Management Plan for Antarctic Specially Protected Area No. 103

ARDERY ISLAND AND ODBERT ISLAND, BUDD COAST

Introduction

Ardery Island and Odbert Island (66°22'S, 110°28'E and 66°22'S, 110°33'E, Map A) were originally designated as Specially Protected Area (SPA) No. 3 in accordance with the Agreed Measures for the Conservation of Antarctic Fauna and Flora, through Recommendation IV-III (1966), after a proposal by Australia.

The Area was designated on the grounds that the islands support several breeding species of petrel and provide an example of their habitat and that of the Antarctic Petrel (*Thalassoica antarctica*) and the Southern Fulmar (*Fulmarus glacialoides*), both of particular scientific interest.

A revised description and management plan for the Area was adopted by Recommendation XVII-2 (1992) to accord with the format for Area Descriptions and Management Plans of Article 5 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty, adopted under Recommendation XVI-10 (1991). In accordance with Resolution XX -5 (1996) the site was redesignated and renumbered as Antarctic Specially Protected Area (ASPA) No. 103.

This revised Management Plan reaffirms the scientific values of the original designation.

1. Description of Values to be Protected

Ardery Island and Odbert Island (Map B and C) support several breeding species of petrel. There is no other readily accessible place in eastern Antarctica where the four genera of fulmarine petrels (*Thalassoica antarctica*, *Fulmarus glacialoides*, *Daption capense* and *Pagodroma nivea*) breed in the same place in sufficient numbers to allow comparative study. Study of these four genera at one location is of high ecological importance in understanding and monitoring the Southern Ocean ecosystem.

It is believed that Ardery Island is unique insofar as it is the only area in the Antarctic which harbours two different subspecies of snow petrels. Studies on morphological or ecological differences between these two subspecies are not possible anywhere else. In addition both islands have breeding populations of Wilson's storm petrels (*Oceanites oceanicus*) and Antarctic skuas (*Catharacta maccormicki*) and Odbert Island supports breeding populations of Adélie penguins (*Pygoscelis adeliae*).

2. Aims and Objectives

Management of the Ardery Island and Odbert Islands ASPA aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance;
- allow scientific research on the ecosystem and physical environment, particularly on the avifauna, 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;
- gather data on the population status of the bird species on a regular basis;
- 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:

- signs illustrating the location and boundary of the Area, with clear statements of entry restrictions, shall be placed at appropriate locations on the boundary of the Area to help avoid inadvertent entry;
- information on the location of the Area (stating special restrictions that apply) shall be displayed prominently, and a copy of this Management Plan shall be kept available, at the adjacent Casey station and will be provided to ships visiting the vicinity;
- markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition and removed when no longer required;
- abandoned equipment or materials shall be removed to the maximum extent possible provided doing so does not adversely impact on the values of the Area;
- the Area shall be visited as necessary, and 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; and
- 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: East Antarctica, Wilks Land, Location of Antarctic Specially Protected Area Ardery Island and Odbert Island, ASPA No 103. The inset map indicates the location in relation to the Antarctic continent.

  Map Specifications: Projection: Lambert Conical Conformal; Horizontal Datum: WGS84; Vertical Datum: Mean Sea Level
- Map B: Antarctic Specially Protected Area, Ardery Island and Odbert Island, ASPA No 103, showing species distribution at Ardery Island.

  Map Specifications: Horizontal Datum: WGS84; Vertical Datum: Mean Sea Level
- Map C: Antarctic Specially Protected Area, Ardery Island and Odbert Island, ASPA No 103, showing species distribution at Odbert Island.

  Map Specifications: Horizontal Datum: WGS84; Vertical Datum: Mean Sea Level
- Map D: Antarctic Specially Protected Area, Ardery Island and Odbert Island, ASPA No 103, showing air and sea approach for Ardery Island and Odbert Island.

  Map Specifications: Horizontal Datum: WGS84; Vertical Datum: Mean Sea Level

6. Description of the Area

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

Ardery island (66°22’S, 110°28’E) and Odbert island (66°22’S, 110°33’E) are among the southernmost of the Windmill Islands, lying in the south of Vincennes Bay, off the Budd Coast of Wilkes Land, Eastern Antarctica.

Topography

Ardery Island and Odbert Island are located 5 km and 0.6 km, respectively to the west of Robinson Ridge, south of Casey station.

Odbert Island is approximately 2.5 km long and 0.5 km wide. It has a rocky coast which rises steeply from the sea to a plateau. The highest point is 100 m altitude. The plateau is dissected by a series of valleys which run to the south from the high flat rim on the northern side. These

valleys are snow covered in winter. The hill tops remain essentially ice and snow free. In some years, the island remains joined to Robinson Ridge on the mainland by sea ice.

Ardery Island is a steep ice free island approximately 1 km long and 0.5 km wide, with an east-west orientation. The highest point is 113 m above sea level.

The terrain on both islands is rugged and dissected by fissures. The cliffs are fractured and have narrow exposed ledges which in summer are occupied by nesting sea birds. On the hillsides and plateau region, the exposed rock is ice-smoothed and the valley floors are covered with moraine. The islands have undergone isostatic rebound. Moraine and solifluction debris is abundant at heights in excess of 30 metres above mean sea level but considerably less at lower altitudes.

