

# Heard Island a focus of 2003-04 science grants

Heard Island in the southern Indian Ocean is to be a major focus of research supported in 2003-04 with Australian Antarctic Science (AAS) Grants. The subantarctic island study includes eight of the 57 projects allocated funding from the \$700,000 available from the Federal Government under the scheme.

Announcing the grants, the Parliamentary Secretary for the Antarctic, Dr Sharman Stone, said that research approved for Heard Island would enable the study of land-based predators such as seals, penguins and albatrosses and their prey, important for determining levels of sustainable fishing around the island.

The Heard Island projects are timed to coincide with continuing studies into where predators are feeding, in which scientists are using the Antarctic research vessel *Aurora Australis* to track seabirds and their prey, mainly krill, to provide better information for managing future sustainable fisheries. The studies are part of a larger, wide-ranging examination of the ecosystem of Heard Island which, along

with the nearby McDonald Islands, is part of the world's largest marine reserve.

Other Antarctic projects approved for 2003-04 include:

- investigation of climate variability and sea level changes using several sources such as ice cores, 19th century Antarctic plants and data collected from the Amery Ice Shelf;
- comparisons between Antarctic and Arctic middle and upper atmosphere conditions to improve our understanding of how the hemispheres compare;
- determining the level of lead and other contaminants in the Australian Antarctic Territory; and
- ozone depletion and its effect on the Antarctic food web and, through this, on climate.

The 57 projects to receive funding under the AAS grants scheme are among 130 to be undertaken in Australia's Antarctic Territory and subantarctic islands in 2003-04.



JENNY SCOTT

*Spit Bay field camp, Heard Island – home to four biologists and support staff for the coming season*

Institution: Total funding (with GST)	Chief Investigator	Project Title	Grant (with GST)
Australian National University [ACT]: \$63,623	READING, DR ANYA	The deep structure of East Antarctica from broad-band seismic data	\$3,300
	SCHORTEMAYER, DR MARCUS	Heard Island 2003-04: Terrestrial biology carbon acquisition and nitrogen economy of Heard Island plants as affected by climate change	\$12,197
	SKOTNICKI, DR MARY	Conservation of plant biodiversity in Antarctica - a genetic approach	\$19,796
	SKOTNICKI, DR MARY	Investigation of virus biodiversity in Antarctic terrestrial plants	\$10,822
	TREGONING, DR PAUL	Crustal rebound in the Lambert Glacier area	\$17,508
Curtin University [WA]: \$29,453	ROSMAN, PROFESSOR KEVIN	Climatic and sea-level changes during the glacial/Holocene transition inferred from isotope ratios of trace metals in Law Dome ice cores	\$15,989
	ROSMAN, PROFESSOR KEVIN	Heavy metal concentrations and isotope ratios in Law Dome snow as indicators of recent climatic and environmental variability	\$13,464
Flinders University [SA]: \$23,406	MITCHELL, DR JIM	Impact of viscosity on the morphology and swimming behaviour of motile bacterioplankton, phytoplankton and protozooplankton	\$6,774
	TOMCZAK, PROFESSOR MATT	Evolution of water mass properties in the Circumpolar Current during 1991-1996	\$16,632
La Trobe University [VIC]: \$118,616	DYSON, PROFESSOR PETER	Upper atmosphere dynamics and thermodynamics	\$14,108
	DYSON, PROFESSOR PETER	Investigations of space weather and the mesosphere using the TIGER Radar	\$17,212
	ESSEX, DR ELIZABETH	Mapping the GPS total electron content and scintillation activity at southern higher latitudes during high sunspot numbers	\$10,296
	GOLDSWORTHY, DR SIMON	The conservation of fur seals in the Antarctic marine ecosystem	\$33,000
Macquarie University [NSW]: \$20,349	SUNNUCKS, DR PAUL	Molecular studies of the origins and dispersal patterns of invertebrates in the Antarctic and subantarctic	\$22,000
	SUNNUCKS, DR PAUL	Introduced invasive terrestrial invertebrates on Macquarie Island: studies on ecology origins and control	\$22,000
	GORE, DR DAMIAN	Palaeoenvironments of the Antarctic coast, from 50°E to 120°E	\$13,419
Museum of Victoria: \$6,811	GORE, DR DAMIAN	Subsurface investigations of Marine Plain	\$5,500
	SELKIRK, DR PATRICIA	Measurement of moss growth rates in Antarctica	\$1,430
	WATSON, DR JAN	Hydroids of the BANZARE Antarctic expeditions 1916-1931	\$6,811

