

## World Heritage Sites

Protected  
Areas and  
World  
Heritage



## NEW ZEALAND SUB-ANTARCTIC ISLANDS NEW ZEALAND

*The New Zealand Sub-Antarctic Islands consist of five remote and windswept island groups in the Southern Ocean south and south-east of New Zealand. The islands, lying between the Antarctic and Subtropical Convergences, are oases of high productivity, biodiversity, dense populations and endemism for birds, ocean life, plants and invertebrates. Of the 126 species of birds, 40 are seabirds of which 5 breed nowhere else in the world. They have among the most southerly forests in the world, an unusual flora of megaherbs and some small islands never colonised by man.*

### COUNTRY

New Zealand

### NAME

New Zealand Sub-Antarctic Islands

### NATURAL WORLD HERITAGE SERIAL SITE

1998: Inscribed on the World Heritage List under Natural Criteria ix and x.

### STATEMENT OF OUTSTANDING UNIVERSAL VALUE [pending]

The UNESCO World Heritage Committee issued the following statement at the time of inscription:

#### Justification for Inscription

**Criterion (ix):** The New Zealand Sub-Antarctic Islands display a pattern of immigration of species, diversifications and emergent endemism, offering particularly good opportunities for research into the dynamics of island ecology.

**Criterion (x):** The New Zealand Sub-Antarctic Islands are remarkable for their high level of biodiversity, population densities, and for endemism in birds, plants and invertebrates. The bird and plant life, especially the endemic albatrosses, cormorants, landbirds and "megaherbs" are unique to the islands.

### IUCN MANAGEMENT CATEGORY

Auckland Islands National Nature Reserve	Ia Strict Nature Reserve
Campbell Islands National Nature Reserve	Ia Strict Nature Reserve
Antipodes Islands National Nature Reserve	Ia Strict Nature Reserve
Snares Islands National Nature Reserve	Ia Strict Nature Reserve
Bounty Islands National Nature Reserve	Ia Strict Nature Reserve
Auckland Islands Marine Mammal Sanctuary	Unassigned
Auckland Islands / Motu Maha Marine Reserve	Unassigned

### BIOGEOGRAPHICAL PROVINCE

Insulantarctica (7.4.9)

### GEOGRAPHICAL LOCATION

The site comprises five island groups in the Southern Ocean 220 to 650 km south and southeast of South Island. From the mainland the Campbell Islands and Antipodes Islands lie 650 km south and southeast respectively at 52°33'S x 169°10'E and 49°41'S x 178°48'E; the Bounty Islands lie 630 km southeast at 47°45'S x 179°03'E; the Auckland Islands lie 480 km south at 50°44'S x 166°08'E and the Snares Islands 220 km south at 48°02'S x 166°35'E.

## **DATES AND HISTORY OF ESTABLISHMENT**

- 1910: Adams Island in the Auckland Islands declared a Reserve for the Preservation of Fauna & Flora;
- 1934: The same designation applied to the whole Auckland Islands group;
- 1954: The designation applied to the Campbell Islands, and to the other three island groups in 1961;
- 1978: The five groups reclassified as Nature Reserves under the Reserves Act 1977; all five were subsequently accorded National Nature Reserve Status;
- 1993: The Auckland Islands Marine Mammal Sanctuary proclaimed under the 1978 Marine Mammals Protection Act;
- 2004: The Auckland Islands / Motu Maha Marine Reserve (484,000 ha) proclaimed to the 12 nautical mile offshore limit.

## **LAND TENURE**

State owned. Managed by the Southern Islands Area of the Southland Conservancy of the Department of Conservation (DOC). Land claims from two Maori groups have been laid before the Waitangi Tribunal. The World Heritage status does not affect these claims.