Geology

The Windmill Islands region represent one of the eastern most outcrops of a Mesoproterozoic low-pressure granulite facies terrain that extends west to the Bunger Hills and further to the Archaean complexes in Princess Elizabeth Land, to minor exposures in the east in the Dumont d'Urville area and in Commonwealth Bay. The total outcrop areas do not exceed more than a few square kilometres. The Mesoproterozoic outcrop of the Windmill Islands and the Archaean complexes of Princess Elizabeth Land are two of the few major areas in East Antarctica that can be directly correlated with an Australian equivalent in a Gondwana reconstruction. The Mesoproterozoic facies terrain comprise a series of migmatitic metapelites and metapsammites interlayered with mafic to ultramafic and felsic sequences with rare calc-silicates, large partial melt bodies (Windmill Island supacrustals), undeformed granite, charnockite, gabbro, pegmatite, aplites and cut by easterly-trending late dolerite dykes.

Ardery Island and Odbert Island are part of the southern gradation of a metamorphic grade transition which separates the northern part of the Windmill Islands region from the southern part. The metamorphic grade ranges from amphibolite facies, sillimanite-biotite orthoclase in the north at Clark Peninsula, through biotite-cordierite-almandine granulite, to hornblende-orthopyroxene granulite at Browning Peninsula in the south.

Ardery Island and Odbert Island together with Robinson Ridge, Holl Island, Peterson Island and the Browning Peninsula are similar geologically and are composed of Ardery charnockite. Charnockites are of granitic composition but were formed under anhydrous conditions. The Ardery Charnockite of Ardery Island and Odbert Island intrudes the Windmill metamorphics and consists of a modal assemblage of quartz + plagioclase + microline + orthopyroxene + biotite + clinopyroxene hornblende with opaques and minor zircon and apatite. An isotopic age of about 1200 million years for the Ardery charnockite has been established. The charnockite is prone to deep weathering and crumbles readily because of its mineral assemblage, whereas the metamorphic sequences of the northerly parts of the region have a much more stable mineral assemblage and crystalline structure. This difference has a significant influence on the distribution of vegetation in the Windmill Islands region with the northern rock types providing a more suitable substrate for slow growing lichens.

Soils on the islands are poorly developed and consist of little more than rock flour, moraine and eroded material. Some soils contain small amounts of organic matter derived from excreta and feathers from the seabirds.

Glaciation

The Windmill Islands region was glaciated during the Late Pleistocene. The southern region of the Windmill Islands was deglaciated by 8000 corr. yr B.P., and the northern region, including Bailey Peninsula deglaciated by 5500 corr. yr B.P. Isostatic uplift has occurred at a rate of between 0.5 and 0.6 m/100 yr, with the upper mean marine limit, featured as ice-pushed ridges, being observed at nearby Robinson Ridge at approximately 28.5 metres.

Meteorology

The climate of the Windmill Islands region is frigid-Antarctic. Conditions at Ardery Island and Odbert Island are probably similar to those of the Casey station area approximately 12 km to the

north. Meteorological data for the period 1957 to 1983 from Casey station (altitude 32 m) on Bailey Peninsula show mean temperatures for the warmest and coldest months of 0.3 and -14.9°C, respectively, with extreme temperatures ranging from 9.2 to -41°C. Mean annual temperature for the period was –9.3°C.

The climate is dry with a mean annual snowfall of 195 mm year-1 (rainfall equivalent), precipitation as rain has been recorded in the summer. However, within the last decade the mean annual temperature has decreased to –9.1°C and the mean annual snowfall has increased to 230 mm year-1 (rainfall equivalent).

There is an annual average of 96 days with gale-force winds, which are predominantly easterly in direction, off the polar ice cap. Blizzards are frequent especially during winter. Snowfall is common during the winter, but the extremely strong winds scour the exposed areas. On most hill crests in the area snow gathers in the lee of rock outcrops and in depressions in the substratum. Further down the slopes snow forms deeper drifts.

Biological Features

Terrestrial

The flora of Odbert Island consists of three moss species, eleven lichen species (Table 1) and an unknown number of terrestrial and freshwater algae. The most extensive development of lichens is towards the highest elevations of the southern parts of the island in an area of ice-fractured bedrock. The algae occur in tarns, soil seepage areas and soil. Stands of Prasiola and other green algae and cyanobacteria occur below snow drifts downslope from penguin colonies towards the western part of the island.

The flora of Ardery Island comprises several species of lichen similar to those found on Odbert Island.

The only recorded invertebrates are ectoparasites of birds. Ardery Island is the type locality for the Antarctic flea *Glaciopsyllus antarcticus*, associate with the nests of Southern fulmars.

