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**Proposed Balleny Island Specially  
Protected Area**

Submitted by  
New Zealand

# **Proposed Balleny Island Specially Protected Area**

## **Summary**

New Zealand proposes that consideration be given to Specially Protected Area No.4 concerning Sabrina Island in the Balleny Islands being enlarged to include other Balleny Islands, together with a marine area surrounding the islands. A copy of the draft management plan is provided for information and consultation. The designation of an enlarged SPA is considered necessary to protect the unique and special ecological, scientific and aesthetic values of the area and to establish an archipelagic SPA in the Ross Sea region.

## **Background**

At the Fourth Antarctic Treaty Consultative Meeting in Santiago in 1966, a small island in the Balleny Islands was designated as Specially Protected Area No. 4. Sabrina Island was accorded this status in recognition that the Balleny Islands are the most northerly Antarctic land in the Ross Sea region and support fauna and flora which reflect many circumpolar distributions at this latitude.

The Balleny Islands (together with Scott Island) are the only truly marine or oceanic islands (rather than continental islands) on this side of Antarctica making them distinctive from any neighbouring areas. Located 250km off the coast of Antarctica in the northern Ross Sea, the Balleny Islands are a rare “oasis” of land in the Southern Ocean and their position is far enough north to be directly in the path of circumpolar ocean currents. Consequently their presence is likely to create upwellings, which tend to bring nutrient-rich deep water closer to the surface, which in turn makes the area biologically very productive. Volcanic in origin the islands rise sharply from the ocean floor with depths of 2000m found within five nautical miles of the coast. The Balleny Islands are largely ice and snow covered and offers few landing sites from the sea. Most of the islands are ringed by steep spectacular cliffs with offshore rock stacks.

The biological diversity of the Balleny Islands exceeds that of any other site in the Ross Sea region, with at least seven species of breeding birds and three species of seals. A small colony of Chinstrap penguins on Chinstrap Island is a locally rare species and represents the only site between BouvetØya and Peter 1 Islands (264° range of longitude) where these penguins breed.

Numerous species of soil fauna and algae have been recorded from Sabrina Island and are expected to occur on other islands. Weddell, crabeater and southern elephant seals have all been reported hauled out on the Ballenys and leopard seals have been observed on ice floes close inshore. The marine ecosystem is highly productive and supports a diverse benthic and pelagic fauna.

As isolated islands where access is difficult, the Balleny Archipelago has been visited infrequently since discovery in 1839. While the Balleny Islands and surrounding marine ecosystem have not been comprehensively studied or documented they are essentially undisturbed by direct human activity. The ecological, scientific and aesthetic values derived from the isolation, unique position as Antarctic oceanic islands and the low level of human impact are important reasons for special protection of the Balleny Islands and the adjacent marine area.

### **Marine Protected and Managed Areas in Antarctica**

While several Specially Protected Areas adopted under the Antarctic Treaty System include adjacent marine areas, all are small. The only substantial marine areas are designated as Sites of Special Scientific Interest and include SSSI 35 West Bransfield Strait, South Shetland Islands (1100km<sup>2</sup>) and SSSI 36 Eastern Dallmann Bay, Palmer Archipelago (710km<sup>2</sup>) both located on the Antarctic Peninsula.

One marine area on the Antarctic Peninsula is designated as a Multiple Use Planning Area. The Southwest Anders Island area encompasses 1,535km<sup>2</sup> in the vicinity of the western Antarctic Peninsula and Palmer Archipelago, including Bismarck Strait. An Antarctic Specially Managed Area also exists in Admiralty Bay, King George Island, South Shetland Islands (370km<sup>2</sup>).

Cape Royds SSSI 1 (4.6km<sup>2</sup>) is the only area in the Ross Sea region with any form of marine protection.

No where in the Antarctic has an entire archipelago and the adjacent marine ecosystem been afforded protection in a comprehensive manner. By designating the Balleny Islands as a Specially Protected Area, an important gap in the Antarctic protected area system could be filled.

### **Proposed Archipelagic Protected Area (Enlargement of SPA No.4)**

Pending entry into force of Annex V of the Protocol on Environmental Protection to the Antarctic Treaty, Measure (1) 1998, adopted by ATCM XXII, confirmed that proposals to designate and adopt management plans for the protection of particular areas should be viewed as proposals for the designation of Specially Protected Areas (SPAs) in accordance with the Agreed Measures for the Conservation of Antarctic Flora and Fauna.

