

Management Plan for Antarctic Specially Protected Area No. 102

ROOKERY ISLANDS, HOLME BAY, MAC.ROBERTSON LAND

Introduction

The Rookery Islands are a group of small islands and rocks in the western part of Holme Bay, lying to the north of the Masson and David Ranges in Mac.Robertson Land, East Antarctica (67°36'36" S, 62°32'01" E, Map A and Map B). The Rookery Islands were originally designated as Specially Protected Area No. 2 through Recommendation IV-II (1966), after a proposal by Australia. A management plan for the Area was adopted under Recommendation XVII-2 (1992). In accordance with Decision 1 (2002), the site was redesignated and renumbered as Antarctic Specially Protected Area (ASPA) No. 102. Revised ASPA management plans were adopted under Measure 2 (2005) and Measure 2 (2010). The Area is designated to protect breeding colonies of the five bird species known to breed in the region, including the southern giant petrel (*Macronectes giganteus*) and the Cape petrel (*Daption capensis*) which are not known to occur elsewhere in the region. The Area is one of only four known southern giant petrel breeding colonies in East Antarctica.

1. Description of values to be protected

The Rookery Islands contain breeding colonies of five bird species: Adélie penguin (*Pygoscelis adeliae*), Cape petrel, snow petrel (*Pagodroma nivea*), southern giant petrel, and Antarctic skua (*Catharacta maccormicki*). It is also highly likely that Wilson's storm petrels breed on the islands. The Area is primarily designated to safeguard this unusual assemblage of bird species. The Rookery Islands also provide a representative sample of the near-shore island habitats occurring along the coast of Mac.Robertson Land.

A small colony of about 4 pairs of southern giant petrels is located on Giganteus Island, the third largest island in the Rookery Islands group. However, up to 80 southern giant petrels have been occasionally observed feeding on seal carcasses in the Holme Bay region. The species is not known to breed elsewhere in the Holme Bay region. This colony is one of only four known breeding sites in East Antarctica. The other three East Antarctic colonies are located near the Australian stations of Casey (Frazier Islands, ASPA 160, 66°14'S 110°10'E, approximately 250 pairs), and Davis (Hawker Island, ASPA 167, 68°35'S, 77°50'E, approximately 35 pairs), and near the French station Dumont d'Urville (Pointe-Géologie Archipelago, ASPA 120, 66°40'S, 140°01'E, 12-15 pairs). These four breeding colonies represent less than one per cent of the global breeding population that comprises approximately 50,000 breeding pairs, approximately 11,000 of which are found south of 60°S, mostly in the Antarctic Peninsula region.

Currently there are relatively few published data available that allow robust analyses of southern giant petrel population trends. Some locations have experienced a decrease that appears to be stabilising or to have reversed in recent years. Small increases have occurred at other locations.

The seabird assemblage occupying the Area comprises breeding populations of probably five of the eight flying seabird species breeding in East Antarctica, and one penguin species. This offers a unique opportunity to study population dynamics of different species. In addition, it is important to protect southern giant petrels at the southern limit of their breeding range. The Antarctic Treaty parties have committed to minimise human disturbance to southern giant petrels, and to encourage regular population counts at all breeding sites in the Antarctic Treaty area.

2. Aims and Objectives

Management of the Rookery Islands aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- allow scientific research on the ecosystem, particularly on the avifauna, and physical environment, provided it is for compelling reasons which cannot be served elsewhere;
- minimise the possibility of introduction of pathogens which may cause disease in bird populations within the Area;
- minimise the possibility of introduction of alien plants, animals and microbes to the Area;
- minimise human disturbance to southern giant petrels on Giganteus Island;
- allow Giganteus Island to be used as a reference area for future comparative studies with other breeding populations of southern giant petrels;
- preserve Giganteus Island, henceforth, as a highly restricted area by limiting human visitation to the island during the southern giant petrel breeding season;
- allow for the gathering of data on the population status and related demography of the bird species on a regular basis; and
- allow visits for management purposes in support of the aims of the management plan.

3. Management Activities

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

- information on the location of the Area (stating special restrictions that apply), and a copy of this Management Plan shall be kept available at adjacent operational research/field stations and will be made available to ships visiting the vicinity;
- where practicable the Area shall be visited as necessary (preferably no less than once every five years), to assess whether it continues to serve the purposes for which it was designated and to ensure that management activities are adequate;
- where practicable, at least one research visit should be conducted to census the southern giant petrels at Giganteus Island and other seabird populations in each five year period, to enable assessment of breeding populations.
- the Management Plan shall be reviewed at least every five years.