MOSSES
Bryum pseudotriquetrum (Hedw.) Gaertn., Meyer & Scherb.
Ceratodon purpureus (Hedw.) Brid.
Schistidium antarcticum (= Grimmia antarctici) (Card.) L.I.Savicz & Smirnova
LICHENS
Buellia frigida (Darb.)
Buellia soredians Filson
Buellia sp.
Caloplaca athallina Darb.
Caloplaca citrina (Hoffm.) Th. Fr.
Candelariella flava (C.W.Dodge & Baker) Castello & Nimis
Rhizoplaca melanophthalma (Ram.) Leuck. et Poelt
Rinodina olivaceobrunnea Dodge & Baker
Umbilicaria decussata (Vill.) Zahlbr.
Xanthoria mawsonii Dodge.
Usnea antarctica Du Rietz
ALGAE
Prasiola crispa (Lightfoot) Kützing *Prasiococcus sp.*

Table 1. List of mosses, lichens and algae recorded from Odbert Island.

Lakes

Cold monomictic lakes and ponds occur throughout the Windmill Islands region in bedrock depressions and are usually ice-free during January and February. Nutrient rich lakes are found near the coast in close proximity to penguin colonies or abandoned colonies. Sterile lakes are

located further inland and are fed by meltwater and local precipitation. On Ardery Island and Odbert Island there are a number of small tarns which are frozen in winter and filled with melt water in summer. Many of the tarns are ephemeral, drying out towards the end of summer. Other tarns located below snow banks are fed continuously by melt water.

Birds and Seals

Odbert island supports breeding populations of Adélie penguins (*Pygoscelis adeliae*), Cape petrels (*Daption capensis*), snow petrels (*Pagodroma nivea*), Southern fulmars (*Fulmarus glacialoides*), Wilson's storm petrels (*Oceanites oceanicus*), and south polar skuas (*Catharacta maccormicki*). Ardery island supports a similar population of the same species except for Adélie penguins. The Giant petrel (*Macronectes giganteus*) which breed on the Frazier Islands approximately 23 km to the north-west is the only species breeding in the Windmill Islands which does not breed in either Ardery Island and Odbert Island.

No seals are found on Ardery Island and Odbert Island although Weddell seals (*Leptonychotes weddellii*) are frequently observed on the sea ice around them. The main pupping area is about 3 km to the south-east between Herring Island and the Antarctic mainland. In this area disturbance of the sea ice caused by movement of the Peterson Glacier ensures open water and easy access to food. About 100 pups are born annually in the region. Elephant seals (*Mirounga leonina*) haul out a little farther to the south on Petersen Island and on the Browning Peninsula. The numbers of these seals, which are mostly mature males, have been increasing with up to 100 seen annually. A few females have been observed.

Adélie Penguin *(Pygoscelis adeliae)*

Two large colonies of Adélie Penguins are present on Odbert Island. In 1985 an estimate of between 5,000 and 10,000 breeding pairs was made for the two colonies on the Island. Eggs start to be laid before the middle of November, the first chicks hatch around mid-December, and juveniles commence leaving the colony in early February. Although Adélie Penguins regularly come ashore on Ardery Island, none nest there.

Southern Fulmar *(Fulmarus glacialoides)*

The total population of Southern Fulmars in the Area is estimated at about 5000 breeding pairs. There are approximately 3000 occupied Southern Fulmar sites on Ardery Island, the largest colonies being located on the northern cliffs and around the eastern tip of the island. On Odbert Island most of the 2000 sites are concentrated in two large colonies on Haun Bluff and in the central north.

Southern Fulmars breed colonially on or near the cliffs and ravines. Nests were situated on small cliff ledges but also on large nearly flat terraces, some birds nest in the open, others in deep crevices or between loose rocks. First eggs appear at the beginning of December and most are laid within the next 10 days. Hatching commences in the third week of January and chicks fledge by mid-March.

Antarctic Petrel *(Thalassoica antarctica)*

On Ardery Island about 275 apparently occupied Antarctic Petrel nest sites have been located. The largest colony, on Northern Plateau, contains at least 150 sites in the main area and some 25 sites in smaller groups around. On Odbert Island 34 nests are located in a small area off the central northern cliffs. The total population has been estimated at just over 300 breeding pairs.

Most nests of Antarctic Petrels are situated on plateau-like areas or gently sloping sections of steep cliffs on the Northern Plateau, and smaller colonies around Soucek Ravine. Nests are situated very close together; isolated nesting on small ledges appears to be avoided. In late November the first Antarctic Petrels return from their pre-laying exodus and within the following week most birds have returned to lay their eggs. First hatchlings appear in the second week of January, fledging commences in late February to early March, and all chicks have left before the middle of March.

Cape Petrel *(Daption capense)*

Approximately 600 Cape Petrel occupied sites have been located on Ardery Island, mostly in small colonies on the northern cliffs. Scattered nests are present on both sides of Snowie Mountain. There are approximately 100 to 200 nesting sites on Odbert Island mostly located around the Fulmar colonies. The total population of the Cape Petrel in the Area is estimated at about 750 breeding pairs.

Cape Petrels prefer nesting sites sheltered by slightly overhanging rocks and substantial cover from the back and if possible the sides. Most nests were found in less steep parts of cliffs or along the top edges of cliffs both in colonies and small scattered groups. After returning from the pre-laying exodus, eggs start to be laid late in November, and hatching commences in the second week of January. Most chicks have fledged by the first week of March.