Accordingly, New Zealand considers that SPA 4 for Sabrina Island could be expanded to include all islands in the Balleny Islands together with an adjacent marine area. A draft management plan for the area is attached. Over the next year comments will be sought from the Scientific Committee on Antarctic Research (SCAR), the Scientific Committee and Commission established pursuant to the Convention on the

Conservation of Antarctic Marine Living Resources (CCAMLR), the scientific community and other interested parties.

The Committee for Environmental Protection is accordingly advised that the draft management plan is to be finalised and proposed by New Zealand for designation as a SPA at ATCM XXIV in 2000.

## **DRAFT Management Plan for Specially Protected Area (SPA) No. 4**

### **BALLENY ISLANDS, NORTHERN ROSS SEA**

#### **1. Description of values to be protected**

Sabrina Island in the Balleny Archipelago was originally designated as SPA No. 4 in Recommendation IV-4 after proposals by New Zealand on the grounds that “the Balleny Islands, as the most northerly Antarctic land in the Ross Sea region, support fauna and flora which reflect many circumpolar distributions at this latitude and that Sabrina Island in particular provides a representative sample of such fauna and flora”. The boundaries of the area, which previously excluded the other islands in the Balleny group and the adjacent marine ecosystem, have been extended to include Young, Row, Borradaile, Buckle, Sabrina, Chinstrap, Monolith and Sturge Islands and all outlying rock promontories as well as the surrounding marine area out to a distance of 12 nautical miles. The original area was set aside primarily to protect the ecological values of Sabrina Island and these reasons for long-term protection now apply to the entire Balleny Archipelago.

The Balleny Islands (together with Scott Island) are the only oceanic islands (rather than continental islands) on this side of Antarctica making them distinctive from any neighbouring areas. Located 250km off the coast of Antarctica in the northern Ross Sea, the Balleny Islands are a rare “oasis” of land in the Southern Ocean and their position is far enough north to be directly in the path of circumpolar ocean currents. Consequently their presence is likely to create upwellings, which tend to bring nutrient-rich deep water closer to the surface, which in turn makes the area biologically very productive. Volcanic in origin the islands rise sharply from the ocean floor with depths of 2000m found within five nautical miles of the coast. The Balleny Islands are largely ice and snow covered and offers few landing sites from the sea. Most of the islands are ringed by steep spectacular cliffs and offshore rock stacks, the highest, the Monolith, reaches 78m in height.

The biological diversity of the Balleny Islands exceeds that of any other site in the Ross Sea region, with at least seven species of breeding birds and three species of seals. Adelie Penguins and Chinstrap Penguins breed on the islands together with Cape Pigeons, Snow Petrels, Antarctic Petrels, Wilson’s Storm Petrels and Antarctic Fulmars. Snow Petrels and Antarctic Fulmars occur in the greatest numbers, with some colonies exceeding 10,000 pairs. Adelie Penguins are the most numerous penguin species, with a total population of approximately 6800 pairs over all of the Balleny Islands. The small (approximately 10 pairs) colony of Chinstrap penguins on Chinstrap Island is a locally rare species and represents the only site between Bouvetøya and Peter 1 Islands (264° range of longitude) where Chinstrap Penguins breed.

Numerous species of soil fauna have been recorded including mites, nematodes and bacteria. Algae have been recorded from Sabrina Island although a comprehensive survey of vegetation has yet to be carried out on the islands.

Weddell, crabeater and southern elephant seals have all been reported hauled out on the Ballenys and leopard seals have been observed on ice floes close inshore. The marine ecosystem is likely to be highly productive and supports a diverse benthic fauna. Twenty-five species of echinoderms have been recorded from around the islands. As isolated islands where access is difficult, the Balleny Archipelago has been visited infrequently. An estimated 15 landings have been made on the islands since discovery in 1839. While the Balleny Islands and surrounding marine ecosystem have not been comprehensively studied or documented they are largely undisturbed by direct human activity. The ecological, scientific and aesthetic values derived from the isolation, unique position as Antarctic oceanic islands and the low level of human impact are important reasons for special protection of the Balleny Islands and the adjacent marine area. The establishment of a marine SPA around the Balleny Island is also consistent with international marine management and conservation objectives, in particular with relation to the Convention on Biological Diversity.

## **2. Aims and objectives**

Management at the Balleny Islands aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- preserve the natural ecosystem as a reference area largely undisturbed by direct human influence;
- allow scientific research on the terrestrial and marine ecosystems, in particular on the avifauna, plants, algae, invertebrates, geology and marine communities in the Area;
- allow other scientific research provided it is for compelling reasons which cannot be served elsewhere;
- minimise human disturbance by preventing unnecessary sampling of fauna and flora;
- minimise the possibility of introduction of alien plants, animals and microbes into the Area;
- allow visits for management purposes in support of the aims and objective of the management plan.