4. Period of Designation

Designation is for an indefinite period.

5. Maps

Map A: Antarctic Specially Protected Area No 102, Rookery Islands, Mawson Coast, Mac.Robertson Land, East Antarctica. The inset map indicates the location in relation to the Antarctic continent.

Map B: Antarctic Specially Protected Area No 102, Rookery Islands. Bird distribution

Map C: Antarctic Specially Protected Area No 102, Giganteus Island (Restricted Zone). Topography and bird distribution .

Specifications for all Maps:

Horizontal Datum: WGS84 Projection: UTM Zone 49.

6. Description of the Area

6(i) Geographical co-ordinates, boundary markers and natural features

The Rookery Islands comprise a small group of approximately 75 small islands and rocks in the south-west part of Holme Bay, Mac.Robertson Land, about 10 km to the west of the Australian station Mawson. The Area comprises those rocks and islands lying within a rectangle enclosed by following coordinates: 62°28'01"E, 67°33'45"S; 62°34'37"E, 67°33'47"S; 62°28'02"E, 67°38'10"S; 62°34'39"E, 67°38'11"S (Map B).

There are no boundary markers delimiting the site.

The Rookery Islands range in size from small rocks which barely remain above water at high tide to the larger islands which include Giganteus Island (approximately 400 m long, 400 m wide and 30 m high) and Rookery Island, the highest of the group, with an altitude of 62 m, and of similar area, but slightly more elongate. Raised beaches are evident on Giganteus Island.

Climate

Limited data exist for the meteorology of the Area. Conditions are probably similar to those of the Mawson station area where the mean monthly temperature ranges from +0.1°C in January to -18.8°C in August, with extreme temperatures ranging from +10.6°C to -36.0°C. The mean annual wind speed is 10.9 m per second with frequent prolonged periods of strong south-easterly katabatic winds from the ice cap at mean speeds over 25 m per second and gusts often exceeding 50 m per second. Mean wind speed decreases seaward with distance from the icecap, but is unlikely to be much lower at the Rookery Islands which lie quite close to the coast. Other general characteristics of the coastal Antarctic climate to which these islands are likely to be subjected are high cloudiness throughout the year, very low absolute humidity, low precipitation and frequent periods of intensified winds, drifting snow and low visibility associated with the passage of major low pressure systems.

Environmental Domains and Antarctic Conservation Biogeographic Regions

Based on the Environmental Domains Analysis for Antarctica (Resolution 3 (2008)) the Rookery Islands are located within Environment D *East Antarctic coastal geologic*. Based on the Antarctic Conservation Biogeographic Regions (Resolution 6 (2012)) the Rookery Islands are not assigned to a Biogeographic Region.

Geology and soils

The Rookery Islands are outcrops of the Mawson charnockite, a rock type which occurs over an area of at least 2000 square kilometres along the coast of Mac.Robertson Land. The charnockites of the Rookery Islands are the fine grained variant and are comparatively poor in the mineral hypersthene but rich in garnet and biotite. The charnockites enclose abundant bands and lenses of hornfels, garnetiferous quartz and felspar-rich gneisses. There are also a number of pegmatic dykes which cut across the charnockite rocks.

Vegetation

No mosses or lichens have been recorded from any of the Rookery Islands. There are some terrestrial algae but no taxonomic identifications have been made. Most of the smaller islands and rocks are covered with sea spray in summer and are sometimes scoured by rafted sea ice in winter and spring. It is considered unlikely that species of moss or lichen could become established.

Inland waters

There are no freshwater bodies on the Rookery Islands.

Birds

Five species of birds are known to breed on the Rookery Islands: Adélie penguin (*Pygoscelis adeliae*), Cape petrel (*Daption capensis*), snow petrel (*Pagodroma nivea*), southern giant petrel (*Macronectes giganteus*), and the south polar skua (*Catharacta maccormicki*). Wilson's storm petrels (*Oceanites oceanicus*) are likely to breed there as well but nest sites have not yet been found.