Snow Petrel *(Pagodroma nivea)*

The total population of Snow Petrels in the Area is estimated at over 1,100 breeding pairs. An estimated 1000 Snow petrel nesting sites were located on Ardery Island in 1990, mostly on the slopes of Snowie Mountain. Snow Petrels appear to be less abundant on Odbert Island than on Ardery with an estimate of between 100 and 1000 nesting sites. In 2003 an estimate of 752 active nests was made for Ardery Island and 824 for Odbert Island.

The Snow Petrels breed in crevices or in holes between loose rocks. Although the level of protection of nests varies considerably, these specific requirements prevent colonial nesting in many cases. Isolated nests may be found anywhere, and within colonies of other species. Suitable Snow Petrel habitat also harbours colonies of Wilson's Storm Petrels. Egg laying varies between concentrations of nests, with laying occurring within the first three weeks of December, and chicks hatching from the middle of January onwards. All are fledged in the first two weeks of March.

Wilson's Storm Petrel *(Oceanites oceanicus)*

Wilson's Storm Petrels are widely distributed, and nest in all suitable rocky areas within the Area. An estimated 1000 nesting sites have been documented for Ardery Island. The population for Odbert Island has been estimated at between 1000 and 2000 pairs, at a lower density than that of Ardery island because of the general spread of suitable rock nesting areas.

Wilson's Storm Petrels breed in deep, narrow holes. First eggs are usually observed commencing the third week of December.

South Polar Skua *(Catharacta maccormicki)*

In 1984/85, ten pairs of South Polar Skua bred on Ardery Island and possibly three more pairs held territories. A similar number was present in 1986/87, although only seven pairs produced eggs. Odbert Island probably had between 10 and 20 pairs. The distribution of South Polar Skua nests on Ardery Island reflects their dependence on petrels. Most pairs have observation points close to petrel nests, from which they can observe their food territory on the bird cliffs. On Odbert Island most nests were near the penguin rookeries.

Nests are shallow hollows in gravel, either fully in the open on flat ground or slightly protected by surrounding rocks. Territories and nest locations appear to be stable from year to year; near a nest there are usually several depressions of previous nests. Egg laying dates vary considerably, though most are concentrated around late November to early December. The first chicks are observed in the last days of December, and juveniles begin to fly by mid February.

Non-breeding bird species

Emperor Penguins *(Aptenodytes forsteri)* do not breed in the Casey area but straggling birds have been observed near Casey station and even far inland. A Chinstrap Penguin *(Pygoscelis antarctica)* was observed in January 1987 in the Adélie Penguin rookery on Whitney Point, north of Casey. Southern Giant Petrels *(Macronectes giganteus)*, both adults and immatures, are regular visitors to Ardery Island. In favourable winds they fly along the bird cliffs in search of

food. The species breeds on the Frazier Islands, 23 kilometres to the north-east. An emaciated juvenile Blue Petrel *(Halobaena caerulea)* arrived at Casey in March 1987. In November 1984 an adult Dominican Gull *(Larus dominicanus)* was observed in the Casey area. Groups of terns, possibly Arctic Tern *(Sterna paradisea)*, have been observed in the Casey area in 1984/ 85 and in 1986/87, when a few groups of up to 100 birds were seen and heard high in the air in March.

6(ii) Restricted Zones within the Area

There are no restricted zones within the Area.

6(iii) Location of Structures within the Area

There are no permanent structures within the Area and none are to be erected.

6(iv) Location of other Protected Areas within close proximity

The following Protected Areas are located in the vicinity of Ardery Island and Odbert Island (see Map A):

- North-east Bailey Peninsula (66°17'S, 110°32'E) (ASPA No 135) approximately 12 km north of Ardery Island and Odbert Island;
- Clark Peninsula (66°15'S, 110°36'E) (ASPA No 136), approximately 16 km north of Ardery Island and Odbert Island;
- Frazier Islands (66°13'S 110°11'E) (ASPA No 160), approximately 23 km north-east of Ardery Island and Odbert Island.

7. Permit 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;
- any management activities are in support of the objectives of the management plan;
- 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; and
- the appropriate authority should be notified of any activities/measures undertaken that were not included in the authorised Permit.

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

Travel to the island should be by foot, over-snow vehicle or boat where possible. Over-snow vehicles used to visit the islands must be left at the shoreline and movement within the area should be by foot.

Defined landing sites for access by sea and helicopter to Ardery and Odbert Islands are shown on Map D. On Ardery Island the preferred boat landing site is at Robertson Landing where there are three rock anchors present to tie down a boat or other equipment. All three boat landing sites marked for Ardery Island on Map D are within 200 metres of colonies of birds, however they represent the only safe landing sites on the island and landings must be undertaken carefully so as to avoid disturbance to the birds. There are no defined pedestrian routes within the Area, however pedestrians should avoid disturbance of the birds at all times.