Southern Cross University [NSW]: \$24,195	JONES, PROFESSOR GRAHAM	Factors affecting DMS in the seasonal ice zone	\$24,195
Tasmanian Parks & Wildlife Service [TAS]: \$18,627	GALES, DR ROSEMARY	Status and conservation of albatrosses on Macquarie Island	\$18,627
University of Adelaide [SA]: \$31,046	VINCENT, DR BOB	Dynamical coupling in the Antarctic middle atmosphere	\$31,046
University of Melbourne [VIC]: \$71,921	SIMMONDS, ASSOC PROF IAN	The nature of the Antarctic Circumpolar Wave and its connections with Australian rainfall variability	\$30,935
	SIMMONDS, ASSOC PROF IAN	The influence of the El Niño-Southern Oscillation on Antarctic and subantarctic climate	\$21,369
	STEVENS, PROFESSOR GEOFF	Development and application of technologies for the removal of heavy-metal contaminants from run-off associated with abandoned waste disposal sites	\$19,617
University of Newcastle [NSW]: \$61,952	FRASER, PROFESSOR BRIAN	Observations of ULF space plasma waves in Antarctica	\$24,098
	FRASER, PROFESSOR BRIAN	A Southern Hemisphere imaging riometer experiment (SHIRE)	\$14,341
	GOODWIN, DR IAN	East Antarctic and Circum-Antarctic climate history from ITASE ice coring in Eastern Wilkes Land	\$23,513
University of New England [NSW]: \$12,854	SMITH, DR STEVE	Monitoring for human impacts and introduced species in marine communities at Australia's subantarctic islands	\$12,854
University of New South Wales [NSW]: \$9,312	BURTON, DR MICHAEL	The automated astrophysical site testing observatory	\$9,312
University of Queensland [QLD]: \$37,988	McGOWAN, DR HAMISH	Frozen dunes: An indicator of climate variability, McMurdo Dry Valleys, Antarctic	\$24,633
	SCHMIDT, DR SUSANNE	Identifying global change : stable isotope composition and cuticle characteristics of Antarctic plants	\$13,355
University of Sydney [NSW]: \$20,317	CLARKE, DR GEOFF	The strength of the lower continental crust; evidence from Stillwell Hills-Oygarden Group	\$5,665
	PILE, DR ADELE	Cascading effects of global climate change on near shore benthic communities in the Antarctic	\$14,652
University of Tasmania [TAS]: \$182,474	BARMUTA, MR LEON	Antarctic freshwater lake fauna: Palaeobiogeography, palaeoecology and applications to climate change studies	\$2,833
	BOWMAN, DR JOHN	Bacterial hydrocarbon degradation and impacts of hydrocarbon pollutants on microbial communities within Antarctic coastal sediments	\$14,375
	BOWMAN, DR JOHN	Exopolysaccharides from Antarctic bacteria	\$9,062
	COLEMAN, PROF RICHARD	Ridging and calving on the Amery Ice Shelf	\$19,663
	DAVIDSON, DR GARRY	Geophysical imaging, structural analysis, and alteration geochemistry of the Macquarie Island crust, to constrain the tectonic, and hydrothermal history of the ocean floor	\$3,541
	HINDELL, DR MARK	The effect of spatial and temporal variation in marine productivity on energy acquisition in southern elephant seals, <i>Mirounga leonina</i>	\$21,443
	HOWARD, DR WILL	Oceanographic and climatic evolution of Kerguelen Plateau region: Collaborative research aboard the Japanese research vessel <i>Mirai</i>	\$13,197
	KIERNAN, DR KEVIN	Geomorphological evolution of Heard Island	\$3,541
	KIRKPATRICK, PROF JAMIE	Heard Island 2003-04: Documenting vegetation change on Heard Island	\$10,998
	McMINN, ASSOC PROF ANDREW	Sea ice primary production off eastern Antarctica	\$23,100
	McMINN, ASSOC PROF ANDREW	Role of micronutrients in the sea ice microbial ecosystem	\$7,918
	McMINN, ASSOC PROF ANDREW	Limnological and nearshore diatom communities of Heard Island: proxies of subantarctic climate change?	\$2,772
	MICHAEL, DR KELVIN	Ocean colour measurements in the East Antarctic sea ice zone	\$1,320
	NUNEZ, DR MANUEL	UV climate over the Southern Ocean south of Australia, and its biological impact	\$15,331
	REID, DR JAMES	Electrical conductivity of sea ice: a comparison of in situ and laboratory measurements	\$2,124
SEEN DR ANDREW	Development and application of DGT devices for passive sampling of contaminated waters in the Antarctic environment	\$6,373	
SWADLING, DR KERRIE	The fate of primary production in Antarctic sea ice: the role of metazoan grazers	\$12,053	
TAYLOR, DR FIONA	Response of Antarctic marine diatoms to environment modification	\$4,910	
WOEHLER, DR ERIC	Monitoring for long-term or cumulative impacts in Southern Ocean seabirds	\$4,510	
WOEHLER, DR ERIC	Variability in the distribution and abundance of seabirds in the Southern Indian Ocean	\$3,410	
University of Western Australia [WA]: \$6,336	SHELLAM, PROFESSOR GEOFF	South polar skuas as vectors of disease	\$6,336
University of Wollongong [NSW]: \$38,372	ROBINSON, DR SHARON	Assessing UV-B induced DNA damage in Antarctic plants: is desiccation a compounding factor?	\$12,038
	ROBINSON, DR SHARON	Can remote sensing be used to map vegetation and monitor community change in Antarctica?	\$26,334