The southern giant petrels nest on Giganteus Island (Map C). The colony is currently very small but has been stable at 2-4 breeding pairs since the mid-1960s. A total of 16 incubating birds were recorded in 1958, and in 1967, 13 nests were occupied but only four contained eggs. Only two nests were present in 1972, four in 1973, two in 1977, one in 1981, two in 1982, and three in 2001. During the most recent count in 2007, four nests were counted on two separate occasions, with two pairs and two lone birds at first count (27th November) and three pairs and one lone bird on an egg (therefore assumed to have an absent partner) at second count (10th December). The nests are shallow mounds of stones and are built on broad gravel patches on the raised beaches. The area has many old nest sites and several may be rebuilt each year but there is no evidence that they are used.

Cape petrels breed on Rookery Island and a small island known as Pintado Island, located 300 m north-west of Rookery Island. In the most recent survey of Cape petrel populations in the Area on 24 December 2007, 123 occupied nests were observed on Pintado Island and 10 occupied nests on Rookery Island. The nearest known breeding colonies of Cape petrels to the Area occur at four rock outcrops near Forbes Glacier 8 km to the west, and on Scullin and Murray Monoliths (ASPA 164) approximately 200 km to the east. A remotely operating camera on the un-named island 250 m east of Rookery Island (Map B) is monitoring annual breeding success of approximately 30 Cape petrel nests.

Adélie penguins breed on 14 of the islands. The most recent population survey across the Area in December 2007 estimated the breeding population at all 14 islands was approximately 91,000 occupied nests. The largest populations occur on Rookery Island (31,000 occupied nests) and Giganteus Island (11,000 occupied nests). Although the Area-wide survey has not been repeated since 2007, surveys of individual islands are being undertaken each year and an up-dated Area-wide estimate will be possible during the life of this plan. A remotely operating camera on Rookery Island (Map B) is also monitoring the annual breeding success at approximately 30 Adélie penguin nests.

Snow petrels nest throughout the Rookery Islands and in greatest concentration on Rookery Island. Wilson's storm petrels are frequently seen flying around the islands and probably breed on a number of the larger islands in the group, although no nests have been recorded.

6(ii) Access to the Area

The Area can be accessed by oversnow vehicles or boats (depending on sea ice conditions) and aircraft. There are no designated landing sites (also see Section 7(ii)).

6(iii) Location of structures within and adjacent to the Area

Two remotely operating time lapse cameras are located at 67°37'55.5"S, 62°30'47.9"E and 67°36'12.6"S, 62°29'17.0"E. Deployed in 2010/11, the cameras support long term monitoring of Adélie penguin and Cape petrel breeding success and phenology, with minimal disturbance. While not permanent the cameras are expected to remain in place beyond the term of this plan.

There are no other structures within or adjacent to the Area.

6(iv) Location of other protected areas in the vicinity

ASPA 101 Taylor Rookery, Mac.Robertson Land (67°27'14"S; 60°53'0"E) is located approximately 80 kilometres to the west.

6(v) Special zones within the Area

Giganteus Island is designated as a Restricted Zone to afford a high level of protection to southern giant petrels (Map B, Map C). Entry is restricted and may only be permitted in accordance with the purposes and conditions detailed elsewhere in this management plan.

7. Terms and conditions for entry permits

7(i) General conditions

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

- it is issued only for compelling scientific reasons that cannot be served elsewhere, in particular for scientific study of the avifauna and ecosystem of the Area, or for essential management purposes consistent with plan objectives, such as inspection, maintenance or review;
- the actions permitted will not jeopardise the values of the Area;
- the actions permitted are in accordance with the management plan;
- the permit, or an authorised copy, shall be carried within the Area;
- a visit report shall be supplied to the authority named in the permit;
- permits shall be issued for a stated period;
- the appropriate national authority shall be notified of any activities/measures undertaken that were not included in the authorised permit.

Entry to the Giganteus Island Restricted Zone is only permitted in accordance with conditions outlined below.

- Permits to enter the Giganteus Island Restricted Zone during the southern giant petrel breeding period (1 October to 30 April) may only be issued for the purpose of conducting censuses. Other research may be conducted outside the breeding period in accordance with a permit.
- Wherever practicable, censuses should be conducted from outside the southern giant petrel colony using vantage points from which the nesting birds may be counted.
- Access to the Restricted Zone should be limited to the minimum amount of time reasonably required to undertake the census.
- Visits to conduct censuses should be made by a team including someone from a national Antarctic program with relevant scientific skills and experience. Other personnel should remain at the shoreline.
- For permitted activities associated with obtaining census data or biological data, persons shall not approach closer than is necessary to any nesting southern giant petrels, and in no case closer than 20 m so long as no birds are disturbed (showing no change in behaviour).
- Overflights of Giganteus Island are prohibited.