## **AREA**

Total land area:	76,458 ha	
Auckland Islands:	62,554 ha	Marine area extends out 12 nautical miles
Campbell Islands:	11,331 ha	
Snares Islands:	341 ha	
Bounty Islands:	135 ha	
Antipodes Islands:	2,097 ha	

## **ALTITUDE**

Sea level to 705m (Mt. Dick, Auckland Islands)	
Campbell Islands:	569m
Antipodes Islands:	366m
Snares Islands:	152m
Bounty Islands:	88m

## **PHYSICAL FEATURES**

Among sub-Antarctic archipelagos, the islands are in the mid-latitudinal range and are the most diverse and extensive of them. They lie on the shallow continental shelf south and southeast of New Zealand, some almost 1,000 km apart. Each group has a mainland surrounded by several islets and stacks but differs markedly in size, geology, landform and climate. Together they form the most important site for seabirds in Insulantarctica. The Snares and Bounty Island groups are formed of basement granite and metamorphic rocks; the three more southerly groups are of basic volcanic rocks dating from 25 million to less than one million years ago and may have formed in passing over a hot spot. Campbell and Auckland Islands have been extensively glaciated and have a number of deep inlets and harbours. Soils are mostly blanket peat up to 8m thick except on the Bounty Islands which are exposed, low-lying and soil-less rocks with no safe anchorage. The craggy coastlines and stormy weather can be spectacular.

## **CLIMATE**

The islands lie at the southern edge of the Roaring Forties between the Antarctic and Sub-tropical Convergences. The seas surrounding them are strongly influenced by constant prevailing westerly gales and relatively warm ocean currents. They have a cool-temperate climate with a fairly low seasonal range: the mean annual temperature ranges from 11°C in the Snares to 6°C on Campbell Island. The annual rainfall is 1200-1500mm on most of the islands and there is frequent cloud cover. Upwelling currents occur to the west of Auckland and Campbell Islands.

## **VEGETATION**

Except for the Bounty Islands which have no higher plants, the islands have the richest flora of all of the sub-Antarctic islands and, with neighbouring Macquarie Island, are a Centre of Plant Diversity. The terrestrial flora has approximately 250 taxa, of which 35 are endemic to the region. The Auckland Islands alone have 233 vascular plants of which 196 are indigenous, six endemic and thirty classified

rare. They have the southernmost tree ferns *Cyathea* spp. and forests of the region, dominated by southern rata *Metrosideros umbellata* and a flowering myrtle. The Snares, Antipodes and two of the Auckland Islands, Adams and Disappointment, are also remarkable because their vegetation is essentially unmodified by humans or alien animals. The Snares have extensive forests dominated by the tree daisies *Olearia lyalli* and *Brachyglottis stewartiae* up to 5m high, with Cook's scurvy grass *Lepidium oleraceum*. There are no comparable forests on the Campbell and Antipodes Islands, where only woody shrubs and tussock grasses grow. Unusually large herbs (megaherbs) are a peculiar feature of the islands forming natural flower gardens well adapted to the extreme weather. They include the endemic MacQuarie Island cabbage *Stilbocarpa polaris* and *S. robusta*, the Ross lily *Bulbinella rossii*, Campbell Island carrot *Anisotome latifolia* and *A. acutifolia*, and three species of giant daisy, *Pleurophyllum hookeri*, *P. speciosum* and *P. criniferum*. The size and density of the seaweed beds are vast, if not as species-rich as on the mainland, but a new species of bull kelp *Durvillaea* has been identified from the Antipodes Islands and many others may remain to be recorded.