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

- overflight of the islands should be avoided at all times, except where it is considered essential for scientific purposes. In these instances, overflight must be at an altitude or horizontal distance of no less than 500 metres;
- during the breeding season of penguins and petrels, defined here as the period from 1 November to 1 April, helicopter movement to the islands should be kept to a minimum;
- refuelling is not to take place within the Area;
- only personnel who are required to carry out work in the Area should leave the helicopter;
- the approach to Ardery Island should be at a high altitude and from a southern direction as the lowest densities of birds are on the southern cliffs (see Maps B and D);
- the approach to Odbert Island should preferably be from the south, avoiding cliff areas because of the nesting petrels (see Map C).

7(ii) 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:

- compelling scientific research consistent with the Management Plan for the Area that 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(iii) Installation, modification or removal of structures

- No permanent structures are to be erected in the Area.
- Any structures erected or installed within the Area are to be specified in a Permit.
- Scientific markers and equipment must be secured and maintained in good condition, clearly identifying the permitting country, name of principal investigator and year of installation. All such items should be made of materials that pose minimum risk of contamination of the Area.
- A condition of the Permit shall be the removal of equipment associated with scientific research before the Permit for that research expires. Details of markers and equipment left *in situ* (GPS locations, description, tags, etc. and expected “use by date”) should be reported to the permitting Authority.
- When permitted, the installation of a field hut on Ardery Island must take place before 1 November when the breeding season commences, and removal after 1 April when fledglings have departed. Installation and removal should be by over-snow transport unless sea-ice conditions prevent this.

7(iv) Location of field camps

- Camping is prohibited on Odbert Island except in emergencies.
- If required for field work, a hut may be erected on Ardery Island at the point specified on Map B. There are 8 solid rock anchors available at this location. There is a refuge hut “Robinson Ridge Hut”, on the mainland, located on Robinson Ridge (66°22.4’S 110°35.2’E), approximately 800 metres west of Odbert Island.

7(v) 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.

- No living animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions.
- 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 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 that the risk of their introduction to the environment is minimized.

7(vi) 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 of 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.

7(vii) 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 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 unless the impact of the removal is likely to be greater than leaving the material *in situ*. If such material is found the appropriate Authority must be notified.

7(viii) Disposal of waste

- No wastes, including human wastes, are to be deposited or left in the Area.

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

- 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; the erection or maintenance of scientific equipment, structures and signposts; or for 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.
- Ornithological research shall be limited to activities that are non-invasive and non-disruptive to the breeding seabirds present within the ASPA. Surveys, including aerial photographs for the purposes of population census, shall have a high priority.
- To help maintain the ecological and scientific values of the Area, visitors shall take special precautions against introductions. 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.

7(x) Requirement for reports

- Parties should ensure that the principal Permit Holder for each Permit submits to the appropriate national authority a report on 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 Plan of Management.
- 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 considered in any review of the Plan of Management and in organising the use of the Area. A copy of the report should be forwarded to the National Party responsible for development of the Management Plan (Australia) to assist in management of the Area, and monitoring of bird populations. Additionally, visit reports should 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.

7(xi) Emergency provision

Exceptions to restrictions outlined in the Management Plan are permitted in cases of emergency as specified in Article 11 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty (the Madrid Protocol).