7(ii) Access to, and movement within or over the Area

Travel to the Area may be by boat, by vehicle over sea ice, or by aircraft.

Vehicles are prohibited on the islands, and vehicles and boats must be left at the shoreline. Movement on the islands is by foot only. Vehicles used to access the islands over sea ice must be taken no closer than 250 m from concentrations of birds.

Access to Giganteus Island is prohibited except in accordance with the provisions elsewhere in this Plan.

If access to the islands is not possible by boat or by vehicle over sea ice, then fixed wing aircraft or helicopters may be used subject to the following conditions:

- disturbance of the colonies by aircraft shall be avoided at all times
- sea ice landings shall be encouraged (where practicable);
- aircraft landings on Giganteus Island during the breeding season are prohibited;
- as aircraft may provide the only viable access to the other islands when sea and sea ice access is not possible, single-engine helicopters may land on the islands during the breeding season where it is possible to maintain a distance of at least 500 m from bird colonies. Permission to land an aircraft may be granted for essential scientific or management purposes only if it can be demonstrated that disturbance will be minimal. Only personnel who are required to carry out work in the Area should leave the helicopter;
- when accessing Giganteus Island by aircraft outside the breeding season sea ice landings are preferred, following separation distances mentioned below;
- at all other times, single-engine helicopters and fixed wing aircraft must not land or take off within 930 m (3050 ft) or fly within 750 m of bird colonies, and twin-engine helicopters must not land, take off or fly within 1500 m of bird colonies;
- overflights of the islands during the breeding season is prohibited, except where essential for scientific or management purposes. Such overflights are to be at an altitude of no less than 930 m (3050 ft) for single-engine helicopters and fixed-wing aircraft, and no less than 1500 m (5000 ft) for twin-engine helicopters;
- refuelling of aircraft is prohibited within the Area.

There are no marked pedestrian routes within the Area. Unless disturbance is authorised by permit, pedestrians should keep at least 100 m from concentrations of birds, and give way to departing and arriving penguins. Pedestrians moving in or around the Area should avoid crossing the access routes of birds if possible, or cross quickly without disturbing penguin traffic.

7(iii) Activities which are or may be conducted within the Area, including restrictions on time and place

The following activities may be conducted within the Area as authorised in a permit;

- scientific research consistent with the Management Plan for the Area which cannot be undertaken elsewhere and which will not jeopardise the values for which the Area has been designated or the ecosystems of the Area;
- essential management activities, including monitoring; and
- sampling, which should be the minimum required for approved research programs.

7(iv) Installation, modification, or removal of structures

- Permanent structures or installations are prohibited.
- Other structures or installations shall not be erected within the Area except as specified in a permit.
- Small temporary refuges, hides, blinds or screens may be constructed for the purpose of scientific study of the avifauna.
- Installation (including site selection), removal, modification or maintenance of structures shall be undertaken in a manner that minimises disturbance to breeding birds.
- All scientific equipment or markers installed within the Area must be clearly identified by country, name of the principal investigator, year of installation and date of expected removal.
- Markers, signs or other structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition and removed when no longer required. All such items should be made of materials that pose minimal risk of harm to bird populations or of contamination of the Area.

Permits will require the removal of specific structures, equipment or markers before the permit expiry date.

7(v) Location of field camps

- Camping is prohibited within the Area except in an emergency.

7(vi) Restrictions on materials and organisms that may be brought into the Area

- No poultry products, including dried food containing egg powder, are to be taken into the Area.
- No depots of food or other supplies are to be left within the Area beyond the season for which they are required.
- Deliberate introduction of animals, plant material, micro-organisms and non-sterile soil into the Area is prohibited. The highest level precautions shall be taken to prevent the accidental introduction of animals, plant material, micro-organisms and non-sterile soil from other biologically distinct regions (within or beyond the Antarctic Treaty area) into the Area;
- To the maximum extent practicable, clothing, footwear and other equipment used or brought into the Area (including backpacks, carry-bags and other equipment) shall be thoroughly cleaned before entering and after leaving the Area.
- Boots and sampling/research equipment and markers that comes into contact with the ground shall be disinfected or cleaned with hot water and bleach before entering and after visiting the Area to help prevent accidental introductions of animals, plant material, micro-organisms and non-sterile soil into the Area. Cleaning should be undertaken at station.
- Visitors should also consult and follow as appropriate recommendations contained in the Committee for Environmental Protection Non-native Species Manual (CEP 2011), and in the Environmental Code of Conduct for terrestrial scientific field research in Antarctica (SCAR 2009);
- No herbicides or pesticides shall be brought into the Area. Any other chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in a permit, shall be removed from the Area as far as possible 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. Permanent fuel depots are not permitted.
- All material 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 as to minimise the risk of environmental impact.

