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## GEOLOGICAL AND GEOMORPHOLOGICAL MAPS OF ELEPHANT ISLAND, SOUTH SHETLAND ISLANDS

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Geological and geomorphological maps of Elephant Island have been prepared using as a base the topographic map published in 2005 by the Centro Geografico del Ejercito (Spain) and us. As can be seen on the maps, about 90 % of the island is covered by ice. The remaining 10 % is outcrop, moraines and beaches.

The geological map resumes data collected during a number of Brazilian Antarctic Operations in the period 1984-2004, the last two of which together with participants from Spain. Some published data from Ian Dalziel and Anne Grunow were also incorporated. The island offers serious problems for the elaboration of a geological map. Different lithotypes are thinly interleaved and isoclinal folding and tectonic disruption hamper the mapping of continuous units. Another difficulty refers to the gradual increase of metamorphic grade from NE to SW, from the pumpelleyite-actinolite subfacies, to the blueschist facies, then to the greenschist facies and finally to the epidote-amphibolite facies, as indicated on the inset metamorphic map. Rocks of similar chemical composition are grey phyllites in the NE and grey schists, with albite porphyroblasts, in the SW, and green phyllites become greenschists and finally amphibolites in the SW. It is nevertheless considered worthwile to show the schematic distribution of the different lithotypes in order to illustrate an example of a Cretaceous accretionary wedge with its lithologic, structural and metamorphic variations.

On the geomorphological map the location of the main landforms and surface deposits of glacial, periglacial, marine, fluvial and structural origin is shown. These features are represented by different symbols and colours according to their origin. However, the representation of minor details had to be omitted because of the relatively small size of the ice-free areas and the concentration of these areas along the coastline. The map shows the location of significant raised marine erosive platforms at different altitudes above sea level. Glacial landforms and deposits along the west coast evidence recent glacial retreat and two main sets of moraines can be distinguished.