8. Supporting documentation

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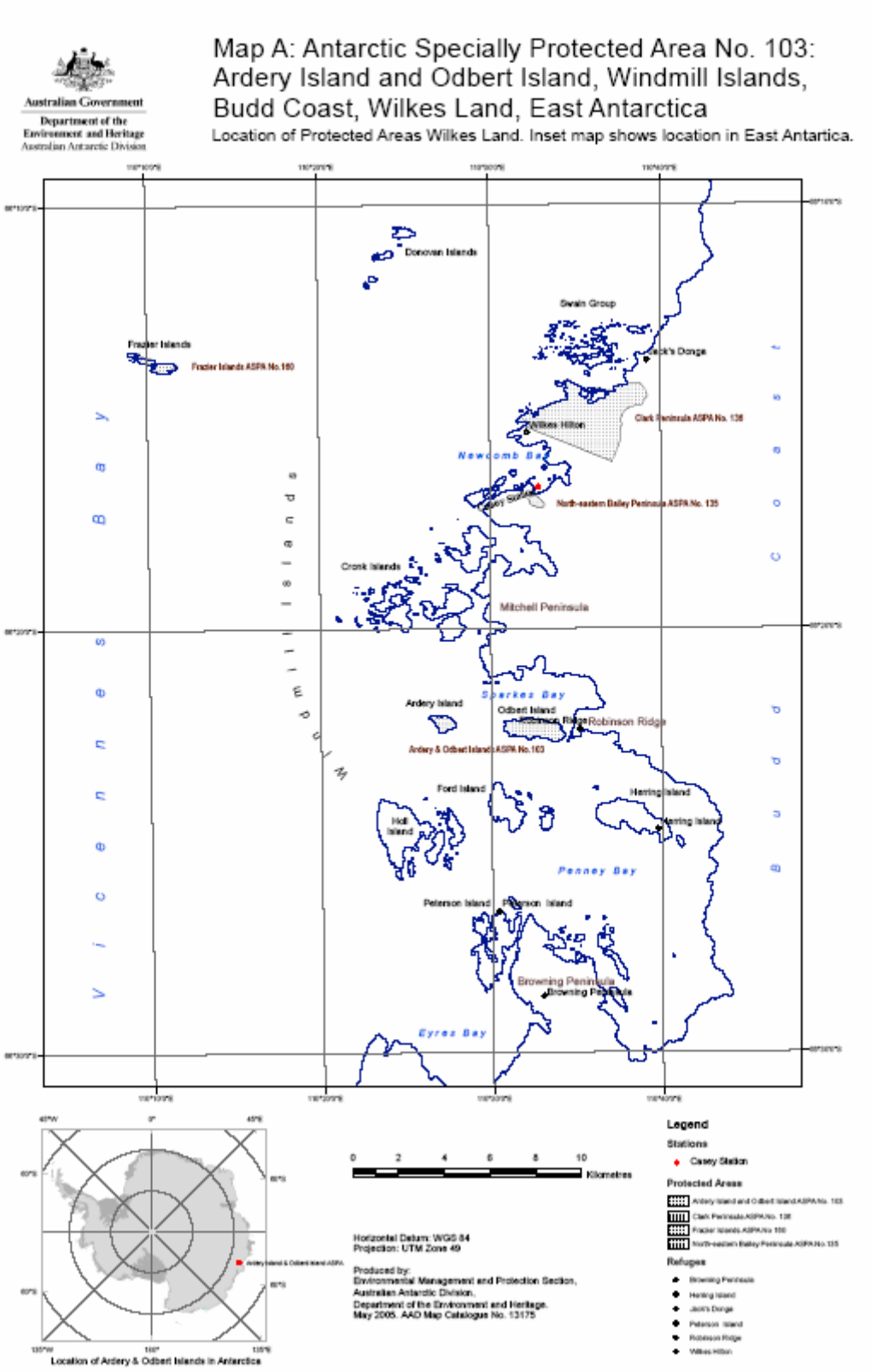