7(vii) Taking of, or harmful interference with, native flora and fauna

- Taking of, or harmful interference with, native flora and fauna is prohibited, except in accordance with a permit. Where taking or harmful interference with animals 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*.
- Ornithological research shall be limited to activities that are non-invasive and non-disruptive to the breeding seabirds present within the Area. Surveys, including aerial photographs for the purposes of population census, shall have a high priority.
- Disturbance of southern giant petrels shall be avoided at all times.

7(viii) Collection or removal of anything not brought into the Area by the permit holder

- Material may only be collected or removed from the Area as authorised in a permit and shall 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 unless the impact of the removal is likely to be greater than leaving the material *in situ*. If such material is found the permit issuing authority shall be notified if possible while the field party is present within the Area.

7(ix) Disposal of waste

- All wastes, including human wastes, shall be removed from the Area. Wastes from field parties shall be stored in such a manner to prevent scavenging by wildlife (e.g. skuas) until such time as the wastes can be disposed or removed. Wastes are to be removed no later than the departure of the field party. Human wastes and grey water may be disposed into the sea outside the Area.

7(x) Measures that may be necessary to continue to meet the aims of the Management Plan

Permits may be granted to enter the Area to:

- carry out biological monitoring and Area inspection activities, which may involve the collection of samples for analysis or review;
- erect or maintain scientific equipment and structures, and signposts; or
- carry out other protective measures.

Any specific sites of long-term monitoring shall be appropriately marked and a GPS position obtained for lodgement with the Antarctic Data Directory System through the appropriate national authority.

To help maintain the ecological and scientific values of the Area, visitors shall take special precautions against introductions of non-indigenous organisms. Of particular concern are pathogenic, microbial or vegetation introductions sourced from soils, flora and fauna at other Antarctic sites, including research stations, or from regions outside Antarctica. To minimise the risk of introductions, before entering the Area visitors shall thoroughly clean footwear and any equipment, particularly sampling equipment and markers to be used in the Area.

Where practical, a census of southern giant petrels on Giganteus Island shall be conducted at least once in every five year period. Censuses of other species may be undertaken during this visit provided no additional disturbance is caused to the southern giant petrels.

To reduce disturbance to wildlife, noise levels including verbal communication is to be kept to a minimum. The use of motor-driven tools and any other activity likely to generate noise and thereby cause disturbance to nesting birds is prohibited within the Area during the breeding period (1 October to 30 April).

7(xi) Requirements for reports

The principal permit holder for each visit to the Area shall submit a report to the appropriate national authority as soon as practicable, and no later than six months after the visit has been completed. Such visit reports should include, as applicable, the information identified in the visit report form contained in the *Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas*. If appropriate, the national authority should also forward a copy of the visit report to the Party that proposed the Management Plan, to assist in managing the Area and reviewing the Management Plan. Parties should, wherever possible, deposit originals or copies of such original visit reports in a publicly accessible archive to maintain a record of usage, for the purpose of any review of the Management Plan and in organising the scientific use of the Area.

A copy of the report should be forwarded to the Party responsible for development of the Management Plan (Australia) to assist in management of the Area, and the monitoring of bird populations. Visit reports shall provide detailed information on census data, locations of any new colonies or nests not previously recorded, a brief summary of research findings and copies of photographs taken of the Area.