## FAUNA

The islands lack both native herbivores and terrestrial carnivores. They are therefore vulnerable to invasions, usually accidental, of alien substitutes. The highly productive marine ecosystem however, supports a huge abundance and diversity of seabirds and marine mammals. Ten of the world's 24 species of albatross breed in the islands. The 120 recorded species of birds include 40 seabirds, of which five breed nowhere else: southern royal albatross *Diomedea epomophora* (VU), Gibson's wandering albatross *D. exulans gibsoni* (VU), Antipodean albatross *D. exulans antipodensis* (VU), Campbell albatross *Thalassarche impavida* (VU) and white-capped albatross *Thalassarche steadi*. There are four breeding species of penguins, of which two, the Snares Islands penguin *Eudyptes robustus* (VU) and big-crested penguin *E. sclateri* (EN) are endemic and of the world population of yellow-eyed penguin *Megadyptes antipodes* (EN) 30% breeds on the Auckland Islands. Campbell, Auckland and Bounty Islands all have endemic species: *Phalacrocorax campbelli* (VU), *P. colensoi* (VU) and *P. ranfurlyi* (VU). Populations of seabirds on the Snares are particularly remarkable, with over 2.75 million pairs of the sooty shearwater *Puffinus griseus*. There are 14 endemic land birds, including two great rarities: the Chatham snipe *Coenocorypha pusilla* (VU) 30 of which were discovered only in 1997 on a 19 ha rat-free islet, and the brown teal *Anas aucklandica* (VU), one relative of which, the Campbell Islands teal *A. nesiotis* (CR) which was in 1998 reduced to 25 pairs on Dent Island. Both species are now thriving on Campbell Island since rats were eliminated. Other island species include the New Zealand falcon, *Falco novaeseelandiae*, Auckland Islands rail *Lewinia muelleri* (VU), the Antipodes green, red-fronted and yellow-crowned parakeets *Cyanoramphus unicolor* (VU), *C. novaeseelandiae* and *C. auriceps*, New Zealand snipe *Coenocorypha aucklandica*, tomtit *Petroica macrocephala*, and the double-banded plover *Charadrius bicinctus exilis*. The flightless Auckland Island merganser *Mergus australis* was last recorded in 1902 and is extinct.

The islands are home to the rare New Zealand sea lion *Phocarctos hookeri* (VU) with an estimated population of 12,000-14,000 in 1998 of which some 95% breed in the Auckland Islands; also the New Zealand fur seal *Arctocephalus forsteri* of which the largest breeding sites are in the Bounty Islands (20,000 in 1992). Southern right whales *Eubalaena australis* breed in the waters off the Campbell and Auckland Islands. There is one species of freshwater fish, the koaro *Galaxias brevipinnis*, found in streams in the Campbell and Auckland Islands with 19 endemic species of freshwater invertebrates. The insect fauna has high endemism: it includes 280 species, (30% endemic) on the Auckland Islands, 275 spp. (40% endemic) on the Campbell Islands, and 50 spp. (25% endemic) on the Antipodes Islands. 36 out of 78 species of Lepidoptera and all seven species of stonefly are endemic. The Auckland Islands weta *Dendroplectron cryptacanthus*, a large flightless grasshopper, is of endemic genus and species and there are a number of endemic snails and spiders. Marine diversity is not high, although the large Auckland Island spider crab *Jacquintia edwardsii* is notable, and the arrow squid *Nototodarus gouldii*, blue moki *Latridopsis ciliaris* and southern blue whiting *Micromesistius australis* form a valuable fished resource in the marine reserve.

## CONSERVATION VALUE

The islands have a high and diverse population of seabirds and of endemic landbirds, the most southerly forests in the western Pacific, a spectacular megaherb flora and a very rich marine biota. Several islands are essentially unmodified by man or introduced herbivores. Most of the world population of the rare Hooker's sea lion breeds on Auckland Island. The Park lies within a WWF Marine Global 200 Eco-region, a WWF/IUCN Centre of Plant Diversity and a BirdLife-designated Endemic Bird Area.

## **CULTURAL HERITAGE**

Traces of 13th century Polynesian settlement have been found. The Bounty Islands were discovered by Europeans in 1788 followed by a scramble of sealing expeditions in the early 19th Century. By the 1830s the seals of all the islands were all but extinct. A party of Maori-Moriori from Chatham Island briefly colonised Port Ross in Auckland Island in 1840, leaving in 1856, and a European whaling station established in the same area in 1849 failed within three years. Rabbits, goats and pigs were released on several islands by sealers during the early 19th century to support shipwrecked sailors for whom castaway boatsheds were built as at Erebus Cove. An era of farming started in the 1870s with sheep farming at Port Ross, followed on Campbell Island in 1894. Sheep numbers at the latter peaked at 8,500 in 1910 but the station was abandoned in 1931, the last sheep were eliminated in 1992 and the last rats by 2003. Cattle, introduced onto Enderby Island in 1895 were finally removed in 1993. Several coastwatcher stations were built on Auckland and Campbell Islands and manned during the Second World War.