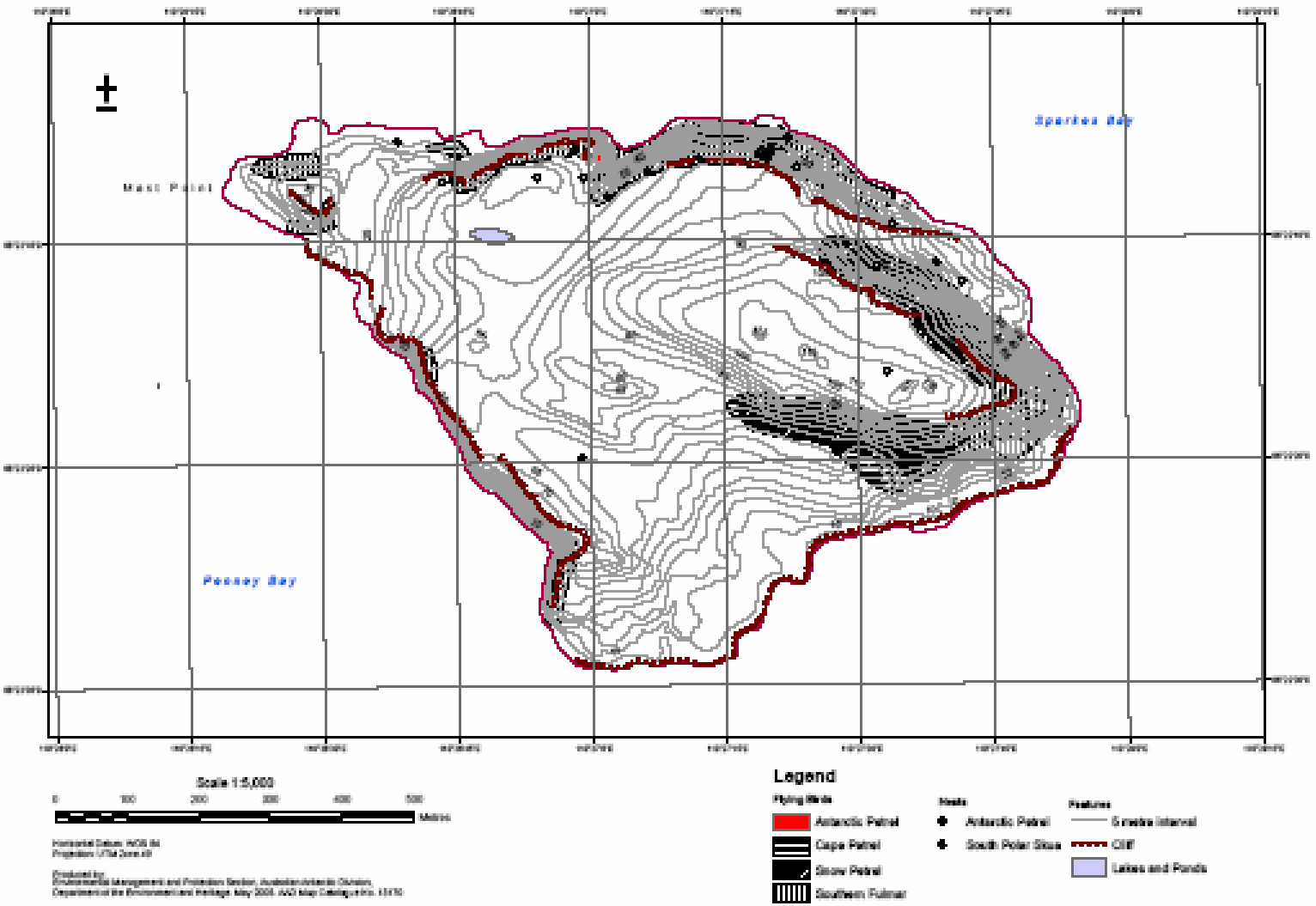
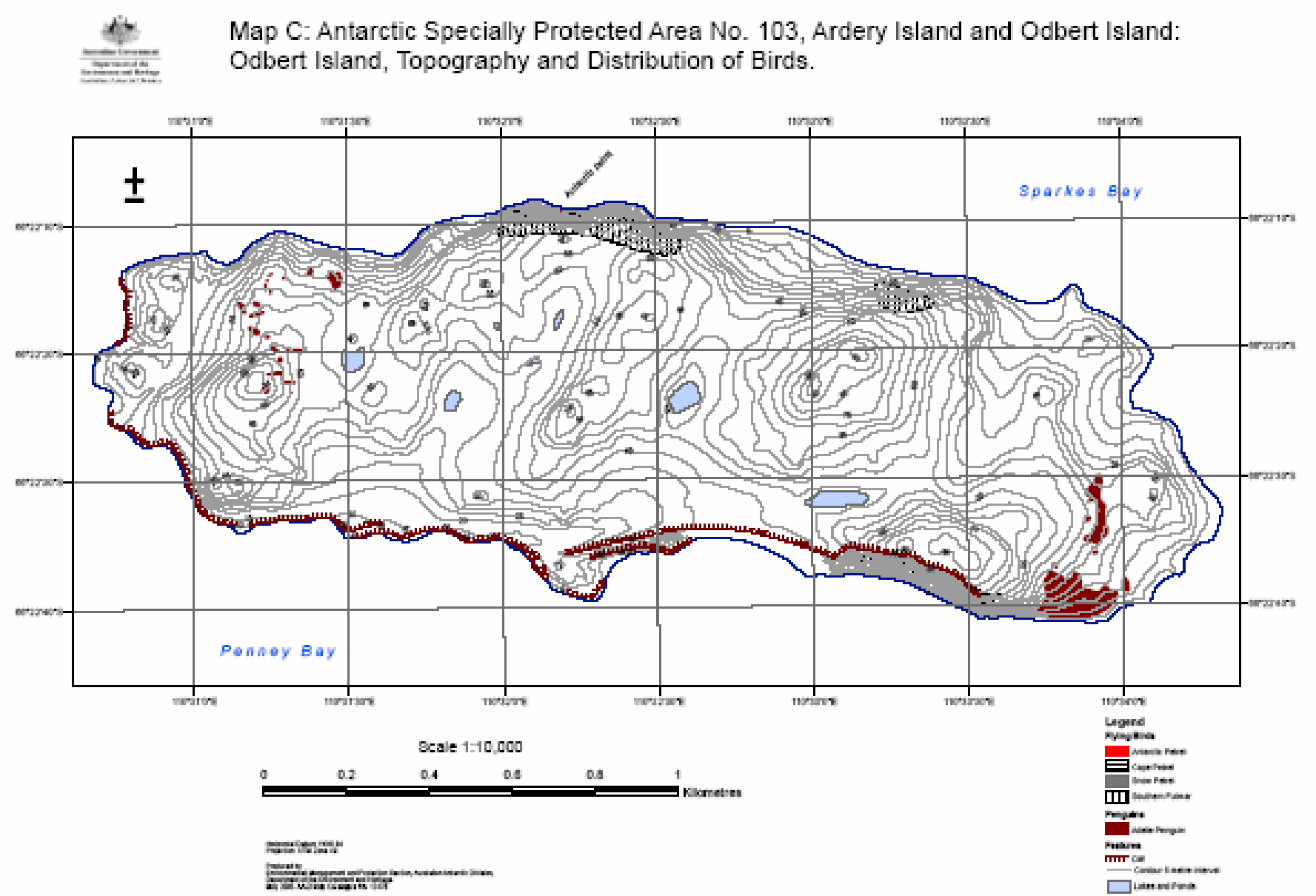
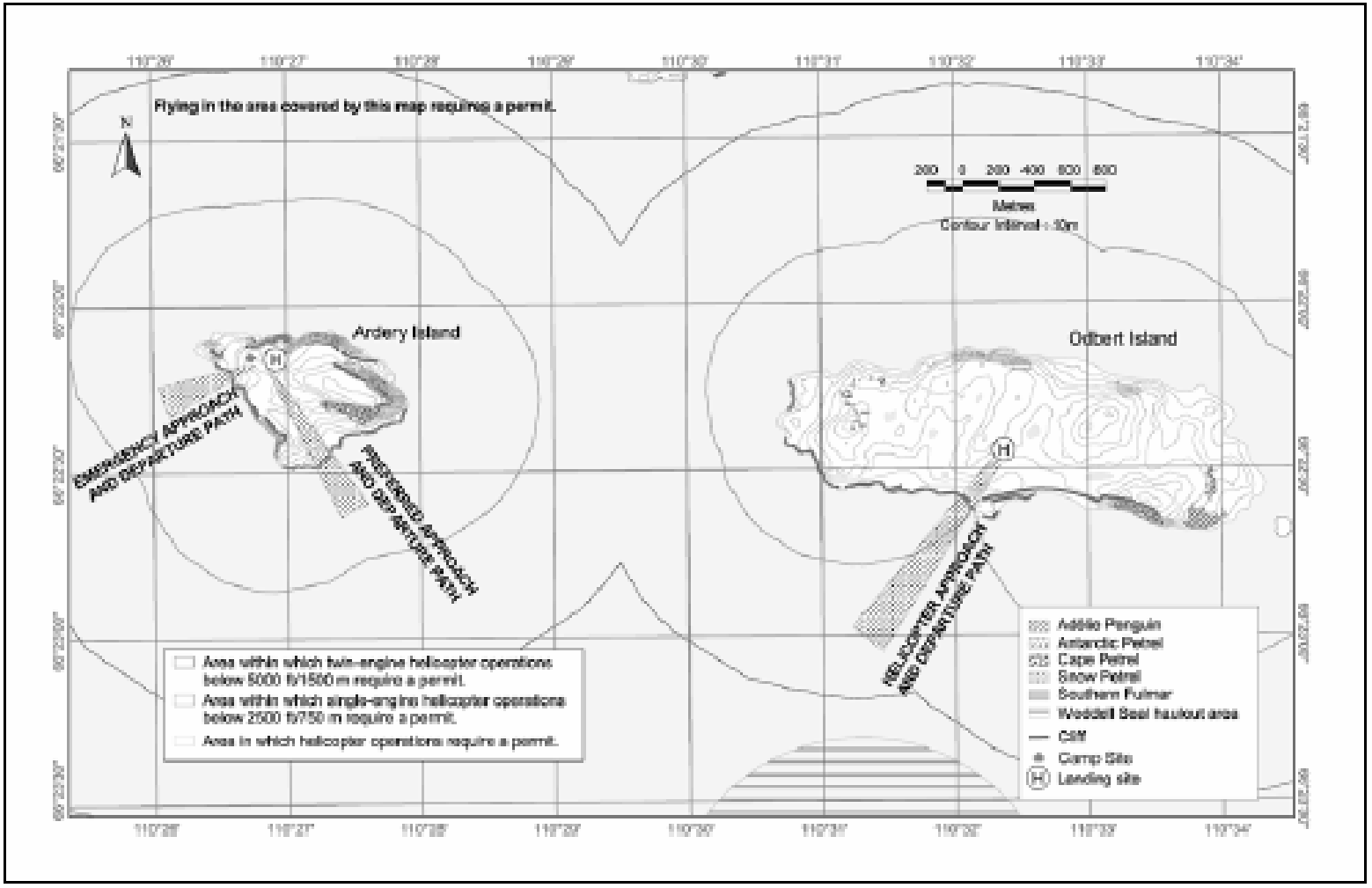