8. Supporting Documentation

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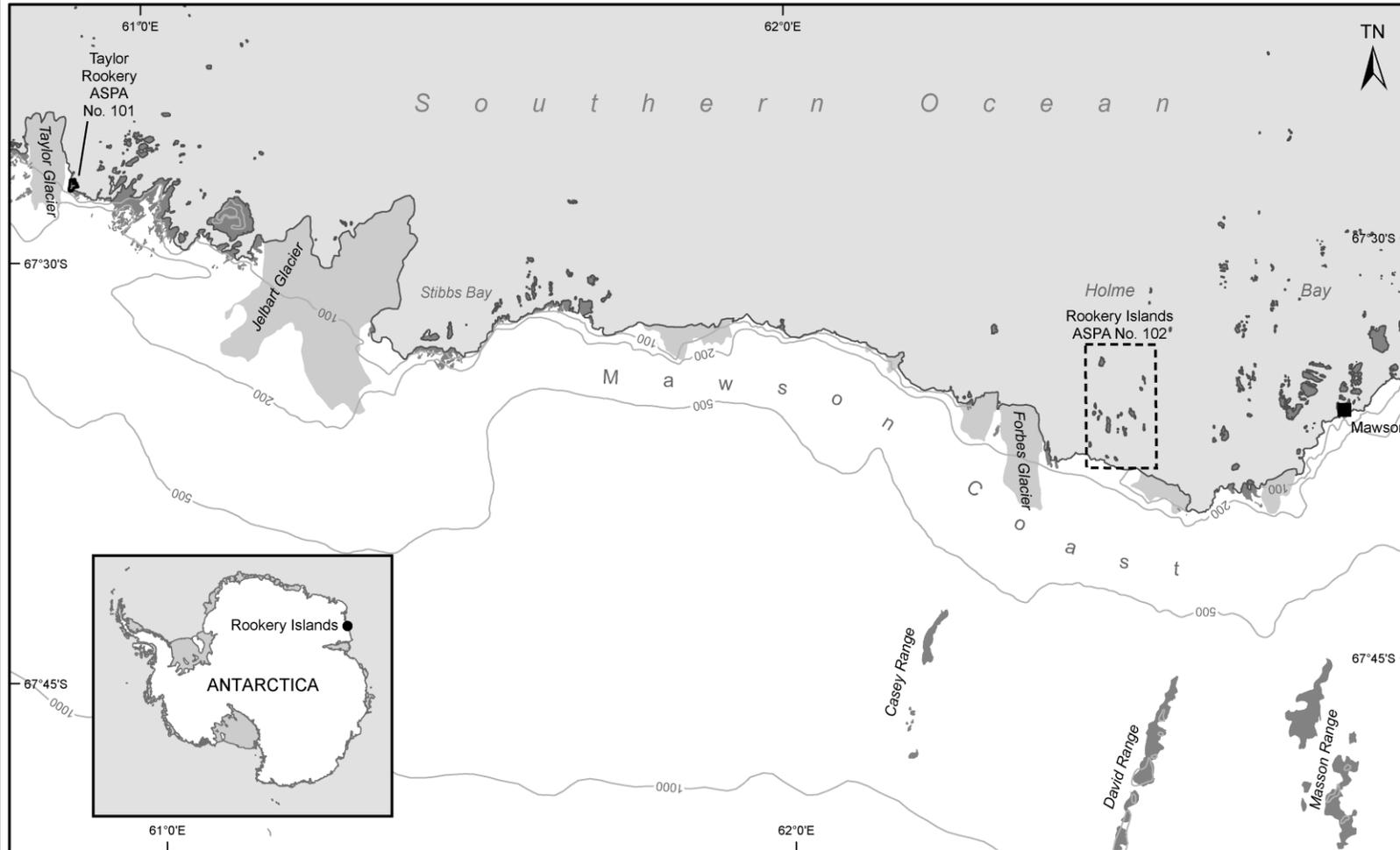
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Australian Government
Department of the Environment
Australian Antarctic Division

Map A: Antarctic Specially Protected Area No 102, Rookery Islands, Mawson Coast, Mac.Robertson Land, East Antarctica



- Station
- ▬ Contour (metres)
- Ice-free area
- Ice shelf, ice tongue
- ▭ Rookery Islands ASPA No. 102
The islands within this area
- ▭ Taylor Rookery ASPA No. 101

