in 2.1.

3.2 New GIS Established (British Antarctic Survey/US Geological Survey)

a) BAS staff have compiled a database recording coastal change with time over the Antarctic Peninsula region. The work has been carried out in collaboration with the US Geological Survey, using a range of data sources including historical and modern aerial photography and satellite imagery. The framework for most of the interpretative work has been the IfAG (now BKG) digital mosaic of Landsat imagery. The database will be used to compile three 1:1 000 000 scale maps of the region.

4. SCIENTIFIC PAPERS PUBLISHED/PRESENTED

a) CERVELLATI, R., RAMORINO, C., SIEVERS, J., THOMSON, J.W. and CLARKE, D. 2000. A composite gazetteer of Antarctica. *Polar Record*, **36** (198), 278-285.

b) FOX, A.J. and GOOCH, M.J. 2001. Automated DEM generation for Antarctic terrain. *Photogrammetric Record*, **17**, 275-290.

5. PLACE NAMES

5.1 Six new place names have been approved by the UK Antarctic Place-names Committee in the past two years and these, together with a few amended names, have been submitted to the SCAR Composite Gazetteer of Antarctica (CGA). UK has supplied descriptions for named geographic features beginning with the letter A for the CGA, and all new names are accompanied by a description of the feature.

6. GROUND CONTROL POINT LIBRARY

6.1 The status of Ground Control Point Libraries - No activity.

7. PLANNED ACTIVITIES FOR THE NEXT TWO YEARS

7.1 Geodetic Surveys (British Antarctic Survey/UK Hydrographic Office)

a) GPS observation campaigns will be carried out in the Antarctic Peninsula and Scotia Sea region as required for mapping and charting projects.

b) No VLBI measurements will be conducted.

7.2 Remote Sensing (British Antarctic Survey/UK Hydrographic Office)

a) Aerial photography will be acquired over localities in the Antarctic Peninsula as required for mapping and charting projects.

7.3 Topographic Mapping (British Antarctic Survey)

a) Two new BAS Minimaps, of Antarctica and of the Antarctic Peninsula region, will be published in A4 format in 2002.

b) A new 1:10 000 scale map of Signy Island, South Orkney Islands will be compiled, using 2001 aerial photography and GPS data acquired during 2002.

c) A 1:1 500 000 scale tourist map of northern Antarctic Peninsula region.