Australian Government
Department of the Environment and Heritage
Australian Antarctic Division
Map A: Antarctic Specially Protected Area No. 103: Ardery Island and Odbert Island, Windmill Islands, Budd Coast, Wilkes Land, East Antarctica
Location of Protected Areas Wilkes Land. Inset map shows location in East Antartica.
Donovan Islands
Swain Group
Fraser Islands
Fraser Islands ASPA No.160
Jack's Dongo
Clark Peninsula ASPA No. 136
Wilkes Hilton
Newcomb Bay
North-eastern Bailey Peninsula ASPA No. 135
Cronk Islands
Mitchell Peninsula
Sparkes Bay
Ardery Island
Odbert Island
Robinson Ridge
Ardery & Odbert Islands ASPA No.103
Ford Island
Herring Island
Holl Island
Penney Bay
Peterson Island
Browning Peninsula
Eyres Bay
Vincennes Bay
Windmill Islands
Budd Coast
Location of Ardery & Odbert Islands in Antarctica
0 2 4 6 8 10 Kilometres
Horizontal Datum: WGS 84
Projection: UTM Zone 49
Produced by:
Environmental Management and Protection Section,
Australian Antarctic Division,
Department of the Environment and Heritage.
May 2005. AAD Map Catalogue No. 13175
Legend
Stations
Casey Station
Protected Areas
Refuges

Map B: Antarctic Specially Protected Area No 103, Ardery Island and Odbert Island: Topography and Distribution of Birds.




Map C: Antarctic Specially Protected Area No. 103, Ardery Island and Odbert Island:
Odbert Island, Topography and Distribution of Birds.
Sparkes Bay
Penney Bay
Scale 1:10,000
0
0.2
0.4
0.6
0.8
1
Kilometres
Legend

Map D: Antarctic Specially Protected Area No 103, Ardery Island and Odbert Island: Aircraft Operations and Approach.



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