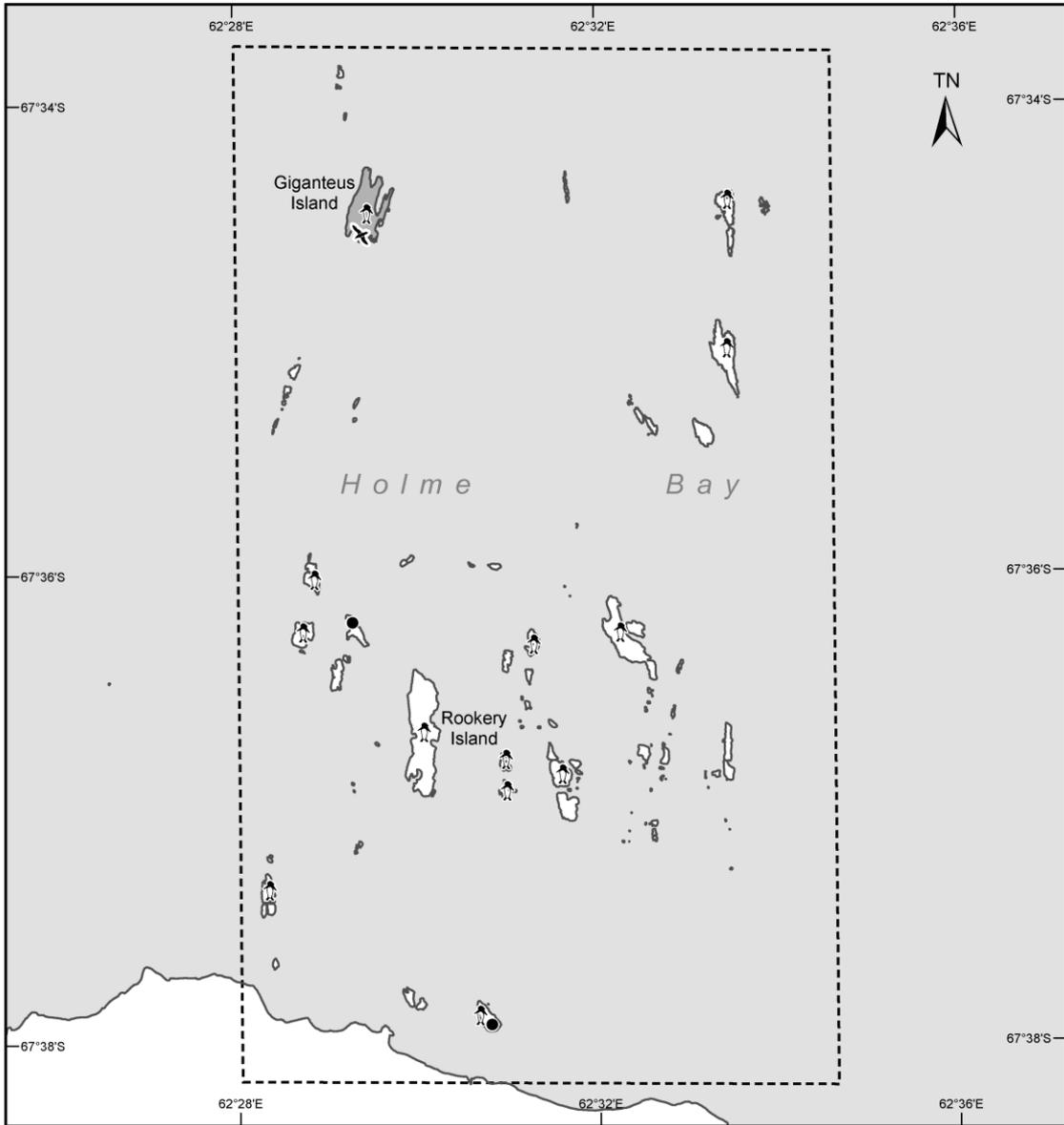
0 5 10 15 20
Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 41

Map Available at: <http://data.aad.gov.au/aadc/mapcat/>
Map Catalogue No. 14354
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Map B: Antarctic Specially Protected Area No. 102
 Rookery Islands
 Bird Distribution