## **3. Management activities**

The following management activities are to be undertaken to protect the values of the Area:

- A copy of this Management Plan shall be kept available, on all ships visiting the Area.
- Markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition.
- Visits shall be made as necessary to assess (no less than once every five years) whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.
- National Antarctic Programmes operating in the region shall consult together with a view to ensuring these steps are carried out.

## **4. Period of designation**

Designated for an indefinite period.

## 5. Maps and photographs

Map A: Balleny Islands, Northern Ross Sea

Figure 1: Perspective view of Sabrina, Chinstrap and Buckle Islands

Figure 2: Perspective view of Sturge Island from the summit of the island

## 6. Description of the Area

### 6(i) Geographical coordinates, boundary markers and natural features

The designated area encompasses the whole of the Balleny Islands archipelago and the adjacent marine area out to a distance of 12nm from mean low water mark of each island. The Balleny Islands consist of three main islands (Sturge, Buckle and Young) and numerous smaller islands located about 250 km off the coast of Northern Victoria Land, Antarctica straddling the Antarctic Circle in the northern Ross Sea. The islands form a chain in a generally NW-SE direction for about 160 km between 66°15'S and 67°10'S and 162°15' E and 164°45'E (Map A).

All the islands are of volcanic origin and are mainly snow and ice covered, bounded by steep cliffs. The islands are constructed on an oceanic crust 10-15 million years old, although the islands are thought to be much younger. Reports of volcanic activity on Buckle Island and Sturge Island were reported last century and early this century, although there has been no recent recorded activity.

Young Island, the most northerly of the group is approximately 29 km long and 8 km wide with a coastline of alternating cliffs and glaciers with no beaches suitable for sea landings. Cape Pigeons (*Daption capense*) and snow petrels (*Padodroma nivea major*) nest on the island with smaller numbers of Antarctic Fulmars (*Fulmarus glacialis*). Row Island is a small island just SSE of Young Island covered with glacial ice with one small beach. Weddell seals (*Leptonychotes weddelli*) have been recorded hauled out on the island. A colony of approximately 6000 Antarctic Fulmars have been observed on the NE coast. Borradaile Island is capped by a glacier and has two beaches on the NW and SW coasts. Weddell, Crabeater (*Lobodon carcinophagus*) and Elephant Seals (*Mirounga leonina*) have been observed on the beaches. Colonies of Snow Petrels, Cape Pigeons and Antarctic Fulmars have been observed on the island and on the Beale Pinnacle (just offshore to the SE). Buckle Island is approximately 30 km long and 8 km wide covered by glacial ice with a coastline of alternating cliffs and glaciers. Bird species recorded here include Snow Petrels, Cape Pigeons, and three colonies of Adelie Penguins (*Pygoscelis adeliae*) at Cape Cornish (533 pairs), Cape Davis (502 pairs) and SE Promontory (322 pairs) (all 1984 counts). Sabrina, Monolith and Chinstrap Islands are located 3 km SSE of Buckle Island. Sabrina Island is less than two km across with a small permanent ice cap covering about 25% of the Island. Two beaches, one at the northern end and one at the SW end offer possible landing sites. Approximately 3500 pairs (1984 count) of Adelie Penguins nest on Sabrina, the largest colony in the Balleny Islands. Cape Pigeons also nest on the island.

Various species of algae, bacteria, yeasts, fungi, mites and nematodes have been recorded on Sabrina Island and are likely to occur on ice free areas of other islands in the Balleny Archipelago, although no detailed surveys have been undertaken. Associated with Sabrina Island are two smaller rocky islets, the Monolith to the south and Chinstrap Island to the NE. The Monolith is dominated by a spectacular 78m high volcanic plug and is connected to Sabrina Island by a boulder spit. Adelie Penguins, approximately 2000 pairs (1984 count) and Chinstrap Penguins (*Pygoscelis antarctica*) (approximately 10 pairs) nest on Chinstrap Island (1984 count). Cape Pigeons also nest on the island. Sturge Island is the largest (approximately 29 km by 13 km) and most southerly of the Balleny Islands. It is almost completely covered by ice except for several cliffs along the west and south coasts. One gravel spit at the SE corner of the island is suitable for landings from the sea where Weddell and Elephant Seals have been observed. A small colony of 10 Adelie Penguins is thought to nest on a rocky promontory at Cape Symth. Extensive colonies of Antarctic Fulmars (10,000-20,000 pairs) have been observed on the NW coast and up to 10,000 Snow Petrels on the central west coast. Cape Pigeons and Antarctic Fulmars have also been recorded along the island's coastline.