## **LOCAL HUMAN POPULATION**

The Kai Tahu Iwi are the principal Maori tribe of South Island who relate accounts of voyages to these islands before the European settlement. There is no permanent human population. A manned weather station existed on Campbell Island until it was automated in 1995.

## **VISITORS AND VISITOR FACILITIES**

Tourism has developed since the late 1960s and about ten cruise ships have visited regularly since 1980, totalling about ten ships a year in the 1990s. All visitors must have a permit and be accompanied by a Department of Conservation officer who enforces a rigorous minimum impact code which includes great care not to import alien species, weeds or seeds. Visits are limited to very few places in the Auckland Islands (Enderby Island, Port Ross, Carnley Harbour), to Campbell Island and by 600 visitors a year at the large sites, and 150 a year at small sites. Guided boat cruises are also offered. To prevent trampling of sensitive vegetation, boardwalks are provided at Port Ross, at Erebus Cove and on Campbell Island.

## **SCIENTIFIC RESEARCH AND FACILITIES**

The islands display a pattern of immigration of species, diversification and emergent endemism which offer good opportunities for research into island ecology and evolutionary processes such as flight loss in birds and invertebrates. Under tight control much research has taken place, mainly monitoring the existing conditions and evaluating interventions. The focus is on monitoring and documenting the evolution, status and populations of key species at risk; ecosystem recovery after the removal of introduced biota; the impacts of humans and of fisheries; the translocation of threatened bird species and the effectiveness of quarantine. An 8-bed bunkhouse and laboratory have been built on Enderby I. and huts are available for visiting scientists (and shipwrecked sailors) on several islands.

## **MANAGEMENT**

The islands are managed by the Southern Islands Area of the Southland Conservancy of the Department of Conservation from the mainland who categorise the islands as either 'minimum impact' or 'refuges' according to the degree of impact by introduced animals. A draft Conservation Management Strategy for all five groups was adopted in 1998. Its main features were the restoration of terrestrial ecosystems, including eradication of pests, survey, monitoring and research, management of historic sites and visitor impact controls. One of the strengths of the nomination was the application of legal, administrative and management systems to safeguard the islands' habitats and species. As National Nature Reserves each of the five groups has the highest form of protection under the law, though the surrounding seas is fully protected only around the Auckland Islands. Each island group has a management plan. Several islands - Adams, Disappointment, Dent (Campbell Is.) - are in virtually pristine condition, being free of rats and cats and rarely visited by humans. None of the islands have been as badly affected as Macquarie Island. Though sealers were once active there, the Antipodes Islands underwent minimal transformation. However, pigs, cats, rats and mice still live on most of the larger islands. Sheep and cattle and now rats introduced to Campbell I. have been eradicated and since rabbits and mice were removed from Enderby I. the degraded vegetation has steadily recovered and evolutionary processes enabled to continue. In the Strategic Business Plan and the Conservation Management Strategy the national authorities specified eventual removal of all alien species from the islands. This will take time but should provide a model for oceanic islands everywhere.

In 2008 the Government set up the Subantarctic Marine Protection Planning Forum to be run jointly by the Department of Conservation and the Ministry of Fisheries to review existing protection of the marine environments of New Zealand's sub-Antarctic region. Phase One is to consider protection for territorial seas within 12 nautical miles of the Campbell, Antipodes and Bounty Islands. (The Auckland Islands' seas are already fully protected by a marine reserve and a marine mammal sanctuary). Phase Two will look at protection options for offshore marine environments in the Subantarctic region (DOC, 2008).

## **MANAGEMENT CONSTRAINTS**

There are still alien species on several of the islands: pigs, cats and mice on Auckland Island, and cats and mice on Masked Island (Aucklands). Ground nesting birds suffer from most of these and pigs also degrade the vegetation. The flora of Campbell Island was severely modified by farming in the mid 19th century. Grazing by the increasing numbers of livestock seriously depleted the megaherb vegetation, and a number of introduced plants still exist. Visitors pose the threat of further introductions. The Department of Conservation removed all these animals between 1987 and 1993. The speed and extent of the regeneration seen in 1996 astonished botanists.

