

Heard Island uncovered: 2000-01 summer ANARE

A MAJOR EXPEDITION TO HEARD ISLAND LAST summer involved 55 research and support personnel working from the main camp at Atlas Cove, a secondary camp at Spit Bay and a small camp at Brown Glacier. Some coastal travel between the northern and eastern parts of the island was possible by inflatable rubber boats. The research teams supported 22 wide-ranging projects in the fields of archaeology, geology, geodesy, botany, genetics, zoology, and human impacts. (Details of projects can be found at <http://www.aad.gov.au/science/heard0001>) The abandoned ANARE Atlas Cove site was also substantially cleaned up and rehabilitated.

Archaeological studies looked at the lifestyles of mid-19th-century sealers in an inhospitable environment. Excavations revealed a mixture of temporary camps (one incorporating a whaleboat) and purpose-built constructions. The discovery of a locally-made musical instrument emphasised that sealers often stayed far longer on the island than they were expecting to.

Heard Island is just south of the Antarctic Polar Front, a major oceanic and climatic boundary, which makes it an important locality for studying the impact of climate change. A team of glaciologists found that since 1947 Brown Glacier on the east coast has retreated 1.1 km, decreasing in area by 33 percent, and has lost 38 percent of its total volume. Focussing on investigating responses to environmental change and seeking information for conservation protocols, a multidisciplinary international team gathered data on the island's terrestrial and coastal ecosystem biodiversity and species distribution and function.

A survey of Heard Island's fur seal population counted 1,012 pup births, a 3-fold increase since 1987-88, an increase of 20.2 percent a year since 1962. The breeding population was estimated to be about 4,000 seals and the total population around the end of February was about 28,000 seals.

Early in the season, helicopters were available for some successful aerial photography to assist detailed mapping of the coastline as well as providing information for seabird and seal surveys.

Samples of the earth's lower crust and upper mantle brought to the surface by erupting lavas, called mantle xenoliths, were collected to help interpret the submarine



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Kerguelen Plateau upon which Heard Islands sits. Evidence for the geomorphological evolution of Heard Island, especially glacial events and their relationships to volcanic events, was gathered. Volcanic activity from Mawson Peak was often observed, including a spectacular eruption in February, and a second active vent was discovered below the summit in November 2000.

A symposium in Tasmania early in 2002 will look in detail at outcomes of the expedition.

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