Numerous other bird species have been observed near the Balleny Islands and include the Emperor penguin, Southern Giant Petrel, Antarctic Petrel, Prion species, sooty shearwater, Arctic Tern and the Southern Skua.

The Balleny Islands lie at the southern end of a more or less continuous submarine ridge linking the Antarctic continent with the New Zealand plateau by way of Macquarie Island. This feature of the sea floor of the Southern Ocean is likely to be of great significance as a faunal migration route between the Antarctic and the New Zealand and Indo-Pacific regions. In the near-shore marine environment, green, brown and red marine algae occur on rocks at the waters edge. In deeper water (200-500m) around the Balleny Islands the bottom sediments are a black, greasy mud which support an abundant fauna of echinoderms (25 species), gorgonacians and sponges. gastropods, ascidians, polychaetes, pycnogonids, bryozoans, bivalves, amphipods, anemones, brachiopods and scaphopod molluscs. In general the echinoderm fauna shows close relationships with those of the Ross Sea region. The marine ecosystem and much of the associated fauna are unique to the geographic area. The area is the only substantial oceanic island marine ecosystem south of 60 degrees south in the Ross Sea Region. There is a biographic link between these Antarctic areas and the temperate New Zealand region.

A marine reserve would protect marine habitats, fish and other biota over a range of depths from mean low water mark to deep water habitats of over 2000m depth. The area is the key site as a spawning ground for fish stocks, protection of which can contribute to maintaining marine biological diversity in the Ross Sea region and the Southern Ocean.

A boundary out to 12 nautical miles is required to adequately protect representative benthic communities and fish species. Such a zone around each land mass is necessary to protect the ranges of communities, over latitude and water depth, which are unique for this area.

No visible human impacts have been observed or recorded on the Balleny Islands.

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*6(ii) Restricted and managed zones within the Area*  
*Restricted Zone*

Both Sabrina Island and Chinstrap Islands are designated as a Restricted Zone in order to protect part of the Area as a reference site for future comparative studies (for which Sabrina Island was originally designated) and to protect the site of the only Chinstrap Penguin colony in this part of the Antarctic. The Restricted Zone encompasses all of Sabrina and Chinstrap Islands with the marine boundary extending to 500 metres offshore from mean low water. Access to the Restricted Zone is allowed only for compelling scientific and management (such as inspection and review) purposes that cannot be served by visits elsewhere in the Area.

Access to the Area outside of the Restricted Zone is allowed only for compelling scientific and management (such as inspection and review) purposes that cannot be served elsewhere and for recreation or tourism purposes that do not jeopardise the ecological or scientific values of the Area or other permitted activities and only at designated sites (TO BE DETERMINED).

*6(iii) Structures within and near the Area*

No structures are known to exist in the Area.

*6(iv) Location of other protected areas within close proximity of the Area*

The nearest protected area is at Cape Adare (SPA 29) in Northern Victoria Land, approximately 250 kilometers to the southeast.

## **7. Permit conditions**

Entry into the Area is prohibited except in accordance with a Permit issued by appropriate national authorities. Conditions for issuing a Permit to enter the Area are that:

- access to the Restricted Zone is allowed only for compelling scientific or management reasons that cannot be served elsewhere in the Area;
- access to the Area outside the Restricted Zone is allowed only for compelling scientific reasons that cannot be served elsewhere, for essential management purposes consistent with plan objectives such as inspection or review or for recreation or tourism purposes that do not jeopardise the ecological or scientific values of the Area or other permitted activities and only at designated sites;
- the actions permitted are not likely to jeopardise the ecological or scientific values of the Area or other permitted activities and are consistent with the aims and objectives of the management plan;
- the actions permitted are in accordance with the Management Plan;
- the Permit, or a copy, shall be carried within the Area;
- a visit report shall be supplied to the authority named in the Permit;
- the Permit shall be issued for a stated period.