Fisheries are destroying pinnipeds and seabirds through incidental take, especially by the use of long lines. This is monitored, and the fishery has twice been closed because the acceptable by-catch has been exceeded. Domestic commercial fishing in boats less than 43m long is allowed within 12 nm of all the islands except Auckland. Longline fishing for ling and southern bluefin tuna is known to cause seabird mortality especially as the fishery around the Snares and Bounty Islands occurs during the summer albatross breeding season. An additional problem in managing the marine area such as the unexplained die-off of sealions around the Auckland Islands in the 1990s which has been associated with squid fishery in the area and some conservation groups suggested closure under the Fisheries Act. However New Zealand's Department of Conservation has very limited powers to control commercial harvesting around the islands. There have also been plans for offshore oil exploration.

## **STAFF**

There are no resident staff, but the DOC maintains staff responsible for these islands in Invercargill.

## **BUDGET**

Funds are allocated on a project basis: eg, nearly NZ\$2.7m in 2000 to clear Campbell Island of its last rats by the DOC and Navy. Similar funding may be granted to eradicate pigs from Auckland Island.

## **LOCAL ADDRESS**

Southland Conservancy, Department of Conservation, PO Box 743, Invercargill, New Zealand.

## **REFERENCES**

The principal source for the above information was the original nomination for World Heritage status.

Bradford-Grieve, J. (2000). The Southern Plateau subantarctic ecosystem: how does it work? *Water and Atmosphere* 8 (3): 13.14.

Chown, S. Rodriguez, A., Gremmen, N. & Gaston, K. (2000). World heritage status and conservation of Southern Ocean islands. *Conservation Biology* 15: 550.557.

Department of Conservation (DOC) (2008). Marine life likely to benefit from protection. Press Release. *Scoop Sci-Tech Independent News*, 3 June,

----- (2006) .*Marine Protection for the New Zealand Subantarctic Islands: a Background Resource Document*. Department of Conservation, Wellington.

Department of Conservation (Southland Conservancy)(1995). *Draft Conservation Management Strategy Subantarctic Islands*.

Government of New Zealand (1997). *Nomination of the New Zealand Subantarctic Islands by the Government of New Zealand for Inclusion in the World Heritage List*. Wellington, New Zealand.

A bibliography and further references are included in the nomination document. It includes:

Department of Lands and Survey (1987). *Management Plan for the Auckland Islands Nature Reserve*. Management Plans Series No. NR19.

----- (1984). *Management Plan for the Snares Islands Nature Reserve*. Management Plans Series No. NR9.

----- (1983). *Management Plan for the Campbell Islands Nature Reserve*. Management Plans Series No. NR13.

----- (1983). *Antipodes Islands Management Plan*.

----- (1983). *Bounty Islands Management Plan*.

IUCN (2008). *The Red List of Threatened Species*. IUCN, Cambridge, U.K.

Miskelly C., Sagar, P. Tennyson, A. & Scofield, R (2001). Birds of the Snares Islands, New Zealand. *Notornis* 48: 1.40.

Molloy, J. & Davies, A. (1994). *Setting Priorities for the Conservation of New Zealand's Threatened Plants and Animals*. Department of Conservation, Wellington.

Molloy, L. & Dingwall, P.(1990). World Heritage Values of New Zealand Islands. In Towns D., Daugherty, C. & Atkinson I. (eds). *Ecological Restoration of New Zealand Islands*. Conservation Sciences Publication No. 2. Department of Conservation, Wellington.

Peat, N. (2003). *Subantarctic New Zealand. A Rare Heritage*. Dept. of Conservation. Invercargill. 96 pp.

Peterson, D. (ed.) (2004). *New Zealand Science in Antarctica and the Southern Ocean (2004-2009)*; Antarctica New Zealand, Christchurch.

West, C. (2005). *New Zealand Subantarctic Islands Research Strategy*. Department of Conservation, Invercargill, New Zealand.

Young, E. (1995). Conservation values, research and New Zealand's responsibilities for the Southern Ocean islands and Antarctica. *Pacific Conservation Biology*, Vol. 2.

## **DATE**

October 1998. Updated 12-2008, May 2011.