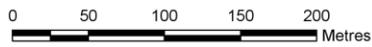
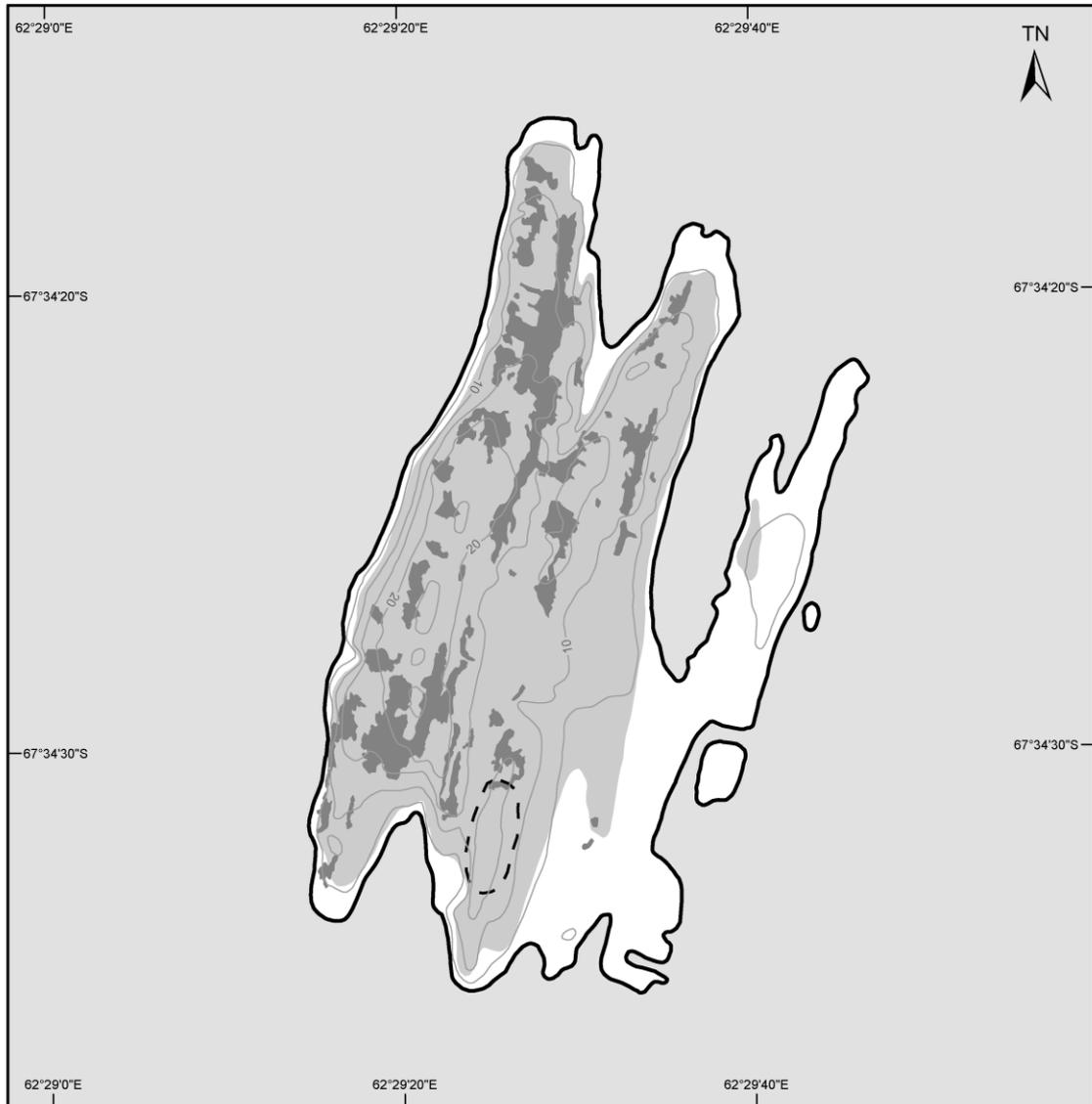


<ul style="list-style-type: none"> Adélie penguin colonies Southern giant petrel colony Camera location 	<p>0 500 1000 1500 2000 Metres</p> <p>Horizontal Datum: WGS84 Projection: UTM Zone 41</p>	<p>Map Available at: http://data.aad.gov.au/aadc/mapcat/ Map Catalogue No. 14355 Produced by the Australian Antarctic Data Centre, Australian Antarctic Division, March 2015. © Commonwealth of Australia 2015</p>
<ul style="list-style-type: none"> Restricted zone Rookery Islands ASPA No. 102 - The islands within this area 		



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Map C: Antarctic Specially Protected Area No. 102 Giganteus Island (Restricted Zone) Topography and Bird Distribution



Horizontal Datum: WGS84
Projection: UTM Zone 41

- Contour (5m interval)
- Ice-free area
- Adélie penguin colony
- Restricted zone
- - - Southern giant petrel colony

Map Available at: <http://data.aad.gov.au/aadc/mapcat/>
Map Catalogue No. 14356
Produced by the Australian Antarctic Data Centre,
Australian Antarctic Division, March 2015.
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