*7(i) Access to and movement within the Area*

Land vehicles are prohibited on all islands within the Area and access shall be by boat or by aircraft. Aircraft should land on the islands only at designated sites (TO BE DETERMINED). It is preferred that aircraft approach and depart from the designated landing sites as shown on Map XX. Movement over the islands shall be by foot. Use of smoke grenades when landing within the Area is prohibited. There are no special restrictions on where access can be gained to the islands by small boat except for recreation or tourism activities which shall be at designated sites (TO BE DETERMINED). Pilots, air or boat crew, or other people on aircraft or boats, are prohibited from moving on foot beyond the immediate vicinity of the landing site unless specifically authorised by a Permit.

Overflight of bird breeding areas lower than 750 m is normally prohibited (MapXX). When required for essential scientific or management purposes, transient overflight down to a minimum altitude of 300m may be allowed and must be specifically authorised by a Permit.

Landings for tourism and recreational purposes shall only be made at designated sites (MAP XX). The maximum number of people ashore at any one site at any one time shall be 40 people. The annual limit on the visitor numbers at each site shall be 200 people. Appropriate national authorities with an interest in the region shall consult together to ensure these limits are not exceeded.

Ships and boats entering the marine component of the Area shall comply with this management plan.

*7(ii) Activities that are or may be conducted in the Area, including restrictions on time or place*

- Scientific research, including sample collection, that will not jeopardise the terrestrial and marine ecosystems of the Area;
- Essential management activities, including monitoring and inspection.
- Recreation and tourism activities outside the Restricted Zone that will not jeopardise the terrestrial and marine ecosystems of the Area and only at designated sites.

*7(iii) Installation, modification or removal of structures*

No structures are to be erected within the Area except as specified in a Permit. Any structure erected within the area shall be associated with approved scientific research activities only. All scientific equipment installed in the Area must be authorised by Permit and clearly identified by country, name of the principal investigator and year of installation. All such items should be made of materials that pose minimal risk of contamination of the Area. Removal of specific equipment for which the Permit has expired shall be a condition of the Permit.

*7(iv) Location of field camps*

Camping is permitted only at the designated sites (Map XX) and is prohibited on Chinstrap Island. Camping is only permitted in association with approved scientific research or management activities.

*7(v) Restrictions on materials and organisms which can be brought into the Area*

No living animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions. No poultry products, including food products containing uncooked dried eggs, shall be taken ashore within the Area. No herbicides or pesticides shall be introduced into the Area. Any other chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in the Permit, shall be removed from the Area at or before the conclusion of the activity for which the Permit was granted. Fuel is not to be stored in the Area, unless required for essential purposes connected with the activity for which the Permit has been granted.

All materials introduced shall be for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of their introduction into the environment is minimised.

*7(vi) Taking or harmful interference with native flora or fauna*

This is prohibited, except in accordance with a Permit. Terrestrial and marine flora and fauna may only be taken for compelling scientific purposes and only in accordance with a permit. Where animal taking or harmful interference is involved, this should, as a minimum standard, be in accordance with the SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica.

*7(vii) Collection or removal of anything not brought into the Area by the Permit holder*

Material may be collected or removed from the Area only in accordance with a Permit and should be limited to the minimum necessary to meet scientific or management needs. Material of human origin likely to compromise the values of the Area, which was not brought into the Area by the Permit holder or otherwise authorised, may be removed from any part of the Area, including the Restricted Zone, unless the impact of removal is likely to be greater than leaving the material *in situ*: if this is the case the appropriate authority should be notified.

*7(viii) Disposal of waste*

All wastes, including all human wastes, shall be removed from the Area. No waste, including bilge water, sewage or solid waste, shall be discharged from any ship or boat within the Area.

*7(ix) Measures that are necessary to ensure that the aims and objectives of the Management Plan can continue to be met*

1. Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of small samples for analysis or review, to erect or maintain signposts or for management activities.
2. Any specific sites of long-term monitoring shall be appropriately marked.

3. To help maintain the ecological and scientific values of the isolation and relatively low level of human impact at the Area visitors shall take special precautions against introductions. Of particular concern are microbial or vegetation introductions sourced from soils at other Antarctic sites, including stations, or from regions outside Antarctica. To minimise the risk of introductions, visitors shall thoroughly clean footwear and any equipment to be used in the area — particularly sampling equipment and markers — before entering the Area.

*7(x) Requirements for reports*

Parties should ensure that the principal holder for each Permit issued submits to the appropriate authority a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form suggested by SCAR.

Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary descriptions of activities conducted by persons subject to their jurisdiction, which should be in sufficient detail to allow evaluation of the effectiveness of the Management Plan. Parties should, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage, to be used both in any review of the management plan and in organising the scientific use of the Area.